

ADAPTATION DURING A LONGITUDINAL INTEGRATED CLERKSHIP:
THE LIVED EXPERIENCES OF THIRD-YEAR MEDICAL STUDENTS
AT THE NORTHERN ONTARIO SCHOOL OF MEDICINE

by

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ABSTRACT

There are three interrelated concepts of what medical students learn, which include the formal, informal, and hidden curriculum. Several researchers who have investigated notions of the hidden curriculum have demonstrated how the experiences of medical training entrenched in the hidden curriculum can have a profound impact on medical student adaptation. The most influential transitional stage in undergraduate medical education is the third-year clinical clerkship, when medical students transition from classroom learners into clinicians. The Northern Ontario School of Medicine's (NOSM) clinical clerkship year consists of a mandatory eight-months of living and working in rural and northern communities throughout Northern Ontario, and learning in the context of rural family practice.

Informed by a social constructivist research paradigm, I explored how 12 third-year students described the challenges they had to manage and, in response, the strategies they employed to adapt to their clerkship. I elicited their experiences and perspectives to contribute to a rich understanding of how students at the NOSM describe developing processes of adaptation during the Comprehensive Community Clerkship. Data were collected between August 2011 and April 2012, including: a) pre-clerkship interviews and a demographic questionnaire, b) mobile methods in the form of 'guided walks' in the communities, and c) post-clerkship interviews. The quality of the data collection and analysis were enhanced through processes of methodological and interpretive rigour, representativeness and authenticity, rich description and contextual relevance, audit trail, and reflexivity.

Through an inductive thematic analysis of the data, the findings provide a rich description of events experienced such as medical training in one's hometown or a familiar community,

transitions including adaptation to the clinical setting and to the medical profession, and the influence of the clerkship on career path, personal well-being, and empathy for patients.

The findings serve to advance our understanding of how medical students describe developing processes of adaptation throughout a longitudinal integrated clerkship. Implications are considered for medical students, the NOSM, the clerkship communities, and medical schools nationally and internationally. I propose recommendations regarding the suitability of authentic methods in medical education research, and discuss the implications for rural and northern health research.

Keywords

medical student adaptation, transitions, longitudinal integrated clerkship

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CHAPTER ONE

INTRODUCTION

The concept of adaptation among medical students has been documented for over 50 years (Barton, 1995; Glaser, 1956; Notman, Salt, & Nadelson, 1984). In fact, in 1956, Robert Glaser wrote the following: “[d]uring their four years, medical students encounter a number of new situations requiring adaptation, not the least of which is the handling of patients” (p. 20). As a *process*, the concept of adaptation among medical students has been defined as “an ongoing, proactive, dynamic process rather than a fixed endpoint” (Barton, 1995, p. 37). In addition, adaptation “involves recasting personal ambitions and values to be consistent with what can be achieved, given the local circumstances” (Auer & Carson, 2010, p. 2), which signifies the development of effective strategies in response to the challenges and demands of medical training.

The most influential transitional stage in undergraduate medical education may occur during the third-year clinical clerkship when medical students transition from spending more time learning in the classroom to spending more time in a clinical setting (Haglund, aan het Rot, Cooper, Nestadt, Muller, Southwick et al., 2009; Radcliffe & Lester, 2003). Thus, medical students must adapt in response to the demands of this stage in their medical training. For example, the students must manage several challenges and transitions during their clinical clerkship, including adjustment to the clinical environment (Treadway & Chatterjee, 2011) and professional socialization to becoming a physician (Dawn, 2008). There is also an expectation that third-year medical students gain applied knowledge and practical competence in primary care and medical specialties during supervised clinical encounters with patients (Mylopoulos &

Regehr, 2009). Therefore, developing processes of adaptation in response to the changes and transitions the students go through ought to aid them with the attainment of the knowledge, skills, and values that will enable them, as clinicians, to understand the health needs of their patients.

One way of contextualizing medical student adaptation is describing a potentially stressful event, which for a third-year medical student might include their first experience with the death of a patient. Part of their ‘primary appraisal’ of the event might include introspective reflection of the emotional effect on them (Lazarus & Folkman, 1984). The next cognitive manifestation might include a ‘secondary appraisal’ such as the thought of self-regulation (Lazarus & Folkman, 1984). These two forms of appraisal can occur in both short- and long-term processes. Next, as part of the consolidation of the stress occurrence, strategies are employed to help manage the circumstance, which are likely to include expressions of empathy for the patient and their family. Finally, how the student responds in the short- and long-term can result in effective adaptation processes (Lazarus & Folkman, 1984) such as empathy for the patient and changes in attitudes related to end of life stages.

The purpose of this study is to understand how third-year medical students at the Northern Ontario School of Medicine (NOSM) describe their experience developing processes of adaptation during their mandatory eight-month integrated clerkship in rural and northern communities throughout Northern Ontario. The NOSM Year Three curriculum, known as the Comprehensive Community Clerkship (CCC), is when students experience parallel exposure to various interprofessional disciplines and medical specialties as encountered in the context of rural family practice (Tesson, Hudson, Strasser, & Hunt, 2009). I explored how third-year medical students described the challenges and situations they encountered during their longitudinal integrated clerkship, and in response, what strategies they employed as they sought to adapt to

their clerkship. Informed by a social constructivist research paradigm, 12 medical students were recruited from the NOSM's 2011-2012 academic cohort to answer the research question: how do third-year NOSM students describe their experience developing processes of adaptation during the CCC?

The purpose of this chapter is to provide the contextual background of the study. I begin by describing the context of undergraduate medical education (UME) in Canada. Next, I delineate between the traditional UME curriculum model, often referred to as the Flexner Model (Flexner, 1910), and more contemporary approaches to medical education, specifically longitudinal integrated clerkships with a focus on the NOSM's distributed community engaged learning model. Thirdly, I provide a geographical and contextual overview of the region in which the study took place, Northern Ontario, Canada. I conclude the chapter by stating the problem and providing the rationale for the study.

Undergraduate Medical Education in Canada

According to the Association of Faculties of Medicine in Canada, the national organization of medical schools in Canada, there are over 10,000 applicants to Canada's 17 accredited medical schools each year. The Association also reports just over 2,800 undergraduate positions were available in first-year classes in 2011-2012 (Office of Research and Information Services, 2011). Thus, there is a high level of competition among applicants vying to be granted entry into medical schools (Sullivan, 2008).

There are notable similarities and differences in how undergraduate medical education is taught across Canadian medical schools, with such modes of delivery as didactic lectures, problem-based learning, distributed education, self-directed learning, patient simulations, and community-engaged medical education (e.g. Tesson, Hudson, Strasser, & Hunt, 2009; Worley,

Prideaux, Strasser, Silagy, & Magarey, 2000). Most Canadian medical schools offer a four-year undergraduate medical education program. The University of Calgary and McMaster University are the exception, since they offer three-year condensed programs that are delivered without summer interruptions. In the four-year program, undergraduate medical education generally spans across three phases of teaching and learning. These are classroom years (years one and two), clinical clerkships (year three), and clinical rotations (year four). Many schools have their students do rotations through medical specialties during the third-year and reserve fourth-year for electives.

Traditional undergraduate medical education, based on the Flexner Model (Flexner, 1910), consists of studying the basic sciences in the classroom with little or no clinical exposure in the first two years, and clinical immersion in the last two years (Ebert, 1992; Small, Soriano, Chietero, Quintana, Parkas, & Koestler, 2008). Year Three at most medical schools with Flexnerian curriculum involves a series of four to six-week block rotations each in a different clinical discipline (Ebert, 1992). Consequently, third-year medical students have to adapt quickly to the clinical setting which is often at a very large tertiary care teaching hospital. In addition, moving from one discipline to another means that students get to know new people and the new location every four to six weeks (Small, Soriano, Chietero, Quintana, Parkas, & Koestler, 2008). The final year of undergraduate medical programs consists of clinical rotations across several disciplines including: internal medicine, family medicine, surgery, emergency medicine, obstetrics, and pediatrics. Medical students must develop processes of adaptation in response to the challenges and demands during their medical training (Auer & Carson, 2010; Barton, 1995; Glaser, 1956). Throughout their experiences, medical students “must acquire extensive amounts of knowledge and learn to apply this knowledge efficiently to routine problems of practice”

(Mylopoulos & Regehr, 2009, p. 128), thereby necessitating the development of a broad spectrum of adaptive strategies along the way. In the end, the significant breadth of knowledge acquired throughout undergraduate medical education is intended to ultimately prepare new graduates with a Medical Degree for postgraduate medical training and specialization, which are the usual next steps in their career paths.

Beyond the Flexner Model of Undergraduate Medical Education

The Flexner Model of undergraduate medical education, widely adopted during the twentieth century, is largely defined with classroom-based learning in the early years and clinically-based learning in large teaching hospitals in the later years. In response to the increasing healthcare needs of communities and shortages in health human resources in rural and remote regions of many countries, several medical schools and health education institutions have developed, or reformed, their curricula to better address these needs by training students in places where they may eventually practice (Cooke, Irby, & O'Brien, 2010; Frenk, Chen, Bhutta, Cohen, Crisp, Evans et al., 2010). For example, rural-based education programs and clinical experiences for medical students, nursing students, and other health professionals have been recognized as an effective means of training and retaining graduates in rural areas (Frenk et al., 2010). There is growing evidence nationally, and internationally, that medical students' and residents' places of learning and clinical training have a strong influence on their eventual place of practice (Canadian Medical Association, 2000; Nichols, Worley, Toms, & Johnston-Smith, 2004; Ranmuthugala, Humphreys, Solarsh, Walters, Worley, Wakerman et al., 2007; Tesson, Hudson, Strasser, & Hunt, 2009; Walters & Worley, 2006). The implementation of a variety of rural and community-based longitudinal integrated clerkships (LICs) in undergraduate medical education extends globally including areas such as: Australia, United States, United Kingdom, South

Africa, and Canada. Representatives from many of the medical schools who are already implementing LICs, as well as those from schools interested in the model, have organized under the Consortium of Longitudinal Integrated Clerkships (CLIC). According to the CLIC (Norris, Schaad, DeWitt, Ogur, & Hunt, 2009) longitudinal integrated clerkships should: (a) expose medical students to the different facets of health care that patients experience during the course of an illness, (b) provide medical students with opportunities for ongoing relationships with clinicians, and (c) provide medical students with opportunities to achieve core clinical competencies over time through parallel exposure across multiple disciplines simultaneously across each phase of the life cycle. Parallel exposure during clinical training intimates that:

the content and process of patient care change rapidly, rendering adaptation to change a necessary skill for successful practice. These factors may be most pronounced in primary care, which demands a huge breadth of knowledge and skills to provide care for people of all ages and treat a wide spectrum of disease (Nothnagle, Anandarajah, Goldman, & Reis, 2011, p. 1539)

There is an extensive amount of empirical research on the Parallel Rural Community Curriculum (PRCC) at Flinders University in South Australia (Worley, Esterman, & Prideaux, 2004; Worley, Prideaux, Strasser, Silagy, & Magarey, 2000; Worley, Prideaux, Strasser, March, & Worley, 2004; Worley, Prideaux, Strasser, Magarey, & March, 2006), the Parnassus Integrated Student Clinical Experiences program at the University of California, San Francisco (Poncelet, Bokser, Calton, Hauer, Kirsch, Jones et al., 2011; Poncelet, Wamsley, Hauer, Lai, Becker, & O'Brien, 2013; Teherani, O'Brien, Masters, Poncelet, Robertson, & Hauer, 2009), and the Harvard Medical School-Cambridge Integrated Clerkship (Hirsh, Gaufberg, Ogur, Cohen, Krupat, Cox et al., 2012; Ogur, Hirsh, Krupat, & Bor, 2007; Ogur & Hirsh, 2009). These

researchers concluded that medical students undertaking a LIC perform better academically, or comparatively, in relation to their peers in the block rotation model. In addition to positive educational outcomes, the students reported increased clinical exposure to common clinical conditions and procedures during their LICs compared to their peers in the tertiary hospital setting. These research contributions have advanced our understanding of LICs in the context of rural family practice. The LIC developed at the Northern Ontario School of Medicine was largely influenced by the success of the PRCC at Flinders University in South Australia in terms of exposing third-year clinical clerkship students to rural family practice through longitudinal and community-based learning.

The Northern Ontario School of Medicine (NOSM)

At the NOSM, a fully accredited medical school in Northern Ontario, Canada, the distributed community-engaged learning model bridges students and communities throughout a vast land covering 800,000 km², or 90% of the province, with the use of supportive technology (Strasser, Lanphear, McCready, Topps, Hunt, & Matte, 2009). Beginning with Year One of the MD Program, the NOSM curriculum is interwoven across five core themes and includes didactic teaching sessions, case-based learning in small and larger group sessions, as well as laboratory and structured clinical skills sessions (see Appendix A for an overview of the NOSM MD Program). Theme One, Northern and Rural Health, focuses on knowledge about rural health to support the development of skills required for socially accountable physicians who understand, and can respond to, the health care needs of Northern Ontario. Theme Two, Personal and Professional Aspects of Medical Practice, focuses on the development of an understanding of professional issues surrounding medical practice, such as: the medical-legal frameworks for the practice of medicine in Ontario and Canada, ethical issues, patient safety, and physician

advocacy. Theme Three, Social and Population Health, focuses on the social and cultural perspectives of individual and population health, public health, and the social determinants of health. The emphasis is on the acquisition of knowledge pertaining to epidemiology and statistics, critical appraisal of various research designs, and the application of evidence-based medicine to patient populations. Theme Four, Foundations of Medicine, is based on the acquisition of knowledge pertaining to, and the application of, the basic medical sciences (e.g., anatomy, physiology, biochemistry, microbiology, etc.) in the context of patient care. Finally, Theme Five, Clinical Skills in Healthcare, provides students with opportunities to interact with standardized patients, shadow and observe community and visiting physicians and other health care professionals in a clinical setting. Community-engaged medical education for clinical learning is another characteristic of the NOSM MD Program, with students completing community learning sessions in a variety of health care settings. Students also undertake three four-week integrated community experiences in Aboriginal, rural, and remote communities throughout Northern Ontario by the end of Year Two. In contrast to the Flexner model, students at the NOSM learn basic clinical skills early in the first two years and have considerable clinical exposure before they start their third-year clerkship.

The NOSM Year Three curriculum, known as the Comprehensive Community Clerkship (CCC), varies significantly from traditional Canadian medical school clerkships in which students learn the major clinical disciplines in an urban teaching hospital in block rotations (Tesson, Hudson, Strasser, & Hunt, 2009). Instead, the curriculum consists of a mandatory eight-month longitudinal integrated clerkship in rural and northern communities throughout Northern Ontario, Canada, in which students have parallel exposure to the clinical disciplines and areas of medicine across each phase of the life cycle (e.g., pre-natal, end of life), as encountered in the

context of rural family practice (Tesson, Hudson, Strasser, & Hunt, 2009). The NOSM's CCC consists of up to eight medical students living and learning in one of 12 large rural or small urban communities throughout Northern Ontario. These settings are located away from the main campuses at Thunder Bay (Lakehead University) and Sudbury (Laurentian University) (see Appendix B for a map of Northern Ontario and the geographical location of each clerkship community).

In the NOSM Year Four curriculum, known as Phase Three of the MD Program, students undertake four-week clinical rotations in Internal Medicine, Surgery, Women's Health, Children's Health, Mental Health, and Emergency Medicine at the teaching hospitals located at Thunder Bay and Sudbury. Similar to the Year Four curriculum at other medical schools in Canada, Year Four at the NOSM is also characterized by electives and application for entry into postgraduate medical training throughout Canada by way of the Canadian Residency Matching Service (CaRMS). The CaRMS is an organization which works collaboratively with medical schools to provide an independent process designed to match selections made by applicants about where they would like to attend postgraduate medical training along with the decisions made by the program directors on which applicants they wish to enrol in their programs. As the present study's findings will demonstrate, the thought processes associated with consideration for a future in medical training, such as the selection of a career path, which electives to enrol in to better prepare for postgraduate training, occur during the third-year clinical clerkship.

The Geographical Context of the Study – Northern Ontario, Canada

Ontario is Canada's largest province by population and second to Québec in landmass (Statistics Canada, 2010). The province is often broken into two regions, Northern Ontario and Southern Ontario. Approximately 90% of Ontario's population lives in the southern portion of the

province. In contrast, Northern Ontario spans 800,000 km², or 90% of the province's landmass, and is sparsely populated with 6 to 10% of the population depending on the definition of northern used (Pitblado, 2005; Weller, 1988). Northern Ontario is primarily an industry-based economy (Weller, 1988). In addition, a large proportion of Ontario's Aboriginal (40%), Francophone (26%), and aging population reside in Northern Ontario (Northeast & Northwest Local Health Integration Network, 2010).

For the purposes of the current study, the Rurality Index of Ontario (RIO) will be used to define the geographic boundaries distinguishing between southern and Northern Ontario (Ontario Ministry of Health and Long Term Care, 2009). The RIO is a measure employed by Ontario's Ministry of Health and Long-Term Care (MOHLTC), which attributes underserviced rural and northern communities in census subdivisions (CSDs), which are areas deemed as municipalities for statistical purposes, with a score based on several factors such as lack of transportation, travel time to referral centres for healthcare, and population density. Communities in CSDs with a RIO score of 40 or higher are identified as communities with unique needs (Ontario MOHLTC, 2009). In addition, there are five Northern Urban Referral Centres (NURCs), Sudbury, North Bay, Thunder Bay, Sault Ste. Marie, and Timmins, which were grandfathered with the designation "underserviced". Although the NURCs' RIO is below 40, they continue to serve as referral centres for the north (Ontario MOHLTC, 2009).

Results from the national study *How Healthy Are Rural Canadians* suggest that people who live in rural communities tend to present with poorer health than that of their urban counterparts (DesMeules, Pong, Lagacé, Heng, Manuel, Pitblado et al., 2006). Health care services are also accessed differently by some populations depending on their geographical location and distance from referral centres (Romanow, 2002). As a result, many individuals do

not access primary care optimally because of negative aspects of their social and physical environments such as lack of transportation and increased travel costs for specialized care (Curtis & Jones, 1998). There are few large regional centres in Northern Ontario (DesMeules, Pong, Lagacé, Heng, Manuel, Pitblado et al., 2006; Ontario MOHLTC, 2009). A multitude of factors contribute to the unique challenges to providing equitable access to health care that meets patients' needs across Northern Ontario. They include health human resource shortages, long travel distances, under-served areas, and under-resourced infrastructure (Ministerial Advisory Council on Rural Health, 2002; Romanow, 2002).

Relative to the rest of Ontario, residents in Northern Ontario have higher smoking rates, a higher incidence of chronic disease, particularly diabetes and some circulatory diseases; a higher incidence of obesity; higher mortality rates from unintentional injuries, poisoning, motor vehicle trauma, suicide; and shorter life expectancies for both females and males (DesMeules, Pong, Lagacé, Heng, Manuel, Pitblado et al., 2006). Many of the medical students at the NOSM undertaking their longitudinal third-year clerkships in rural and northern communities throughout Northern Ontario, Canada, will experience these challenges firsthand through their patients in the context of rural family practice.

Statement of the Problem

As mentioned, from the outset of the NOSM Year One curriculum, students research the multitude of factors that contribute to the challenges to delivering health care to rural and northern areas of Ontario. By the time the NOSM students enter the third-year clinical clerkship, they will have experienced three four-week community placements in Northern Ontario. As a result of these experiences and early clinical exposure through other aspects of the curriculum, the students enter their clinical clerkship with some familiarity of the characteristics of clinical

training, as well as the differences in approaches to primary care service delivery. During their clinical clerkship, students live and work in a community in Northern Ontario for eight months, where they acquire the necessary skills and strategies to understand and respond to the health care needs of their patients. The variability in patient needs and differences in healthcare approaches from one community to another could potentially influence how the students describe their experience developing processes of adaptation during the clerkship. Describing the differences and similarities between the students' lived experiences in relation to 'place' from their own perspectives will serve to further contextualize the various processes of adaptation they develop in response to the unique challenges of primary care service delivery in Northern Ontario. The study's methodology will create a space to elicit a rich understanding of the students' perspectives in the different contexts in which they live and learn for eight months. The findings will provide meaningful descriptions of their lived realities in the contexts where they encounter them.

The NOSM's third-year clinical clerkship consists of the students living, learning and working in a rural and northern community for the entire academic year. Presumably, the sources and requirements of adapting to a multitude of new environments (e.g., physical, social, cultural, and academic) throughout the clerkship are multifaceted. Over and above the academic and clinical responsibilities assigned to them, the students must determine whether, and how, they will integrate into the community to which they are being relocated. However, the adaptation processes medical students at the NOSM undergo during the longitudinal integrated clerkship have not yet been investigated. Furthermore, how medical students describe their experience adapting and belonging to the medical profession and the broader community where they live has not been explored.

I sought to better understand the NOSM student experience of managing challenges between, or balance of, multiple simultaneous identities: professional, student, colleague, and community member throughout the clerkship. I conducted pre- and post-clerkship conversational qualitative interviews and interviews at the three-month point in the form of guided walks in the communities where the students undertook their clerkship. Gaining the perspectives of medical students in the contexts where they are encountering them, in their place of learning, is of particular significance. By eliciting their lived experiences where they were encountering them and visiting the communities, or ‘places’ of learning, I was able to explore with each student, his/her clerkship experience *in situ*. Visiting the students in the communities created an optimal space for students to reflect on their experiences as they were living them.

Rationale

Investigating the transition of third-year medical students in relation to their adaptation throughout the clerkship experience is of particular relevance because the transition occurs with few forewarnings that they are about to experience a shift resulting in “values and norms that make up professional identity” (Wendland & Bandawe, 2007, p. 74). The evidence supporting the potentially overwhelming experiences will be discussed in the next chapter, however it is important to highlight that

the rules governing the responses to these experiences are unclear. It is not obvious to students that the beliefs and ideas with which they entered school still apply, so they take their cues from the behavior[u]rs they observe [...] responses to these events are rarely discussed[...]and] these experiences have frequently gone unacknowledged and unexplored. (Treadway & Chatterjee, 2011, p. 1191)

Therefore, describing how students understand their third-year experiences can have far-reaching implications for medical students undertaking longitudinal integrated clerkships, as well as for the schools implementing them.

The Northern Ontario School of Medicine is the first medical school in the world in which all third-year students undertake a longitudinal integrated clerkship (Eggertson, 2007), beginning with the inaugural class who did their clerkship in 2007-2008 (Tesson, Hudson, Strasser, & Hunt, 2009). An external evaluation of the Comprehensive Community Clerkship (CCC) was conducted by Dr. Ian Couper in June 2008, following the completion of the inaugural class' clerkship year (Couper, Worley, & Strasser, 2011). Seven students from the inaugural class were interviewed in two groups (a group of four and a group of three) from two different placement communities. In addition, representatives from many other stakeholder groups were interviewed either alone, or in pairs, including faculty, site liaison clinicians, physician preceptors, site administrative co-ordinators, and hospital administrators. Following thematic analysis to identify common themes emerging from the data, several recommendations for change were shared in the evaluation report. One of the key elements recommended for further study was the social aspect associated with the eight-month physical displacement from home campus located at Sudbury or Thunder Bay.

To my knowledge, the present study is the first to explore third-year NOSM students' descriptions of their lived experiences in relation to a clerkship. The study findings will contribute to a rich understanding of how students at the NOSM, and potentially students enrolled in other parallel course programs, describe developing processes of adaptation as they are experiencing them throughout their clinical clerkship. By advancing our understanding of the students' experiences before, during, and after clerkship, in relation to living and working in rural

and northern communities, medical educators and faculty can help to facilitate the transition to clinical clerkship through formal course offerings designed to prepare the students (O'Brien & Poncelet, 2010). Suggestions emerging from the study findings will provide insight for future orientation initiatives and placement experiences in terms of formal teaching and learning activities to prepare students for their upcoming longitudinal integrated clerkship experience. For example, by extending our understanding of the CCC experience at the NOSM, the adaptation processes that students describe can “help [future CCC] students become more comfortable with the communities and faculty that [will] affect their training and shape their future lives” (Tesson, Hudson, Strasser, & Hunt, 2009, p.109). Finally, the findings will lead to recommendations for the continuous improvement of the CCC, as well as elicit further research questions in the area of community-engaged medical education.

CHAPTER TWO

LITERATURE REVIEW

[“...a great deal of what is taught – and most of what is learned – in medical school takes place not within formal course offerings but within medicine’s hidden curriculum” (Hafferty, 1998, p. 403)]

I will begin the literature review with a description of Hafferty’s (1998) conceptual framework of the multiple forms of curriculum within which medical students learn. I will subsequently describe where medical student stress, appraisal, and coping have previously been discussed in the literature. Next, I will discuss the concept of adaptation in medical education research. Finally, I will state the contentious issues and provide the research questions.

Hafferty’s Conceptual Framework of the Medical Education Learning Environment

Medical education research is a dynamic field of inquiry in which many researchers are generating new knowledge (Bunniss & Kelly, 2010). Hafferty (1998) distinguished three interrelated concepts of what medical students learn: formal, informal, and hidden curriculum. He defined the formal curriculum as “the stated, intended, and formally offered and endorsed curriculum” (p. 404). One example of the formal curriculum is the expression of the learning outcomes and objectives derived from the Medical Council of Canada. These statements have been devised to help guide medical students become competent physicians. Next, Hafferty defined the informal curriculum as teaching and learning opportunities that take place between faculty and students outside of the formal learning environment. There is little doubt that, although not formally intended, these encounters contribute to gaining useful knowledge, such as the provision of additional teaching points following a formal lecture. Finally, Hafferty

operationally defined the hidden curriculum as “aspects of what goes on in the life-space we call medical education” (p. 404), meaning what is learned about good (e.g., patient-centred) and bad (e.g., unprofessional) medicine outside of course offerings such as a patient encounter at the clinic. Several authors have broadened our understanding of how the hidden curriculum can shape the values, attitudes, and roles of medical students (Beagan, 1998; Gaufberg, Batalden, Sands, & Bell, 2010; Treadway & Chatterjee, 2011). Beagan (1998) investigated the professionalization processes of medical students and the effects of the hidden curriculum on identity formation throughout medical training. Gaufberg and colleagues (2010) described how third-year students at Harvard Medical School reflected on the hidden curriculum by analyzing narrative essays. A thematic analysis using grounded theory revealed the students’ reflected on many concepts including the hardening of emotional responses during patient encounters and the role modeling from physicians as part of the hidden curriculum.

Of the three concepts, the hidden curriculum has been the least explored in medical education (Hafferty, 1998; Treadway & Chatterjee, 2011). There are several reasons why this is the case. The mention of hidden curriculum generally carries a negative connotation due to some elements having been deemed as unfavourable on student learning such as prejudiced advice from physicians toward certain fields of medicine when deciding on a career path. In addition, researching the hidden curriculum opens up the possibility of uncovering findings that may be critical, but also constructive, to the population under study and/or the institutions involved. Furthermore, researchers exploring the hidden curriculum must employ suitable research methods that engage the students in describing what is not formally taught in medical school curricula (Association of Faculties of Medicine in Canada, 2010). Exploring the hidden curriculum from the students’ perspectives is important in order to better understand the changes and transitions

they undergo during medical training. Through a multitude of strategies engaging current and former medical students, and through mobile methods, the present study's methodology accommodates gaining the student experience of the hidden curriculum in the context where they are encountering it. By creating space for the students to share their experiences, the students can describe the challenges they have to manage and, in response, the strategies they must employ to adapt to their clerkship.

Perceived Stress by Medical Students

There are inherent expectations and desires among students enrolled in medical education programs such as pursuing a career in a preferred medical discipline. One of the most documented concepts in medical education research is distress among medical students. For example, there is a wide array of literature concerning the psychosocial and academic stressors associated with undergraduate medical training, including moral distress (Wiggleton, Petrusa, Loomis, Tarpley, Tarpley, O'Gorman et al., 2010), interpersonal relationships, lack of leisure and social time, academic pressures such as the volume of curriculum and work, achievement, evaluation and assessment (Firth, 1986; Stern, Norman, & Komm, 1993; Toews, Lockyer, Dobson, Simpson, Brownell, Brenneis et al., 1997; Vitaliano, Maiuro, Mitchell, & Russo, 1989), and financial burden (Morra, Regehr, & Ginsburg, 2008).

It is also widely known that medical students perceive more distress in their lives in comparison with graduate student populations and the general population (Dyrbye, Thomas, & Shanafelt, 2006; Toews et al., 1997). In greater detail, Dyrbye and colleagues conducted a systematic review of peer-reviewed journal articles about depression, anxiety, burnout, and related mental health problems among medical students in Canada and the United States. When comparing their findings of overall psychological distress with the general population and age-

matched peers, medical students self-reported consistently higher instances of distress, particularly among female medical students. In another study, Toews and colleagues surveyed medical students, residents, and graduate students at four different schools of medicine taken from three provinces in Canada. Using three survey instruments of self-reported habits, the authors found significant gender differences related to the nature and degree of stress experienced by the medical students. Specifically, female students generally reported experiencing more overall distress and had a more difficult time coping than their male classmates (see also Andreev, Nesterenko, Vasil'ev, Podkopaeva, & Robenkova, 2006; Dahlin, Joneborg, & Runeson, 2005; Dyrbye et al., 2006; Tyssen, Dolatowski, Røvik, Thorkildsen, Ekeberg, Hem et al., 2007). However, researchers ought to remain cautious when seeking to generalize these gender differences due to the low male response rates reported in many studies in the medical education literature.

Medical Students' Appraisal of Stress

Medical training consists of high stakes examinations and added pressure to perform academically and clinically, therefore understanding medical students' descriptions of appraising stressful life events may help future students with preventing negative consequences by developing coping strategies (Hojat, Gonnella, Erdmann, & Vogel, 2003). Other than shared social context, there is no clear generalization across individuals or groups as to what constitutes coping strategies. Although medical students do share a similar socialization given their environment, they are individuals who come from previous backgrounds in which their hopes, fears, and anticipations were formed. Hence, the social constructivist nature of the study offers an opportunity to learn from the lived experiences of 12 third-year medical students about the

complexities associated with gaining a better understanding of challenges such as balancing academic pressures and clinical responsibilities, and developing coping strategies in response.

Medical Students' Coping Responses

There is convincing evidence that undergraduate medical students are required to cope with various stresses throughout their student experience. In fact, Kjeldstadli, Tyssen, Finset, Hem, Gude, Gronvold and colleagues (2006) concluded “that the medical students’ well-being deteriorates during medical school” (p. 53). The harmful effects of stress are well documented in studies wherein researchers reported on a lack of coping responses. When students lack coping strategies to counter the demands of some challenges, the outcomes which have been heavily reported include depression, anxiety, burnout, substance abuse, and mal-adjustment (Dennis, 1998; Dyrbye et al., 2006; Dyrbye et al., 2010; Moffat, McConnachie, Ross, & Morrison, 2004; Smith, Peterson, Degenhardt, & Johnson, 2007). Medical students undoubtedly experience various challenges throughout undergraduate medical education and as such they must manage within the significant changes that are forced upon them. Researchers have described coping responses such as mindfulness (Hutchinson & Dobkin, 2009; Karpowicz, Harazduk, & Haramati, 2009; Rosenzweig, Reibel, Greeson, Brainard, & Hojat, 2003), self-awareness (Finkelstein, Brownstein, Scott, & Lan, 2007), social support (Rospenda, Halpert, & Richman, 1994), and resilience (Dunn, Iglewicz, & Moutier, 2008; Haglund, aan het Rot, Cooper, Nestadt, Muller, Southwick et al., 2009). However, only a few researchers have described how medical students respond to the challenges experienced and the changes students go through during clinical clerkship, particularly with those seeking to adapt to being relocated for a period of eight months. This is due partly to the fact that very few medical schools in Canada and internationally have longitudinal integrated clerkships in their undergraduate programs. Even fewer medical schools

require all of their students to undertake clinical clerkship in rural and northern communities. Therefore, this study will provide an understanding of how third-year medical students at the Northern Ontario School of Medicine describe the challenges they have to manage and, in response, the strategies they employed to adapt to their clerkship.

Evidence about the Transition to Clinical Clerkship: Processes of Adaptation

Important considerations have been taken to advance our understanding of critical transition periods throughout medical education (Haglund, aan het Rot, Cooper, Nestadt, Muller, Southwick et al., 2009; Radcliffe & Lester, 2003; Torok, Torre, & Elnicki, 2009). By means of semi-structured interviews with fifth-year medical students in the UK (the University of Birmingham's program comprises years one through five), Radcliffe and Lester (2003) explored the students' retrospective views about perceived stress throughout their undergraduate medical training. Using grounded theory and framework analysis, Radcliffe and Lester found that the third-year clerkship consisted of several key transitions. Specifically, the most prominent transitions included going from classroom learners to clinical clerks, the added pressure of professional socialization, and the lack of guidance from the medical school administrators and tutors. From the outset of entering clerkship, the students experienced significant demands and challenges associated with adjusting to the clinical environment such as day-to-day patient management. Third-year clinical encounters also have the potential to be traumatic for medical students dealing with death for the first time (Haglund et al., 2009). However, in their study, Haglund and colleagues found that students who reported more traumatic events during the third-year of medical school reported more personal growth by year's end. They concluded that the students became resilient to traumatic events and developed coping strategies in response to these events, regardless of the impact the events had on them during the year. Other medical education

researchers have characterized personal growth in relation to such concepts as emotional hardening (e.g., Newton, Barber, Clardy, Cleveland, & O'Sullivan, 2008) and erosion of empathy (e.g., Feudtner, Christakis & Christakis, 1994; Hojat, Vergare, Maxwell, Brainard, Herrine, Isenberg et al., 2009). It is by understanding the students' responses to traumatic events that researchers can elucidate the adaptation processes the students develop throughout their clinical clerkship.

Within the challenging and exciting transitions of third-year clinical clerkship are the medical students' first experiences of assuming many of the responsibilities associated with being a physician (Beagan, 1998; Bynum & Sheets, 1985; Wendland & Bandawe, 2007). Professional socialization of becoming a physician during the clinical clerkship is particularly demanding as the students seek to belong to the medical profession (Haglund et al., 2009; Radcliffe & Lester, 2003). The concept of 'blending in' to the medical profession has been explored in relation to international medical graduates' inaugural entry into Canada and their experiences leading to the development of adaptation processes (Wong & Lohfeld, 2008). There are inherent aspects of medical students' socialization (personal, public, and professional) that intersect with the processes they experience to adapt to the medical profession (Beagan, 1998; Hojat, Gonnella, Erdmann, & Vogel, 2003; Wendland & Bandawe, 2007). Students' views about professional socialization and how they describe the adaptation processes they develop in relation to their environment in order to adapt to the medical profession are relevant to the present study. Specifically, the purpose of this study is to gain an understanding of the changes and transitions described by third-year students throughout their clinical clerkship.

The clinical clerkship period requires students to maintain a great deal of focus. There is an expectation that students gain applied knowledge and practical competence as they transition

from student to clerk and develop decision-making skills during supervised clinical encounters with patients (Prince, van de Wiel, Scherpbier, van der Vleuten, & Boshuizen, 2000; Prince, Boshuizen, van der Vleuten, & Scherpbier, 2005). Thus, it is not surprising that personal growth has been associated with the third-year of medical school in relation to such concepts as emotional hardening (e.g., Newton, Barber, Clardy, Cleveland & O'Sullivan, 2008) and erosion of empathy (e.g., Feudtner, Christakis, & Christakis, 1994; Hojat, Vergare, Maxwell, Brainard, Herrine, Isenberg et al., 2009; Neumann, Edelhäuser, Tauschel, Fischer, Wirtz, Woopen et al., 2011). Along the way, the responses to these experiences are also manifestations of adaptation processes. Another example of a response is adaptive expertise, a process by which a medical student develops competencies, proficiency with procedural skills, and mastery of applied knowledge (Mylopoulos & Regehr, 2009; Mylopoulos & Woods, 2009). Within the context of the clinical clerkship, adaptive expertise exemplifies the notion that medical students have successfully consolidated what was learned during the clerkship, for example day-to-day time management, clinical knowledge, and interpersonal skills (Small, Soriano, Chietero, Quintana, Parkas & Koestler, 2008).

Contentious Issues

Researchers have demonstrated how the experiences of medical students throughout training are entrenched in the hidden curriculum, and can have a profound impact on medical student adaptation. In their sociological study of the hidden curriculum in medical education, Haas and Shaffir (1987) described in their monograph, *'Becoming doctors: The adoption of a cloak of competence'*, the student experience in the three-year problem-based undergraduate medical education program at McMaster University in Ontario, Canada, beginning with field notes during admissions and ending with the completion of their licensing examinations. Their

interest was solely related to providing an understanding of students' views of the professionalization process throughout their undergraduate studies, irrespective of the learning context and knowledge acquisition. The authors conducted field research using participant observation as well as informal individual and group interviews to observe and participate with 80 medical students (47 males and 33 females) from 1974-1977 in a range of educational experiences such as lectures, clinical skills sessions, and clerkships. They observed that the professional identity formation for some medical students "involves, above all, the adoption of a symbolic-ideological cloak of competence, suited to convince [particular] audiences of the legitimacy of the professed claim of competence" (Haas & Shaffir, 1987, p. 110). Similarly, the present study seeks to provide an understanding of the student experience at a medical school with a non-traditional learning model. However, this study hones in on the student experience during one of the NOSM's defining educational experiences in its distributed community-engaged learning, the Comprehensive Community Clerkship (CCC).

Another study examining the student experience is Worley's (2003) doctoral investigation of the changes in academic performance of 32 medical students at Flinders University in South Australia. The rationale for the study was to research the academic impact of the Parallel Rural Community Curriculum (PRCC), a longitudinal integrated clerkship (LIC) in the context of rural family practice in Australia which was developed at Flinders. Employing a quasi-experimental design, one of the purposes for his study was to compare the changes in academic performance between six students in the LIC and their 16 peers in an urban tertiary hospital setting, and ten others in a northern territory utilizing the same curriculum structure to those in the tertiary hospital setting. Next, using a case study approach, the other purpose of the study was to examine what process factors, such as the teaching and learning context and the learning process, were

important to explain the changes in academic performance data. Based on Glaser and Strauss' (1967) grounded theory, Worley described how the students learned in both the LIC and tertiary hospital settings. He concluded that students undertaking the LIC improved their academic performance and reported increased clinical exposure to common clinical conditions and procedures compared to their peers in the tertiary hospital setting. As mentioned, the PRCC at Flinders University largely influenced the development of the NOSM's CCC in terms of exposing students to rural family practice through longitudinal and community-based learning.

Much more is known about traditional clinical clerkship model of block rotations. LICs are relatively new and few medical schools nationally and internationally have incorporated them in the curriculum. Even fewer of the schools with LICs require all of the students to undertake them at the same time such as the case at the NOSM. Researchers who have examined the student experience during longitudinal integrated clerkships have focused on explaining how workforce shortages are being addressed whilst maintaining academic standards set by accrediting and governing bodies. Researchers continue to demonstrate positive changes in student academic performance compared to students in non-LICs. Although the aforementioned must continue to be researched, the focus has been on the educational outcomes and little is known about the sociological experience from the students' vantage (Walters, Greenhill, Richards, Ward, Campbell, Ash et al., 2012). The present study centralizes on the student experience of an LIC, specifically the CCC at the NOSM.

The NOSM's CCC is a context which remains relatively uncharted from a research perspective, particularly from the vantage of the students. As mentioned, seven students from the inaugural class who did their CCC in 2007-2008 participated in an external evaluation (Couper, Worley, & Strasser, 2011). One of the key recommendations that emerged from the evaluation

report referred to the need to explore the social issues in relation to the student experience, including supportive behaviours, physical relocation, and contextual challenges. In terms of the present study, the students recruited to participate were part of the fifth cohort of students to undertake the clinical clerkship.

Informed by a social constructivist research paradigm, I explored the student experience throughout CCC from their vantage. Qualitative interviews pre-, during, and post-clerkship elicited anticipations, realities as experienced *in situ*, and the consolidation of their experiences. When taking into account the uniqueness of the NOSM and the geographical vastness and regional aspects of Northern Ontario, methodological suitability was of utmost importance. As a result, I employed the use of mobile methods (see Sheller & Urry, 2006), specifically guided walks (see (Ross, Renold, Holland, & Hillman, 2009), to gain the participants' perspective in the context where they were experiencing them.

Integral to the continuous improvement of the CCC, and LICs more generally, is the need for an exploration of medical student adaptation from the students' perspective. The present study is the first at the Northern Ontario School of Medicine to provide an understanding of how medical students describe developing processes of adaptation while undertaking the CCC in rural and northern communities in Northern Ontario, Canada. The findings provide a snapshot of what students experience during the CCC in relation to the challenges they face, the transitions and changes they undergo, and how they develop processes of adaptation in response. Educators, faculty, and medical school administrators stand to benefit from an increased awareness of student-related concerns.

Research Questions

Through the following research questions, I explored how 12 undergraduate medical students at the Northern Ontario School of Medicine describe their experience developing processes of adaptation during their clinical clerkship in a community in Northern Ontario:

- a. How do third-year medical students at the NOSM describe challenges and/or stressors they manage during the clerkship?**
- b. How do third-year medical students at the NOSM describe their experience employing strategies in response to the demands as encountered in their placement and living context?**
- c. How do third-year medical students at the NOSM describe their experience developing processes of adaptation post-clerkship?**

CHAPTER THREE

METHODOLOGY

The goal of this study is focused on understanding the medical students' experiences of developing adaptation processes throughout their clinical clerkship. Through multiple meanings, I explored the lived experiences of 12 third-year NOSM students undertaking community placements in communities in Northern Ontario, Canada. The purpose of this chapter is to describe the social constructivist research paradigm and the research methods. First, I will begin by providing an overview of the theoretical underpinnings of social constructivism and the basic paradigmatic belief systems espoused by Guba and Lincoln (Guba & Lincoln, 1994; 2004; Lincoln & Guba, 2000). Next, I will demarcate the ontological, epistemological, and methodological assumptions, as well as the canonical relevance to medical education research. I will conclude the chapter with a description of the research methods I employed throughout the study.

Social Constructivist Research Paradigm

No inquirer ought to go about the practical conduct of inquiry without being clear about just what paradigm informs and guides their philosophical worldview (Guba & Lincoln, 1994; Kuhn, 1970). The research paradigm incorporated by a researcher has implications for the study including the perspective on thesis focus, data collection, fieldwork, and analysis and interpretation of the findings. The philosophical roots of the social constructivist research paradigm and its use in qualitative research within the social sciences have largely been attributed to Guba and Lincoln (1994; 2000; 2004). In the social constructivist paradigm, the researcher is not the singular source of interpretive meaning (Guba & Lincoln, 1994; 2004; Lincoln & Guba,

2000). Rather, the researcher's voice is considered that of the passionate participant (Lincoln, 1991) who interacts with the participants to co-construct the participants' lived experiences into contextually relevant interpretations (Charmaz, 2000).

Social constructivism represents a philosophy rooted in the concepts of learning and knowledge (Fine, 1996). Vygotsky (1978) is one of the major contributors to theorizing modern-day social constructivism as a learning philosophy about knowledge acquisition. According to Vygotsky, social constructivism refers to an individual's perceived reality of knowledge within a social context. Learning is a social process (Adams, 2006) and the "learning environment is critical in terms of how education and service delivery are balanced and that very environment may well influence both attitudes to career choice and the manners by which [medical students] develop in ways we do not yet understand" (Snadden, 2006, p. 98). It is the position of social constructivists that knowledge is influenced by social and cultural realities and the acquisition of knowledge is largely influenced by the environments in which individuals are surrounded (Fine, 1996). Therefore, based on individuals' past experiences, personal worldviews, and professional background, they synthesize information that is being presented to them and construct their own meaning to make sense of the world.

One prominent social constructivist perspective in contemporary medical education is that of situated learning (Lave & Wenger, 1991). Within situated learning it is posited that "learning [occurs] in situ" (p. 31) and that it is inadvertently situated within social and cultural settings (Lave & Wenger, 1991), signifying that learning is influenced by social interactions converging with shared contextual values such as those within a specific 'place'. For example, NOSM students are relocated to a community for eight months where they must negotiate multiple simultaneous identities such as professional, student, and community member, whilst develop

adaptation processes throughout their clerkship. There are also certain background features such as marital status, educational background, work experience, and training in one's hometown, which might vary between students, thereby influencing how they will describe their experience developing processes of adaptation during their clerkship.

Ontological, Epistemological, and Methodological Assumptions

The social constructivist research paradigm “assumes a relativist ontology (there are multiple realities), a subjectivist epistemology (knower and respondent co-create understandings), and a naturalistic (in the natural world) set of methodological procedures” (Denzin & Lincoln, 2005, p. 24). Informed by this research paradigm, I explored the students' lived experiences during one entire academic year (2011-2012) in relation to the context of their placement in one of 12 communities in Northern Ontario. My decision to employ social constructivism was to discover the ways in which the students constructed their realities as they experienced their clerkship with others in placement communities, such as physicians and other health care professionals, patients, and learners. I subscribe to the social constructivist worldview and see the world through this lens. I believe that meanings vary between individuals and how they make sense of the world depends on the contexts in which they live, learn, and work. As a result, the social constructivist research paradigm provided the basis for the formulation of the research questions and the methodology I employed.

Interwoven within the social constructivist paradigm are (a) a *relativist ontology* (there are multiple realities), (b) a *subjectivist epistemology* (e.g., researcher and participants co-create understandings), and (c) a *hermeneutic and dialectic methodology* (e.g., the lived experience from the participant's perspective) (Guba & Lincoln, 1994; 2004; Lincoln & Guba, 2000). Each of these assumptions will be discussed in relation to the study.

Relativist ontology. Relativism is the assumption that differentiates social constructivism from other paradigms in that it postulates multiple individual realities are influenced by environment rather than an objective reality (Guba, 1992; Guba & Lincoln, 1998; Mills, Bonner, & Francis, 2006). Social constructivists accept that although elements are often shared among individuals, their realities are socially, culturally, and locally based (Moles, Renold, Ivinson, & Martsin, 2011). The construction of knowledge is relative to time and place, meaning that multiple individual realities can coexist based on the factors that differentiate them by context such as different physical locations and the methods within which the knowledge was generated (Charmaz, 2000; 2005).

Subjectivist epistemology. When utilizing a subjectivist epistemology, one assumes knowledge as a co-construction amongst researcher and participant(s) (Charmaz, 2000; 2005). The interactive relationship between the researcher and participants is organic throughout the research process with the intent to empower and engage the participants in the inquiry. Embedded in the social constructivist paradigm are the assumptions that we as researchers bring to the research situation. Based on my career and educational experiences, I have a number of disclosures and research assumptions. As an individual who lives in Northern Ontario, I have experienced firsthand the workforce shortages of health human resources when my family and I did not have a family physician for almost four years. In addition, the Northern Ontario School of Medicine (NOSM) was established in my hometown, Sudbury, and several friends and colleagues have since become practising physicians after graduating from the NOSM's undergraduate and postgraduate programs. My interest in learning more about the students' views of the Comprehensive Community Clerkship (CCC) was largely influenced by these factors.

Specifically, the CCC was described to me as the most interesting and remarkable year of the NOSM's undergraduate MD Program in terms personal and professional development.

As I highlighted earlier (see Haglund, aan het Rot, Cooper, Nestadt, Muller, Southwick et al., 2009; Radcliffe & Lester, 2003; Treadway & Chatterjee, 2011), many researchers have noted the most influential transitional stage in undergraduate medical education may occur during the third-year clinical clerkship. As a scholar interested in the sociology of medical education, my research interest is to explore the social worlds created by the students throughout their clinical clerkship from their vantage points. Since I began employment as a Curriculum Instructional Designer at the Northern Ontario School of Medicine (NOSM) in January 2009, I was interested in exploring the lived experiences of medical students undertaking the Comprehensive Community Clerkship because it is one of the defining aspects of the NOSM's Undergraduate MD Program. I am well informed of the NOSM's distributed community-engaged learning model, which provides me with a clear vantage point as an 'insider' (Bishop, 2005; Tinker & Armstrong, 2008) or having 'emic views' (Guba & Lincoln, 1994). Even on the periphery of the students with my employment at the NOSM, I do enter the research process with a very informed frame of reference. That being said, I am self-aware that I have not personally experienced what it is like to undertake an undergraduate medical degree. Therefore, I have taken an 'outsider' or 'etic' view to observe and express my voice as a researcher within an interpretive framework (Bishop, 2005; Fossey, Harvey, McDermott, & Davidson, 2002; Guba & Lincoln, 1994; Tinker & Armstrong, 2008). I will illustrate the concepts of emic and etic (insider and outsider) by using reflexive journaling as a tool to reflect upon the research methods and track mine and the participants' involvement throughout the research process.

Hermeneutic and dialectic methodology. Researchers who employ a hermeneutic and dialectic methodology assume that the construction of the lived experience should only be elicited through active participation amongst researcher and participants (Charmaz, 2005). The researcher and participants are social actors who find meaning in the perspectives being studied. Its purpose is to “to learn something of the participants’ world as they define it for themselves [and] to describe it as it exists for those who live within it” (Smith III & Noblit, 1989, p. 102). The methodological emphasis on interpretation and situational context is grounded in narrative studies through which participants’ narratives as data provide a better understanding of the lived experience (Charmaz, 2005; Guba, 1992). In keeping with this methodological tradition, I maintained reflexivity throughout the research process and reflected on topics and concepts as they emerged. Through reflexive journaling, I kept track of mine and the participants’ constructed interpretations and, as a result, the co-constructed interpretations and the meanings given to them. I will describe how I maintained reflexivity throughout the methods employed in my research, as well as in a section devoted to researcher reflexivity in Chapter Four.

Procedures

In the previous section, I described the philosophical worldview I espoused and the assumptions that informed my approaches throughout the research process. The choice of methods ought to “fit to the axiomatic structure of the paradigm selected to guide the inquiry” (Guba, 1992, p. 18). Kuhn (1970) concluded “that as long as the tools a paradigm supplies continue to prove capable of solving the problems it defines, science moves fastest and penetrates most deeply through confident employment of those tools” (p. 76). The purpose of the next section is to describe the qualitative research methods as informed by a social constructivist paradigm. There are eight sections: (a) research ethics, (b) key informants, (c) NOSM Student

Society, (d) participant recruitment, (e) participants, (f) development of interview topics, (g) piloting the conversational interview, and (h) data collection. See Appendix C for a diagram of the methodology.

Research Ethics

The research project required ethical approval by both Laurentian University and Lakehead University Research Ethics Boards. Ethical approval was first received from Lakehead University in January 2011 (see Appendix D), and Laurentian University in February 2011 (see Appendix E). Research ethics approvals were renewed at both universities in 2012 and 2013.

Key Informants

Two recent graduates of the NOSM's MD Program, with whom I had previously established rapport through educational and professional activities, participated as key informants throughout the study. Through numerous email communications and one on one face-to-face discussions beginning in Spring 2011, contributions by the key informants included (a) help with the conceptualization of the project, (b) suggesting that I reach out to the NOSM Student Society early on to engage them in the research process, (c) suggesting participant recruitment strategies and other methodological decisions such as avoiding surveys, (d) reviewing interview questions and topics, and (e) piloting the interview process and sharing their lived experiences of the NOSM clerkship. When the key informants described their clerkship experience, they agreed the best time to describe how they felt about clerkship was following their first assessment around mid-November, which is approximately three months into the clerkship. In addition, the informants emphasized how imperative it was that I visit the participants in the community setting during their clerkship to interview them. Their contributions to these steps in the research process will be described throughout the research process whenever their input was sought.

NOSM Student Society

Upon suggestion by the key informants, I communicated with the President of the NOSM Student Society in Spring 2011 to seek endorsement and support for conducting the study. I sent him an overview of the study ahead of the meeting to better inform the focus of the conversation. At the meeting, we shared ideas on the importance of providing clear information regarding anonymity and confidentiality safeguards for the participants, as well as recruitment strategies to engage students to participate. One of the recruitment strategies suggested was similar to what the key informants shared, and that was to present my project to the students as an oral presentation during the upcoming orientation week for incoming third-year students. He also agreed to provide endorsement of the project to the students at the presentation. Throughout the meeting, we discussed what components would be best to include in the participant recruitment package. For example, he suggested that I ask the Associate Dean of Undergraduate Medical Education to write a letter of support for the study to include in the package. Since he had just completed the CCC, we discussed provisional questions and topics for inclusion in the interview protocol. He agreed with the key informants, and recommended that going to the communities was an appropriate methodological choice to gain the student experience in context.

Participant Recruitment

Recruitment packages were emailed to all 56 potential participants at the start of their orientation week in early May 2011. The package (Appendix F) included a letter of invitation to participate, copies of the letters of ethical approval from the host universities, an informed consent letter, and a letter of support for the research project from the Associate Dean of Undergraduate Medical Education. One participant shared: “your recruitment package was

actually one of the reasons that I chose to participate. It was so organized that I felt that my contributions would be respected” [MS10-post].

During my oral presentation to the students, the President of the NOSM Student Society provided verbal endorsement as part of the recruitment effort to encourage students to participate in my study. I emphasized the value added of their participation in the study for themselves with opportunities for reflection and the potential impact their contributions would have on helping future students prepare for the CCC, and in shaping the continuous development of the CCC. Furthermore, in consideration of my professional academic position at the NOSM, I stated that I had no involvement in the assessment of student performance or decisions about student progress through the MD Program.

Participant recruitment consisted of Patton’s (2002) purposeful convenience and snowball sampling methods. The goal with Patton’s purposive sampling technique is not to seek representation. According to this sampling strategy, the selection of the participants is first and foremost based on their accessibility to the researcher and, subsequently, for their information-rich contributions to the subject matter. A feature of snowball sampling is the anticipation that initial participants in the study can help channel the researcher to communicating with other potential participants should they feel comfortable doing so. Only participants who agreed to all three stages of data collection were selected for participation.

In the following months after orientation week and leading up to the start of clerkship, I sent four email reminders to the students encouraging their participation. One of the first participants I interviewed suggested sending a follow-up email during the first week of August reminding the students of the purpose of my study and to be more explicit with the confidentiality safeguards. For example, the participant suggested being clearer about the fact there were no

links with student assessment and academic performance. She felt at the time of the interview that some students may still have thought the project was associated with those aspects, but that most had made the distinction. It is important to note that leading up to the start of clerkship, the snowball sampling techniques were especially useful in achieving male representation. For example, another one of the initial participants I interviewed suggested sending an email only to the males in the class letting them know that my study would benefit tremendously from a male perspective.

Male participation in studies involving medical students is particularly relevant given the demographic trends of the medical student population and the low male response rates reported in the medical education literature (e.g. Toews, Lockyer, Dobson, Simpson, Brownell, Brenneis et al., 1997). The male to female ratio of the medical student population at the NOSM has generally been around 70% female. I was initially concerned that no male participants would be recruited and the demographic trends of the class would not be represented. Although the goal for sampling was to match the 30% representation of males in the class, two male participants were recruited. During my discussions with the key informants, one female and one male, both described that gender differences did not influence their clerkship experiences. They expressed that their perceptions were centralized on the fact they were all medical students first. Upon further probing with some participants, particularly when they were discussing the study, they expressed that gender was not a significant factor in their experience. Given the number of males (2) and females (10) in the study, I feel would be inequitable to overgeneralize gender. As a result, I did not examine gender differences and this limitation will be discussed in the Conclusions chapter.

Participants

The entering class of 2009 who underwent the CCC in 2011-12 consisted of 56 students. The demographic trends of this cohort of students indicate that 93% were from Northern Ontario and 7% from rural and remote regions throughout the rest of Canada. In this cohort of students, 5% were self-identified Aboriginal and 20% were self-identified Francophone (Strasser, 2009). I recruited 12 participants to answer the research question: how do NOSM students describe their experience developing processes of adaptation during the Comprehensive Community Clerkship (CCC). Initially, 13 students came forward however one participant opted to withdraw from the study following a personal life event.

Each participant was asked to complete a demographic questionnaire. The structured open-ended questionnaire, which should have taken approximately five to 10 minutes to complete, included general and academic background information and additional information related to student attitudes in relation to living and working in Northern Ontario (see Appendix G). The data collected from the demographic questionnaire served to provide additional information regarding the participants. Table 1 provides further descriptive demographic information:

Table 1*Participant Demographic Information*

Demographic characteristics	Demographic information
Host campus	10 east (Sudbury), 2 west (Thunder Bay)
Participants	12 (21.4% of student group); 10 females, 2 males
Average age	28.4 years (standard deviation: 4.9)
Hometown	11 from Ontario
Background	health sciences (e.g. nursing), medical sciences (e.g. biochemistry), social sciences, arts
Self-identification	Francophone (2), Aboriginal (1)
Perception of CCC community	8 northern, 6 rural, 3 urban, and mix
Marital status	6 married or in a civil arrangement
Children	1 with children

Development of Interview Topics

The development of interview topics was informed in several ways: the relevant literature review, suggestions from the key informants, and discussions with two members of my supervisory committee (Dr. Strasser for his expertise with the subject matter and Dr. Schinke for his methodological expertise with qualitative inquiry). In the quotation below, one of the key informants described his feedback after reviewing the pre-clerkship interview topics.

I think you definitely have a good start there, you are hitting on a lot of important topics that come across in the CCC, being away, support, learning format, relationship building. I understand that you will have that interview 3 times during the CCC, and see how the answers differ over time, if they do, with this social constructive nature of your study, I think your questions may change over time from interview to interview so things may change as these students may be having totally different experience from the one I had, it has been three years almost. A few things that I noticed changed for me during my CCC was the confidence piece, it may be worth exploring. I found that being away and being immersed in medicine changed my confidence level enormously, this may not necessarily be linked to the amount of info being crammed in the brain but from increased exposure to patients. Also, it would be interesting to know if the student you are talking to actually got his/her top pick for CCC spot, you could get biased responses if [he/she] got [the] 5th spot and [they're] now in [community A] when [they] really wanted [community B].

The following excerpt from my field notes is an example of my reflexive journaling immediately after receiving the feedback:

The comment regarding the community was fortunately brought up with the first participant and was incorporated in all subsequent interviews. It is my assumption that the confidence topic will emerge with the students even without asking, however the topic will be included in the guide. As I mentioned at my proposal, and based on other studies, there is the notion of the proverbial 'letdown' that occurs during the first few months of clerkship; where some students perceive not knowing enough, etc. but

then as a result of deliberate practice (multiple supervised clinical encounters) and over a period of time they develop, or begin to develop, adaptive expertise.

As demonstrated above, the use of reflexive journaling was effective to report on my, and the key informants', reactions and reflections of the pilot interviews, particularly regarding how I could refine my interview skills using all of the feedback I received (Barry & O'Callaghan, 2008; Smith & Noblit, 1989). The interview protocol was revised using all of the feedback obtained before ever commencing with the first participant. See Appendix H for the interview protocol.

Piloting the Conversational Interview

Before commencing the interview with the first participant, I conducted pilot interviews with the key informants to enhance my proficiency with conversational interviewing. In addition, feedback was sought from the pilot-participants to determine if sufficient time to share their experiences was provided. This step enhanced authenticity of the interview process with the engagement of contextual experts. The feedback from the key informants included the suggestion to be mindful and prepared for the topics to change due to the few years elapsed since their completion of the CCC. Although the interviews were not audio recorded, the notes taken throughout were reviewed, self-evaluated and evaluated by my supervisor. For example, I received feedback from my supervisor to be cautious about leading the participant's responses. I incorporated this feedback in the interviews that followed.

Data Collection

The key informants suggested that I interview the students before, during, and after the clerkship. Specifically, they expressed the importance of interviewing the students before the clerkship to get a sense of the students' anticipations, at the three-month point of the clerkship since that is when they recalled things turning around for them in terms of the learning curve, and

after the clerkship to get a sense of how the students' consolidated their experiences. They also recommended that I go to visit the students in their clerkship communities at least for the interviews at the three-month point in order to gain their stories in context. As a result, data were collected in three stages beginning in August 2011 and ending in April 2012. Data collection included: (a) pre-clerkship one-on-one interviews and demographic questionnaire, (b) 'guided walks' during the clerkship, meaning participants led me on a walk *in situ* (their clerkship community) while engaged in natural conversation, and (c) post-clerkship one-on-one interviews. In order to allow me to focus on being attentive to what the participants were saying, all of the interviews were audio recorded for subsequent verbatim transcription.

Pre-clerkship Interviews

Based on a positive participation response, and after informed consent had been obtained, I began scheduling the pre-clerkship one-on-one interviews at the start of July 2011, or 1.5 months prior to the start of clerkship. The first interview was conducted during the last week in July. Due to scheduling priorities, the last interview occurred during the third week in September, a few weeks into the clerkship. Interviews ranged from 30 to 65 minutes. Since there were specific topics of interest to me about how the students seek to adapt to their clerkship, there was a semi-structured component to the interview. This aspect comprised of the topics developed in collaboration with the key informants and Drs. Schinke and Strasser. However, I did not intentionally disrupt the flow of the conversation and only engaged the semi-structured component toward the end of the interview or when participants requested conversational topics.

The interviews were guided by the participants and the natural flow of the conversation (Patton, 2002). With the minimal interference from me, the participants were given space to share their experiences freely during the interviews. According to Patton, this type of "interview[ing]

offers maximum flexibility to pursue information in whatever direction appears to be appropriate [for the participant]” (p. 342). The participants had autonomy over the process, what topics were discussed, and more generally, the nature of the project, resulting in the representation of their lived experiences into narratives. In addition, participants were probed throughout each discussion to ensure adequate understanding and detailed recollections of their lived experiences. Patton’s (2002) four types of conversational probes were used to gain thick description and to understand the students’ experiences from other pathways: (a) detail probes (e.g., when did that happen?), (b) elaboration probes (e.g., can you tell me more about dealing with that?), (c) clarification probes (e.g., you mentioned that your peer was helpful, what do you mean by that?), and (d) contrast probes (e.g., how do you think this experience compares to your peer’s experience in another community?).

With face-to-face interviewing as the preferred method for data collection, I maintained that interviewing the participants in their own environments would only serve to enhance the opportunity for them to think critically and discuss the essence of their experiences. In addition, due to participants’ needs and the fact they were dispersed across the vast region of Northern Ontario, some interviews were conducted over Skype (a no-cost online videoconferencing tool) or by telephone. Although there may be possible limitations with conducting interviews via Skype and the telephone, the technology can at least mitigate some of the nuances of telephone interviewing, such as facial and bodily expressions, which may be important indications for further documentation such as informing my field notes in my reflexive journal.

Given the social constructive nature for the study, the flow of the conversation was largely determined by whatever topics the participants wanted to discuss. The following

participant commented on adding specificity in my line of questioning to ensure I elicited experiences relevant to my research questions.

I guess my only feedback I mean it's a huge topic right it's a broad topic and you're covering the basis on a lot of broad topics so I just have a lot and I apologize for that if I sort of lead you down different rabbit holes. So maybe more directed or specific questions starting with being open, I don't want to not give you the information you want so there if there questions that you are sort of hoping to answer in the course of this thesis don't hesitate to be more specific on some of those questions. [MS5-pre]

Another participant expressed what she felt was particularly awkward with some of the wording suggesting the term changes rather than transitions.

The only thing that I think was weird is to hear questions phrased like in a really formal way you know what I mean like a catch sort of like using terms that I don't necessarily think of but I think that's just the way it is. I don't know, can I see the questions? I don't think, ok transitions, yeah I don't know maybe just that word I don't know, changes, I like changes better because I don't, yeah it makes feel stupid to talk about transitions in my life [laughter]. [MS8-pre]

The following participant described her appreciation for the open-ended nature of the interviews. She also highlighted how the flow of the conversation during the interviews was helped by our mutual understanding of the CCC.

I do like the open-ended format because it really gives us the freedom to expand in whatever direction is relevant to the student being interviewed. So with the format of the questions I think it will helpful for us just having that very open-ended nature I think that you'll be collecting a lot of interesting anecdotal data along the way keeping it the way it

is for now. I think the questions the way they're set up they sort of rely on both of us having an understanding of the CCC which I would hope at this point we both do, but if there are some students who haven't really looked into or been self-reflective about the challenges that they will be anticipating then it might be a little bit harder for them to answer. I try to be reflective in my learning so I keep notes I keep journals, and I think that helped me to get through the questions but if you don't have a self-reflective person it might take them a while to think of a few challenges. [MS10-pre]

Another participant shared her view on the reflective nature of the interview and how some of the topics triggered experiences she had not considered to that point. These important suggestions were integrated in along the way in order to maintain the organic nature of each interview.

I thought it was a great way to have a discussion rather than just answer straightforward questions. You made me think of things I hadn't even thought of before. No I thought you had a very good way of approaching this and I thought it was good. [MS11-pre]

The following is an excerpt from my field notes describing how I managed and consolidated the topics that emerged during interviews:

Each participant expressed very positive feedback regarding the nature of the study, as well as the type and style of questioning. I am tracking the dynamic nature of the interview guide based on participant feedback. For example, one topic which has emerged is the site selection process (essentially the algorithm used to match the students to their clerkship community). There are differing views (positive, negative, neutral), which is very interesting depending on various aspects in their lives (e.g., family, proximity from home, financial burden, etc.). Another topic is the type of

outreach some of the communities have expressed in preparation of the students' arrival.

It was important to track the comments and feedback received throughout the research process. As a result of maintaining field notes, I was able to make necessary modifications to the interview protocol in an iterative and contextually-informed fashion. For example, I consolidated participant's [MS8] reaction regarding using the term 'transitions' as opposed to 'changes' students go through. Specifically, I integrated this suggestion by including both terms in subsequent interviews when discussing the topic.

Guided Walks during the Clerkship

Sheller and Urry (2006) challenged the ways in which social sciences researchers, particularly those employing qualitative methods, have been slow to adopt ways of exploring the fast-paced physical movement of individuals resulting from, for example, enhanced technologies and increased displacement (see also Clark & Emmel, 2010). Sheller and Urry's 'mobilities paradigm' extends social sciences research beyond spatially fixed environments such as a room-based setting (e.g. boardroom). Sheller and Urry postulated the environment where the phenomenon is taking place ought to be embraced as part of the research process, "maintaining a moving presence with others holds the potential for many different convergences or divergences of physical presences" (p. 214). Moving stories, such as the guided walk, place participants centrally within the research process and facilitate meaningful representations of their everyday lives within the context of the realities they are encountering as they were happening (Ross, Renold, Holland, & Hillman, 2009).

I incorporated the appropriately termed 'guided walks' in order to harness the emplaced and situated understandings from participants located in different communities. The guided walk

is an innovative qualitative method used to explore participants' everyday lives and elicit insightful understandings within context-specific interactions (Ross, Renold, Holland, & Hillman, 2009). The selection of the guided walks was chosen so that I might better understand the participants' lived experiences through placing their stories *in situ* (Clark & Emmel, 2010; Moles, Renold, Ivinson, & Martsin, 2011). Through the essence of this method, each participant led me through a 'guided walk' through the locales of significance to them based on their choice of routes taken. The purpose of the guided walk was to empower each participant to demonstrate their lived realities of clinical clerkship rather than simply talk about them over the phone. This method embodied the interview process and created the space for free-flowing conversation relevant to the details each participant wished to share, in whichever physical direction they wished to take during the walk. The participants determined the length of each walk, which ranged between 45 and 90 minutes. In order to facilitate note-taking and the verbatim transcription of the interviews, the guided walks were audio recorded. I took some pictures of the landscape for physical reminders of some of the communities I had never visited before.

Methodological relevance. Prince, van de Wiel, Scherpbier, van der Vleuten, and Boshuizen (2000) reported on the upheaval at the beginning of the clerkship, "the time and energy students have to expend in adapting to their new environment [...] may explain the crisis in students' learning progress at the start of clerkships that is reported in the literature" (p. 14). In addition, Prince, Boshuizen, van der Vleuten, and Scherpbier (2005) reported that by the third month most students are adapting to different learning strategies, gaining confidence, and starting to develop mastery. As mentioned, the key informants (recent NOSM graduates) suggested that the month of November after the first assessment was as an appropriate time to gain the story in context. This feedback legitimized my decision to conduct the interviews at this time. They also

recommended going to see the students at their communities to have the students describe their lived experiences as encountered in their surroundings. Beginning in mid-October, ‘guided walks’ were scheduled following mid-November assessments and were conducted outside of students’ clinical hours to prevent interference with patient-centred care and learning opportunities. I had some angst about whether the participants would be on board with the methodology, a concern expressed in Clark and Emmel (2010) and Smith and Noblit (1989). Specifically, I was concerned the participants would become apathetic about it once they got deeply involved with their clerkship. However, all of the participants described various reasons why they felt it was an appropriate research approach. My field notes are embedded in the descriptions of the participants' narratives.

I interviewed the following participant at the hospital and the interview was completed in the learning commons, a space specifically for students to participate in videoconferencing, take a break, or study. She shared how the methodology made it easier for her to participate in the study.

The fact that you could come here means that it doesn’t take away from family time, it doesn’t take away from anything. I can spend an hour, easily no problem. So you’ve made it easy to participate. [MS2-during]

In the quotation below, one sees the uniqueness of the guided walk method given this participant shared the idea with her sister.

I thought it was really nice, I think it must be exhausting and expensive for you but it’s really a neat concept. I remember talking to my sister and I said “oh this guy going to come” she’s like “what a neat idea” to come and see what it’s like. I mean obviously you

could become a clerk and do that research but trust me you probably don't want to [laughs]. Maybe one day. [MS3-during]

I met the next participant at the hospital. He toured me around the hospital and the interview was conducted in the learning commons. He described what many of the participants felt - how the guided walks method afforded them the opportunity to show their everyday realities rather than describe these experiences as disembodied words.

It's nice to meet you face-to-face obviously I think it's good for you to come here and see, for you to be able to compare all the different sites. I mean that's got to be quite an experience too. It's asking a lot of you to come do the driving to come up but, I mean, if it gives you an extra element of the perspective then I think it's worth it. [MS5-during]

This participant underscored the importance of me going to visit the students in the communities to gain their experiences in the context where they are encountering them. She emphasized on the significance of experiencing the effects of wintery conditions. Coincidentally, I drove through a very nasty freezing rain storm the night before this interview.

I'm glad I got to meet you in person. I think it's nice to have a face to someone who I'm telling my ups and downs about CCC to. I'm impressed that you came in the winter [laughs]. I think you coming and seeing the community and seeing how stressed we look, you know. I'm sure you can tell I look tired; my point is you can tell that I'm still in professional clothes. I was up at 6:00 this morning going to the hospital for things, right like that we're coming in, we've got to rush off because I insist that I've got to get my VAR done this afternoon, and then I'm on call. [Virtual Academic Rounds are academic sessions where students are expected to review key concepts and topics presented in small-group discussions.] Well you also now know how far it is for us to commute home

if we want to go home for a weekend and what the roads are like. Now this is, I mean you got a day that is pretty miserable weather. One day it's going to be sunny, but the day after miserable weather, which is pretty typical for all of our entire winter. So I mean you got a real flavour of what it is to be here with supports in another [community]. [MS9-during]

Many participants shared their views of the relaxed nature of the guided walk and the opportunity to conduct the interview in a preferred atmosphere. For example, one of the participants explained the appropriateness of selecting a comfortable location for the interview.

I'd much rather do any interview in a warm, cozy environment than in a sterile-looking clinical room! I love this place and I love good coffee so. They took us here [during an orientation activity]. They definitely highlighted this place as a good place. And it would take me a long time to find it had I not been shown. I would have found it eventually but I thought okay I'm saving this away for later this is going to be a good study nook. So I thought we [I interviewed two participants at the same location] would take you here because [brewmaster's name] brews a mean cup of coffee and it's a good relaxing place for me. [MS10-during]

The interview with the next participant was scheduled over 1,000 kilometers away from my home location, Sudbury. I flew to the nearest travel hub, rented a car, and stayed at a hotel in the city for one night. Early the next morning, I drove a few hours to the community where the participant was located. I had never been to this part of Northern Ontario let alone this community. I drove to the hotel and prepared for the interview. The participant picked me up at my hotel and drove me around the community for 15 minutes. She described areas of personal interest and aspects related to her CCC experience. Once the drive around the community was completed, we

proceeded to a quaint independent coffee shop. This is where I first enjoyed a latte called a 'London Fog'. Following the interview, the participant drove me back to my hotel where I stayed the night and drove back to the travel hub the following morning to catch my flight back home. She described her perspective regarding the appropriateness and timing of the three interviews, as well as the relevance of visiting the participants in the community to get a sense of place.

I think the value of you coming here is probably better assessed by you. In terms of what you see and looking at the data that you've gathered. No I think it's very appropriate to space the interviews and get a sense throughout the year of the process. I can definitely see it being worthwhile to see the community at least once. To have an idea because they are very different from each other, with the people in [community A] or [community B], you know? And they are over 50,000, whereas I'm in a community with [less than 10,000] *[laughs]*. So it is a really different experience for sure so. I think there's value in that. [MS12-during]

I met the following participant at the clinic where she stated she spent some of her clinical time. She led me for a walk to the downtown and we proceeded to walk through some of the neighbourhoods with scenic views of the surrounding bodies of water. It was a very windy day. She highlighted the relaxed aspects of the guided walk method, as well as the space created for reflection.

I'm really happy with the reflection, or having the opportunity to reflect. I like it very much. I like it a lot. It's easier to think sometimes when you don't have constant eye contact. Works for me, I thought it was a good balance of interview related and personal, you know? I think about that too when we're interviewing patients, you know, you have

to warm them up a little bit [laughs] because you can't just like "Tell me about your thyroid." or whatever. I can't wait to read your study. [MS8-during]

Locales and routes. At the end of each of the guided walk interviews, I recorded the routes taken, and notes about features in the environment being discussed, the approximate location of the route, and other details. Locales and routes included coffeehouses, car ride around community, tours of community hospitals and clinics, walks through neighbourhood and downtown areas. It is important to note that the guided walks were conducted during the months of November and December, and as such, the chosen locales and routes might have been influenced by weather conditions.

The following participant led me through a tour of the hospital during the interview. She described selecting the hospital since it was where she said she spent most of her time on a day-to-day basis.

I like that because it sets the scene so that, like being here, I know what it feels like to be here right? It's also really nice because I have to be here anyway so being here is, this is where I live my life now right? And so I can feel the experiences more when you're in that situation right? So I can kind of feel how life is day-to-day when I'm here. So I would continue with that. I think that's a really good idea. [MS1-during]

For the guided walk with the next participant, I decided that I would experience traveling across Northern Ontario the way many of the students in this cohort had experienced their orientation upon entry to the NOSM (and surely many other times): by bus. After travelling several hours, I checked into the hotel shortly after midnight. The following day, I met the participant in a quaint coffee shop. As described in the narrative below, the participant was eager to give me a tour of the community. First, we walked down a path along the waterfront near the downtown, then

through neighbourhoods to the hospital. Once at the hospital, she led me through the hospital and the students' own living and learning setting located in the hospital.

Am I supposed to show you like places? Is that part of it? Do you want to go for a walk? Can we do that? Can you listen and walk at the, because we should go outside before the sun goes down? Have you been to the waterfront? Okay it's gorgeous, you'll see. And I'll drive you back to your hotel when it's dark. You're not allowed to ask that, but that's okay I'll do it anyway. Well we should do this before the sun goes down because I thought that I was supposed to take you to all these places. So the other thing that I really liked about [community] it's so nice it's so small. It's so nice that you can walk everywhere so although I drove here, I really didn't have to. There's even Christmas music and it's not even snowing. Okay we'll go this way. It's a little different in the winter because it's like forty below but you get the idea. It's a very pretty little community and then it's all built around the waterfront. There's this pretty little park.

[MS3-during]

Additional field notes related to guided walks. The first interview was scheduled on November 18th. I travelled to the community by car. It was my first experience with snow that fall. I stopped on the newly snow covered scenic highway en route to the community to take pictures of the fresh snow covering the large pine trees. After a few hours, I arrived at the community hospital where I was greeted by the participant. She led me through a tour of the hospital, the clinic, and the students' learning spaces (e.g., library, conference room). I met several health care professionals and the Site Administrative Coordinator (SAC). Immediately following the interview, I travelled a few hours by car to interview the next participant located in another community down the highway.

One week later, while traveling on the bus at dusk, it came to a sudden halt. There were two large moose that crossed the road in front of the bus. It was my first sighting of wildlife during my travels. Once I arrived at the next community, I checked into the hotel where I was staying. Fortunately for me, there were two participants in this community and thankfully they both agreed to meet at the hospital on the same day at different times. The first participant led me through a tour of the hospital and the student learning space. I met several health care professionals and the SAC. The next interview followed one hour later. The participant decided that since I was already given a tour that we would conduct the interview in the learning commons. I returned to my hotel and stayed the night.

It has been reported that mobile methods can afford serendipitous and unanticipated opportunities (Clark & Emmel, 2010; Moles & Anderson, 2008; Ross, Renold, Holland & Hillman, 2009; Sheller & Urry, 2006). For example, as I was getting ready to leave one of the communities, I asked the hotel front desk clerk for a taxi. After calling for a taxi, she asked me for what purpose I was in the community. I explained my role at the NOSM and the nature of my doctoral research. She proceeded to thank me for my contributions to the NOSM's social accountability mandate of helping to bring physicians to Northern Ontario communities because she did not have a family physician. In another community, as I was paying for gas at one of the local stations, the attendant saw one of my NOSM business cards in my wallet and recognized it right away. He commented on knowing there were medical students in the community and a need for physicians in his area. This was the second time a member of the community commented on their awareness of the NOSM and recognition of its mandate to help ease the physician shortages in Northern Ontario.

Throughout the two week period, I travelled 6,224 kilometers including over

2,000 by plane, over 3,300 by car, and over 900 by bus!

Post-clerkship Interviews

I began scheduling interviews with each participant in March 2012 to follow their final clerkship assessments in mid-April. The first interview was conducted in mid-April. Due to scheduling priorities, the last interview occurred during the first week in June, a few weeks after clerkship and a few weeks into year four. Interviews ranged between 40 and 75 minutes. The interviews were conducted in a similar fashion as in pre-clerkship with face-to-face interviewing as the preferred method and some over the telephone or Skype due to participants' needs and the geographical vastness of Northern Ontario.

Summary

Within Chapter Three, I explained the research design and methodology of the study in detail. The purpose of providing a detailed account of the research process I followed is so that future researchers could use it as a guide to conduct their research using similar approaches. In Chapter Four, I describe the methodological decisions I made in relation to the encapsulating the tenets of the social constructivist research paradigm in the data analysis and representation of the findings. The stepwise processes for the data analysis and the organization of the findings will be discussed.

CHAPTER FOUR

DATA ANALYSIS

Chapter Four begins with a discussion about the decisions around data analysis, including interpretive rigour and the processes undertaken to enhance it such as providing thick description and contextual relevance. The fidelity of the study involved a “pluralistic approach as a means of legitimizing naturalistic inquiry” (Tobin & Begley, 2004, p. 394). The quality of data was enhanced through processes of (a) reflexivity, (b) audit trails, (c) authenticity, and (d) interpretive rigour (Côté & Turgeon, 2005; Koch & Harrington, 1998; Mays & Pope, 2000; Rolfe, 2006; Tobin & Begley, 2004). Each of these will be discussed. I will conclude this chapter by explaining the stepwise processes for data analysis and co-construction of the participants’ narratives.

Reflexivity

The concept of reflexivity in qualitative research “is an invaluable tool to promote understanding of the phenomenon under study and the researcher’s role” (Jootun, McGhee, & Marland, 2009, p. 42), including the role of prior assumptions and experiences (Mays & Pope, 2000). The goal with qualitative interviewing is to elicit “detailed narratives and stories” (DiCicco-Bloom & Crabtree, 2006, p. 317) and “to create critically empowering texts” (Denzin, 2001, p. 24) together with the participants. Constructivists “take a reflexive stance in modes of knowing and representing studied life” (Charmaz, 2005, p. 509), and self-awareness of one’s perspective is one way of defining reflexivity, which involves self-questioning and reflection through journaling (Barry & O’Callaghan, 2008; Patton, 2002). Koch and Harrington (1998) characterized reflexivity as “ongoing self-critique and self-appraisal” (p. 882).

Throughout data collection, I made an explicit attempt to explore my own embodied concerns and gain awareness of my influence on the data collection (Jootun, McGhee, & Marland, 2009). Through reflexivity, I was able to draw attention to my own personal subjectivity and leading behaviours that may have influenced the flow of the qualitative interviewing process. For that reason, I exercised reflexivity to promote self-awareness throughout the entire study, a practice I believe served to increase the study's rigour.

Reflexive journal. The reflexive journal is a technique used to describe the researcher's experiences from his/her own perspective, reactions to situations and reflections on the research process, and the consolidation of ideas about data collection and the study's interpretive framework (Barry & O'Callaghan, 2008; Smith & Noblit, 1989). I took extensive notes in the form of a reflexive journal throughout the research process to report on the thoughts, feelings, reactions, and reflections related to my subjective experience (Barry & O'Callaghan, 2008; Rolfe, 2006; Smith & Noblit, 1989). I utilized my journal to describe the ethical considerations and challenges associated with safeguarding my role as a doctoral student from my role at the NOSM.

Audit Trails

Audit trails are attempts to legitimize the factual accuracies throughout the research process (Denzin & Lincoln, 2005; Lincoln & Guba, 1986) providing "careful documentation of the conceptual development of the project [...leaving] an adequate amount of evidence that interested parties can reconstruct the process by which the [researcher] reached their conclusions" (Morse, p. 230). Following every interaction with participants, key informants, and supervisory committee members, I gathered their notes, comments, and suggestions and collated them to provide additional perspectives to be incorporated into the overall interpretations of the findings. I relied heavily on extensive field notes and reflexive journal writing. I also documented several

of the other elements throughout the study such as the contributions from the key informants and the NOSM Student Society regarding the conceptualization of the project, participant recruitment strategies, and the development of the interview topic guide. In addition, I journalized my reflections of the routes taken and locales visited during the guided walks were maintained throughout the research process, many excerpts have already been provided to this point.

Authenticity

Authenticity in the social constructivist paradigm pertains to the relativist ontology (Guba, 1992), stressing the situated and social contexts from the different vantage points of those experiencing them (Guba & Lincoln, 1989). In order to add to the authenticity of the data, its collection and analyses were reflexive, iterative, and co-constructed with the participants. Best efforts were made to generate interview transcripts relatively quickly following each interview, which was on average one week. Each interview was transcribed verbatim. I transcribed all of the pre-clerkship interviews. In order to expedite the transcription of the subsequent interviews, I enlisted the services at the Centre for Rural and Northern Health Research (CRaNHR) for the remaining transcriptions. Although the transcribers at CRaNHR were bound by confidentiality agreements, I required the transcribers to also sign a confidentiality agreement.

Transcripts were shared with the participants for their review. One process, called member checking, ensures factual accuracy and legitimacy in the informational statements representing the participants' lived experiences. For the purposes of the study, member checking was intended as a comprehensive strategy to promote error reduction, connections between the participants' accounts of their experiences and the researcher's, and more importantly the participants' inclusiveness into the entire process (Mays & Pope, 2000). As a strategy both to maintain ongoing communication with the participants and engage them in the co-constructed

interpretation of their lived experiences, I sent the participants their interview transcripts. Each participant was asked to engage in the interpretation throughout the study. For example, they were asked: (a) for assistance for the interpretation of at least the initial data, (b) to provide feedback at the half-way point, and (c) to provide feedback in relation to the completed analysis. The participants were also asked to verify the accuracy, of the transcripts and to provide authorial contributions and authentication regarding the data's representation of their lived experiences. Suggestions and feedback from the participants were always welcome. Reactions to the analyses were incorporated into the interpretation.

Interpretive Rigour

It is through rigorous data collection and data analysis that a rich description of the student experience of clinical clerkship has provided me with relevant information in relation to the current study's research questions. Peer reviews of the findings were a great source of insight and support for me throughout the research process. According to Mays and Pope (2000), peer reviews "ensure that the research design explicitly incorporates a wide range of different perspectives" (p. 51). I undertook peer reviews to strengthen the iterative nature of the interpretive process, as well as to underscore the relevance of the overall interpretation of the participants' lived experiences and the presentation of the results. This stage in the methodology was accomplished through ongoing consultation with (a) members of my supervisory committee and (b) study participants.

The members of my supervisory committee provided me with advice throughout data collection and analyses. For example, I had monthly meetings with Dr. Schinke, my dissertation supervisor, which elucidated meaningful and significant deliberations regarding the methodology and interpretation of the findings. I also had excellent discussions with Dr. Maar, a member of

my supervisory committee, regarding the inductive thematic analysis and the use of *in vivo* codes for the sub-themes. Reactions to the feedback and insight received were incorporated into the interpretation.

Another peer review strategy undertaken included the consultation with one of the participants who identified during the first interview her interest with sharing her views regarding the interpretation of the findings. This stage in the interpretive process was in addition to the ongoing consultation with the participants described in the previous sections and occurred following the completion of data collection. During two face-to-face meetings, I provided short presentations of the anonymized findings and co-constructed interpretations and elicited her reactions and comments. With her consent, her comments and suggestions were integrated to provide an additional perspective in relation to the overall interpretations and presentation of the findings.

Data Analysis

There is significant value in employing a narrative analysis to better appreciate the participants' stories (Haidet, Hatem, Fecile, Stein, Haley, Kimmel et al., 2008; Howell & Coates, 1997; Mensinga, 2009). Narratives convey stories about journeys through an in-depth understanding of the participants' lived experiences. Within a narrative framework, the participants tell the stories that are salient to them. Fossey, Harvey, McDermott, and Davidson (2002) noted that the "principle aim of qualitative research is to privilege participants' perspectives [...] in the analysis and interpretation of their responses" (p. 729). Utilizing a social constructivist narrative research approach (Sparkes & Smith, 2008), the narratives were co-developed with the participants to describe their lived experiences. Charmaz (2000, 2005) suggested that using a social constructivist research paradigm necessitates that the perspectives of

both the researcher and the participants be articulated in the data analysis. Specifically, I took notes within the interview transcripts and added excerpts from the other data sources to frame the narratives within the several elements, incorporating my voice along with the participants’.

Inductive thematic analysis. Each interview was labelled using a participant-based method (i.e., MS1, MS2, etc.) in order to ensure principles of confidentiality and anonymity. In order to organize the data into an anonymized narrative framework, the participant labels also include either pre, during, or post (i.e., MS1-pre, MS6-during, MS2-post) to identify the participant and the time when the interview was completed. The analysis consisted of reviewing each transcript for accuracy and to familiarize myself further with the data (Boyatzis, 1998; Charmaz, 2000; Crabtree & Miller, 1999). During this step, I engaged in preliminary open coding of the narratives by making notes of the meanings in the margins. Based on the premise of co-constructing knowledge of the student experience of adaptation, the participants were encouraged to authenticate the analyses of the narratives representing their lived experiences. Therefore, revisions to the coding system were ongoing; meaning feedback from earlier interviews and common thematic elements identified by the participants contributed to the iterative analysis of the data (Boyatzis, 1998; Charmaz, 2000; Crabtree & Miller, 1999). The data-driven themes and sub-themes were subsequently compared and contrasted across participants until similarities and differences were developed into a representative conceptualization. The meanings and definitions of the themes and sub-themes and the selections of the narratives to represent them were inductively and reflexively developed along with the participants. The sub-themes were derived using *in vivo* codes, which are based on brief phrases expressed by the participants themselves (Glaser & Strauss, 1967). *In vivo* codes reflected the participants’ experiences and perspectives

using their own words (Strauss & Corbin, 1998). My decision to use *in vivo* codes was to present the sub-themes in a way that would likely be familiar for those with similar experiences.

Summary

In Chapter Four I described how the fidelity of the study and the quality of the data were enhanced throughout the research process. Specifically, I explained the important methodological issues of reflexivity, audit trails, authenticity, and interpretive rigour, and how these strategies were employed throughout the data collection and analyses. Chapters Five through Nine will present the participants' lived experiences and discuss the convergences and divergences between the findings and the literature.

CHAPTER FIVE

RESULTS AND DISCUSSION

In the chapters that follow, I will answer the central research question that defines this project: how do third-year students at the Northern Ontario School of Medicine describe their experience developing processes of adaptation during their Comprehensive Community Clerkship? The results and the discussion sections are integrated in order to discuss the study findings in relation to the analyses of the major concepts that emerged, moving from description to interpretation, and finally to providing clear links between the research questions and making inferences in relation to the theoretical literature. This was accomplished through reflection on the convergences within the data, exploring its meaning more in-depth, and relating the findings to the literature (Smith & Noblit, 1989).

A conceptual framework was developed to describe the emergent themes and sub-themes pertaining to the participants' lived experiences in relation to adaptation, and the relationships between them. Figure 1 situates the third-year medical student at the centre to demonstrate the layers in the environment surrounding their clerkship experience. The next layer represents the central features of stress, appraisal, and processes of adaptation (see Lazarus & Folkman, 1984). Finally, the outer layer represents the key themes and sub-themes.

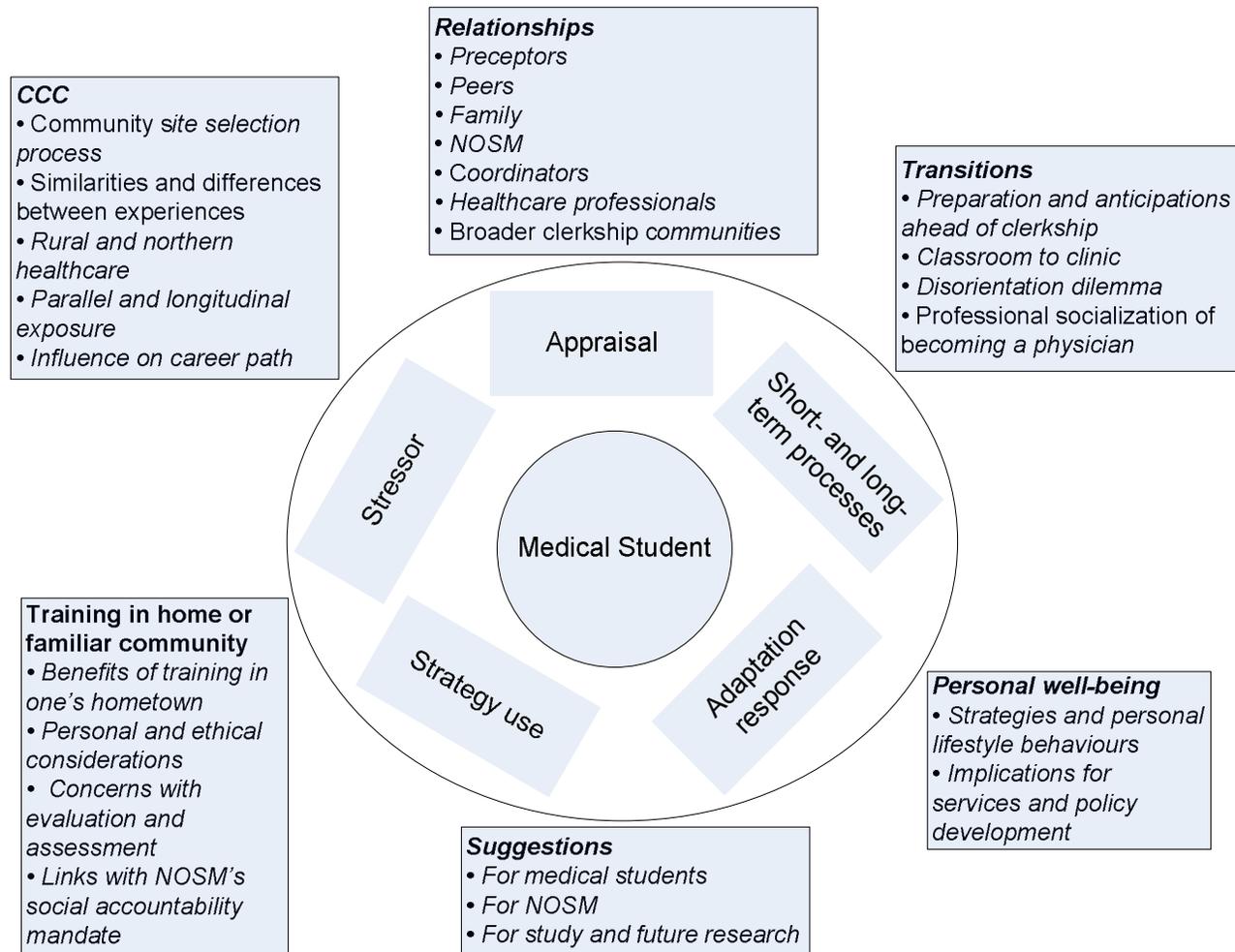


Figure 1. Conceptual framework of themes and sub-themes

The inductive thematic analysis presented in the next chapters includes the narratives produced by the participants in their own words. It was suggested by many of the participants to present the data as a grouping together of narratives across participants on common topics to better understand the collective experience, as well as recognizing when renditions from individuals provide unique or distinctive features. In terms of the descriptive approach for reporting, each chapter will describe a major theme and relevant sub-themes including pertinent narratives to the topic examined in such a way that follows the chronological timeline through the clerkship, leading to consolidation post-clerkship. In addition, any time a participant referred to, for example a community, location, or an individual's name, these terms were labelled using a quotation-specific method (i.e., community A, community B, Dr. A, etc.). The purpose for labelling the terms this way was two-fold: a) for ethical safeguards in relation to anonymizing the data and b) to assist the reader with distinguishing between communities and people in each quotation.

The findings provide a glimpse of the adaptation processes experienced pre-clerkship, *in situ*, and post-clerkship through the use of narratives to describe the multiple dimensions of the Comprehensive Community Clerkship. The overarching themes are as follows: (a) Comprehensive Community Clerkship, (b) Training in home or familiar community, (c) Relationships, (d) Transitions, and (e) Personal well-being.

COMPREHENSIVE COMMUNITY CLERKSHIP

The Northern Ontario School of Medicine is the first medical school in Canada in which all third-year students undertake an eight-month longitudinal integrated clerkship, the Comprehensive Community Clerkship (CCC) (Eggertson, 2007). The key factors that were identified by the participants when they described aspects of the CCC were: (a) the community site selection and placement process, (b) the similarities and differences between clerkship experiences, (c) rural and northern healthcare, (d) parallel and longitudinal exposure, and (e) influence on career path, each with sub-themes.

Community site selection and placement process. The key aspects of the community site selection and the student placement process consist of: (a) a duration of time when the process occurs, (b) the submission of students' rank lists and special circumstances for consideration, (c) a placement algorithm, (d) the announcements of students' site placements, and (e) opportunities for student-arranged 'community swaps' (or change of location for the placement).

The entire process begins in the month of December during Year Two. To assist students with making their selections, there are sessions and presentations from the various communities. During these sessions, students also tap into the anecdotal experiences from senior students including videoconferencing with the current clerkship students – the coordinators leave the room so that the clerkship students can speak confidentially to the second-year students. Their decision-making requires the consideration for prospective career planning. The students submit their rank lists of communities at the beginning of February. An algorithm was created as an objective method of placing as many students as possible in their first choice of communities in

their rank lists. There is also a review process whereby special circumstances such as students with children or compassionate reasons are considered. The announcement for student placements is made in late February. Students are then allowed to independently arrange for placement changes until the end of May, at which time a final announcement regarding student placements is made.

When considering what influenced the participants' decision-making in ranking their community site selections, the range of motivations the participants described included: (a) "I chose communities which were close to home" – the proximity to home and geographical location, (b) "depending on how the community structures its preceptors" – the preceptor rotation in the community, and (c) "that's where you need to go" – supportive behaviours. In addition, several of the participants described (d) "it can cause internal conflict among students" – points of contention associated with the site selection process. Each of these will be discussed in turn.

"I chose communities which were close to home" – Proximity to home and geographical location. As a consequence of undertaking clerkship in a community away from campus, one of the motivations underlying the participants' ranking of communities related to the regional proximity to home. The following participant described the importance of being relocated within a close proximity to home to be able to both receive social support from, and provide to, her family.

Yeah, I actually chose [community A] but I got [community B] which was my second choice. I chose communities which were close to home because I'd be able to see my family. I have a very old grandmother now who I absolutely love, and I would hate to not have just to have those supports, my family and my siblings. My sister has two sons now and that's changed our entire dynamic as a family. My parents have grandchildren now so

this is a big thing so both having those social supports I mean also give some supports right with my grandmother. My grandmother's 90, she's still in amazing health, she's doing really well but you know at that stage that your days are numbered right. So I chose places close to home because of that, to both give that support and to receive support from my family. I personally didn't choose a placement based on who else picked that placement. My best friend here at school is going to [community C] so that's a big distance. I'm not sure when I'll see her. I don't know I just didn't feel that that was the most important thing to picking a placement. I think what I've noticed this year preparing for CCC is that most people's concerns are surrounding their family, surrounding the community so much more than the learning. [MS1-pre]

The site selection process afforded students from Northern Ontario with the possibility of returning to their home community for CCC. Although not a guaranteed outcome, all of the participants who could possibly do so discussed the significance of the ranking. The following participant felt that returning to his home community to undertake the clerkship might contribute to his decision regarding eventual place of practice.

So in terms of that process I mean we did see that there are a number of communities that take students for CCC and we rate each of them numerically in order of where we want to end up. For me, my choices were based on long term goals for me. I do want to go home and practice in [community A] where I am from so [community A] was number one on my list because I wanted to go home and make contacts with physicians and people like members of the hospital board and things like that so coming into residency and future practice I would have those contacts to go and talk to and establish myself into the community. Doing clerkship in my hometown for me would've given me a better idea of

the needs of the community because I'm still up in the air on really where I want to end up and what sort of speciality line that I want to go down if I want to specialize at all so getting to know the community I want to end up and the needs of that community and being able to be exposed to the specialities that are in that community and that would benefit in the community as well as strive in the community I think that for me would've given me sort of a better picture of where I'm going long term. [MS7-pre]

“Depending on how the community structures its preceptors” – Preceptor rotation in the community. In terms of how students ranked the communities, they did so based on information they received regarding the schedule of rotating between preceptors. The preceptor rotation varied from community to community rotating between preceptors every few weeks to every few months. This was a motivation underlying the participants' decisions regarding ranking the communities which had to do their personal preferences and how many preceptors they wanted to work with. The following participant described how the frequency of rotation between preceptors largely informed her decision to rank those communities more favourably.

I think one thing that I might be able to touch on is that through our ICE placements we've been accustomed to constantly meeting new preceptors and getting a feel for what a physician in a community that's not so closely associated with the everyday goings on of NOSM expects in terms of medical teaching and medical education. Constantly meeting new people forces you to think outside of the NOSM box to adjust to the preceptors that you have. You have to understand how you interact with the preceptor. There are people who prefer to have only one preceptor and others who prefer a variety in case they don't hit it off with a given preceptor. I think that was an important for selection for some of us. [We had to consider] what the structure of learning was, do you only have

one preceptor throughout the year? Do you take a gamble with him/her and hope you hit it off? Or do you rotate through a multitude? Depending on how the community structures its preceptors, some communities might be limiting for some students. I chose a community that rotates. I think that most communities do rotate between preceptors, but there are a few that stick to uniquely one preceptor so that might be influential in a student's decision for a certain community. [MS10-pre]

“That’s where you need to go” – Supportive behaviours. Participants shared several factors they perceived as supportive behaviours in their decision-making process. For example, family was noted as being supportive by providing a sense of confirmation to the participants regarding their choices.

But I mean they’re [family] all supportive of me choosing to come to [community] because they say “it is better for your education for you to go up north and be a big fish in a little pond or somewhere you know you can get lots of hands on and you understand the dynamics of the hospital and the staff, than that’s where you need to go”, so that’s really good to hear. [MS3-pre]

It was also expressed by many that the information sessions and presentations from the various communities were very useful. Specifically, this participant highlighted the advice received from students in senior years and the site administrative coordinators (SACs). She noted the candid descriptions the students provided which were particularly helpful to make informed decisions. She also expressed her commitment to participate in the following year’s session to promote her community and inform the future students.

I know that when we had a session when you can call in and you can see the students in the communities and there may only be one or two students they just sort of pump up

their communities after the SAC does, or answer any questions that the students have. I thought that was very valuable and so I would definitely volunteer for that here next year whenever that is it's probably in January or February for the upcoming second year students and let them know that this is a great community and that if they want to know anything that I would certainly be open to sharing with them. [MS3-pre]

However, many participants expressed they would have benefitted from more opportunities with upper year students to learn from their experiences in terms of what they encountered during their clerkship. The following participant described how being paired up with an upper year student would be helpful during the decision-making process in order to better understand what undertaking the clerkship entails.

Maybe that's something that could be worked out later is for each student in the community to be paired up with a student in that community to learn what that community is going to look like. I guess that would be very helpful. Yes, so like during our orientation week to CCC if one student from every community was able to speak to the groups of students going into all those communities just little things like this is what our schedule looks like, you'll be paired with one doctor for the entire year or you'll be rotating between 15 doctors or anything like that would be very helpful. [MS11-pre]

“It can cause internal conflict among students” – Points of contention associated with the process. Many of the participants discussed some of the challenges involved with the community site selection process and how it impacted them either directly or indirectly. These challenges included relocating to another community, the potential for interpersonal conflict between students regarding the site selection results, and the consequences of students being swapped. In the quotation below, one finds that a particular point of contention with the process

related to the anxiety experienced by students with young children. Specifically, this participant expressed that there should be additional consideration and accommodation for these students.

I don't think that the medical school is as supportive as it could be for students who have families. And I think that is one thing where they could be a little more flexible. I understand the distributed learning. I understand the social accountability mandate. And I think we can still achieve those things, but I think that people with families should have a few more options than the rest of the group. So, I think that if you have children and a family that you should be able to do clerkship as close to your family as possible. I think that you could do a clerkship somewhere closer maybe if not [home campus] maybe [nearby community] you know closer places. [nearby community] is an option, but I don't know, sleeping and living elsewhere when you have small children is really a tough challenging thing and I think it would be nice if there was a bit more flexibility. I am very happy here, I think this is a great school, I love the way they operate and the way they're reorganized. I just think that there could be a little, that there's room for improvement with respect to supporting families. [MS2-pre]

Several participants commented on the potential for interpersonal conflicts among students in terms of tensions surrounding the release of the site selection results. For example, the following participant highlighted the displeasure some of the students expressed regarding the results and how some subsequently sought community swaps with other students.

I think NOSM needs to be made aware of that. It can cause internal conflict among students. There was a bit of tension around the release date for the CCC communities. There were tears and there were relieved students and unhappy students. Geography plays such a huge factor in our decisions to the point where it can create some tensions. Once

the community assignments are released, they're released in one document so everybody knows where everybody is going. I know that that was the source of a lot of drama this year with the [community A] site in particular. There were so many people that wanted the site and were only eight assigned places so that created a lot of tension. People were constantly being bombarded with emails asking if they would be willing to swap communities and it almost felt like the communities were treated like baseball trading cards were when we were kids "I'll trade you [community C] for [community B]" kind of thing. It's sort of unregulated [laughter], disorganized. [MS10-pre]

Part and parcel of relocating to a community for eight months includes the logistical requirements such as securing housing and communicating with community leaders in preparation of the clerkship. These efforts can become complicated when students are swapped to another community. The following participant described these pressures of dealing with the setbacks as a result of being 'swapped' to another community late in the site selection process.

I think I might be a little bit different of a case. Coming into when we picked our original spots for CCC a list came out and it said that I was supposed to place in a different community than what I ended up in. I had originally placed in [community A] then through switches that happened then I was moved to [community B], so coming into CCC for me there was a bit of apprehension just because I'm from [community A]. I had living arrangements made in [community A]. I had contacts through the hospital there and through doctors I had worked with through the community and things like that and it was going to be a more comfortable situation or well I don't know if it would be a more comfortable situation or not but coming into CCC it was that sort of like I've got everything set up kind of thing but when the switches happened coming into CCC I had to

get a place to stay here in [community B]. I had to figure out where I was going to go, what the hospital is going to be like, what the doctors I'm going to be working with are going to be like, but everything all worked out. I mean it's great here, it's excellent, but there's a lot of planning and preparation that needs to go into to finding a place to live and being ready to move to the community which I mean is true of going anywhere just in my situation I had a little bit of a late switch in the game [laughter] so I had to find a place to live and things like that. I mean it was just sort of a last minute thing, I had [community A] then I didn't have [community A] [laughter] and then it was coming up. I mean I've lived away from home for so many years now that it's just fine, all I had to do was scramble around to find contacts to figure where to live and things like that but other than that I mean it hasn't really been, the switch didn't really affect it that much. [MS7-pre]

Some participants expressed how they chose to avoid or not become involved with the interpersonal conflicts associated with the results of the process. The following participant described the coping strategy she employed which included removing herself altogether from the stressful situations affecting some of her peers.

There were stresses about the application process to the clerkship. I kind of removed myself from it. People were really stressed about it, whatever it's their way of dealing with it. I just filled out the application and said whatever will be, will be. I guess that was a big challenge at the time, the whole selection process I guess transparency might have been a big issue. I guess I just removed myself. [MS11-pre]

In the quotation below, the participant shared how upon acceptance of being a medical student at the NOSM, it is well known early on that students are required to complete an eight month

clinical clerkship in a community in Northern Ontario in third-year. She noted how helpful it was for her in terms of dealing with the physical relocation.

So there's no doubt when I applied to NOSM, you know to go to NOSM first of all for medical school I knew that I could end up anywhere third year. I knew I could end up anywhere for my ICE placements, and so I was prepared to get wherever they chose to put me, but no matter what it would be a bonus for me to be in my home community. I mean it would be a bonus for anybody right? But I didn't expect that and I think that's something very important is you can't have that expectation because you don't know for what reasons people choose communities. It's easy to say that [student's name] is from [community A], she should get [community A] and so and so is from somewhere else and they should get it. We don't really get to know the reasons that people choose the communities that they choose, and even though they're not their home communities there's a lot of personal issues around why people choose the communities and there's intrapersonal reasons why. I guess the thing is I don't know how else the school can choose people to go to their communities. They try to use an algorithm. I didn't necessarily get my first top choices for ICE placements, yes I got my first top choice for CCC which I'm ecstatic about and I wouldn't give it up for the world but if I didn't get it I was prepared for that too. It wasn't going to destroy me if I didn't get it and I think that's part of understanding NOSM's mandate that we're a rural medical school, you need to be placed in rural areas and there's only so many spots in each community. So I think it's a very fair selection process, you're never going to please everybody. [MS4-pre]

As previously reported by Couper and colleagues in their evaluation report on the NOSM's clerkship year (Couper, Worley, & Strasser, 2011), the site selection process is a source

of stress for many of the students such as concerns with the transparency, communication, and how the students are placed. There is evidence to suggest that the community site selection process was identified as a challenge for some participants, and most certainly had an indirect impact on others. In terms of the motivations underlying the participants' decision-making, the participants suggested that future students need to be self-aware of their preferences and personal learning objectives when ranking the communities. The participants also described the importance of setting personal learning objectives for their clerkship and emphasized the need to have a positive outlook on the experience regardless of regional location.

Similarities and differences between clerkship experiences. As mentioned, the NOSM's clerkship model varies significantly from traditional Canadian medical schools. Specifically, the students undertake a mandatory eight month placement in which they have parallel exposure to the clinical disciplines and areas of medicine across the stages in the life cycle. Each of the 12 communities receives between two and eight students. The clerkship generally begins the last week of August with an orientation to the community and placement site. There are a multitude of factors which contribute to the similarities and differences between the clerkship experiences. When considering the perceived variability between the clerkship experiences, the similarities and differences the participants described included: (a) "each community is going to have their own way of doing things" – exposure to clinical procedures and specialities, (b) "we did a round robin with them" – preceptor rotation, and (c) "you're getting a little different experience" – comparability between experiences. Each of these will be discussed in turn.

"Each community is going to have their own way of doing things" – Exposure to clinical procedures and specialities. As a result of the perceived variability between the

clerkship communities, one of the most important concerns anticipated by the participants was not getting enough exposure to clinical procedures and specialties as they prepare for their Canadian Residency Matching Service (CaRMS) application. In the quotation below, the participant described how many others felt about whether the parallel nature of the CCC and access to various clinical experiences and specialties during the clerkship. She deliberated whether limited access to specialties might have an influence on obtaining letters of reference or impact her CaRMS application.

Although it is only an eight month placement, it is also an eight month placement. It has a huge bearing on your letters of reference. You'll be working with these physicians for quite a bit so if you want a letter of reference for CaRMS. And someone you worked with and know well would be from third year, it also sort of shapes you in terms of medical understanding and medical practice because this is your first long term clinical management with patients. And it's in hospital or in clinic so it makes, it does make a big difference and I would argue that there are big differences between the communities and different experiences. In [community A] I'm getting a much different experience than they're getting in [community B] than they're getting in [community C] and they're not better or worse they're just different. I mean certainly they vary and in terms of access to specialty in terms of burst weeks [a week or two spent with one specialist], in terms of clinic time in [community A]. Personally I don't like surgery, I mean I understand it's got its role and it's very important, but I could not see myself as a long term surgeon [laughter] because I don't like the lifestyle. I just don't think I would enjoy the job everyday and so knowing that from these experiences is critical and other students have made their argument that they would like to be in a different place because they do burst

weeks so they get to spend a whole week or a whole two weeks with a certain specialist. Whereas in [community A] we don't have that and there's not every type of specialist that comes here but certainly for those students that would cheat them because and when you apply to CaRMS you're going to apply to CaRMS I think it's October to January-ish the whole sort of CaRMS period. You'll need your reference letters but your fourth year starts in May and so you won't have had all of your fourth year rotations by the time you have your letters due so you have to have understanding of what you want to do and who is going to help you get there before then, so third year shapes you like that. [MS3-pre]

The following participant expanded on the topic of CaRMS matching and reiterated the similarities and differences between clinical experiences, including the varying approaches for primary care service delivery in each of the communities.

Being familiar with how trying to get an overview of how they run the hospital and what services are provided. Those things all came into play when I was choosing my CCC site and it's really difficult because some communities offered different hospital healthcare settings. Some have bigger institutions, some offer more medical services versus some are smaller and have more intricate services. See for myself I'm not sure what aspect of medicine I'm most interested in so it can be a bit of a frightening thing to sign up for a year of your clerkship and you're limiting your exposure to certain aspects of medicine which might come into play later on when applying for CaRMS matching and trying to get into specific streams, and to set up electives and sort of trying out if you will like different aspects of medicine before you apply. I have a few things I am interested in, family medicine being one of them so this CCC works very well for me in that aspect but then again I haven't tried many aspects of medicine. I won't be able to try those particular

aspects here in my CCC site so next year I'm worried that it might be sort of a wall for me. So to prepare for that I tried to do some electives this summer seeing those subjects that I didn't think I would see this year. So going outside of the scope of what NOSM had to offer to best prepare myself for I guess post-CCC. [MS5-pre]

The participants alluded to several differences between the communities with regards to the exposure to clinical settings including options for 'bursts' which allow for a periods of time in concentrated experiences in one core clinical discipline. The following participant described that he experienced working with some specialists although he was not in a community which had bursts in the schedule.

Now I'm finding that a place like [community A] is very generalizable to [community B] in the sense that the hospitals do relatively similar things and they have a relatively similar breadth of like speciality services. I think it's more generalizable, like the larger northern communities are a little bit more generalizable to each other. I think that CCC is going to give a better idea for anybody and what they want to do in whatever community they end up in or whatever community they seek to go to. I mean there are certain parts that will be similar to other communities and then again each community is unique its own way. Each community structures its CCC schedule itself so here in [community A] we don't get what's called a burst week whereas in a place like [community C] you get burst time which is an entire week dedicated to be being with one specialist and that's all you do. Here in [community A] we get to schedule different periods of time with someone, as well as working in the family health clinic that we're assigned to interchange like a place in between those specialty experiences. So the experiences that we get I think will be generalizable or similar in the fact that we're going to be seeing a lot of the same

health issues hypertension, diabetes things like that, but the actual structure and I guess individual community aspects will be different. Obviously right, I mean the ways some specialities, some specialists work, like the surgeons work on a rotating schedule here like they'll do surgery on Tuesday and then we'll be in endoscopy clinic and then the next week it'll be the Tuesday is endoscopy and then Wednesday and Friday are surgery and they rotate their schedules like that. I mean each community is going to have their own way of doing things. [MS7-pre]

“We did a round robin with them” – Preceptor rotation. The topic of preceptor rotation related to how each community physician preceptor participating in the CCC were scheduled with students for a number of weeks or months. The schedule was developed by the administrative and clinical coordinators in each community. This topic was frequently discussed in association with similarities and differences both within and between communities. The following participant shared his perspective in relation to switching between preceptors during the clerkship.

I'm with one preceptor now and we're scheduled to change after the New Year and one of the other students, we're supposed to just basically swap clinics and preceptors. But we're all undecided if that's what we want to do because there's value in both staying and value in switching. The value in staying is I'm used to the way the clinic works where I am, he can get a better picture of how I've done over the year and provide me with better feedback. Basically I can adapt to his teaching method or likewise he can adapt to my learning method. The advantage of switching is you get to see how somebody else runs their clinic, you get to see a different patient population. So they, a little bit of both and I think in this particular community a long time ago they initiated this switch because some

people weren't getting along with different people so it just fell into how things went. So it's funny you should ask me that question because just this week all four of us are talking what do we want to do, do we want to switch? And everybody seems to say "well it might be a better idea just to stay the way it is". Another student here has two preceptors and her week changes depending on who she's working with, so she's with the two different preceptors for the entire year so maybe on a Wednesday she'll be with this doctor in this clinic and a Friday she'll be at this clinic with this doctor. It's kind of neat. There's pulls to change, there's pulls not to change. We have an active role, our input is valued and as long as we are meeting our objectives both parties are satisfied. I think whatever works best for us basically is how they're going and same with the preceptors, they say "this is what I think, but really what do you want?" which is nice. [MS5-during]

The following participant expressed the different clinical responsibilities the students might encounter based on the additional responsibilities the preceptors they are working with assume in the community, including health promotion at academic institutions, and providing healthcare for inmates.

Definitely, so it depended on who your preceptor was for example I had three preceptors, so I got to skip around and experience different kinds of thing. One of my preceptors was the family doctor at the [academic institution A] and [academic institution B] so I got to experience a very focused kind of clientèle so it was young twenties-ish so a lot of sexual health, a lot of mental health those kinds of things. Whereas another one of my colleagues, her facilitator was the doctor for the jail so she got to experience that. She got to go to the jail and experience health care for inmates, different things like that. So that's just within communities and I'm sure it's like that everywhere else. So if your preceptor

happens to be the coroner for the town well then you're going to experience that, which nobody else is going to experience, right? [MS11-post]

The next participant consolidated her views on the three-week preceptor rotation model and felt that it worked well for her. The reasons for this consolidation were two-fold. First, she expressed how many of the others felt in terms of the burden on the preceptor to supervise students, but that the three-week rotation lessened that burden. Next, as she had noted during the first interview, she described how the frequent rotation of preceptors was her preferred model, particularly in the event when there were interpersonal challenges.

There were so many of them. We did a round robin with them it was less of a burden on the preceptor because they would have three weeks at a time and then say six weeks off and then three weeks with another student so it was doable time wise because we are very time consuming [*laughs*]. To have a student in your clinic, it doubles your workload. It's something that is expected of you as a physician, so it's not like they're not aware that they should be teaching but I think that it can get very burdensome to teach and to place that burden on one preceptor or I guess the four preceptors in the community would be too much. So for our community it was the best possible rotation and I myself preferred that model. It was one of the reasons why I chose that community because I knew that. So if you did have interpersonal challenges with the preceptor that you were with, it was only three weeks. If you had a fun time, it was only three weeks. It felt very different, you know? Three weeks can go by very quickly or it could be long, long enough depending on who you're with, but I knew that everything was temporary. If I had a bad experience it wouldn't completely colour their perception of me for the rest of the year, you know? You have this ability to start fresh with other preceptors. And to get to know everybody I think it

was very important for us to get to know everybody and to see how everybody fits. It's something that I think is valued in the community. [MS10-post]

The following participant reflected on the benefits of being with one preceptor for a long duration and felt the evaluation feedback was that much more meaningful as a result. She described the benefits of receiving cumulative feedback from preceptors during her clerkship and how helpful it was to improve learning gaps.

I think being with one physician for such a long time is very important. Having somebody, being able to follow through, give you feedback and then further feedback on that feedback like a month later saying, "okay, well yeah you did do that and that was awesome, you're learning and now do it this way". It's a real continuity really and in our skills as future clinicians. I think it's really important having, although I do have a few physicians, I'm not stuck, I don't have just one which is good too. I get a long term relationship with a couple physicians, so they get to see me through the year. I think that's the best feedback possible. I'll be able to really see from the change from the beginning to the end. I'll be able to have some concrete evaluations that say "yeah she has improved" or "dude, she's way off mark" or whatever. And they'd know what our weaknesses are and they're usually really good at working on those. So pharmacology is terrible for us and my physicians are good with that they're like "okay, so you need to figure out what medication you're going to give her. Now go and figure out, go study, go look at your resources and come back and tell me". [MS11-during]

"You're getting a little different experience" – Comparability between experiences. The comparability between the experiences referred to the corresponding features across the communities at the cultural, academic, and regional levels. The participants, without exception,

were intrigued about what their peers did in other communities. The following participant described his views on the variability between experiences. However, he shared that regardless where medical students complete their medical training, they must pass the same national examinations. He highlighted the fact there are students at two campuses from the outset of first-year, therefore in addition to this inherent difference he was curious about the student experience in other communities.

I don't think academically speaking, I think we're all going to cover the same material but I think everybody will come out at the end of next year with different perspectives on different circumstances or different topics. I would hesitate to put too much weight on the fact that it's because there's two different CCCs because that's the same as a student going to McMaster and a student going to the University of Ottawa. They're going to come out and they're going to pass the same exams but they're going to look at things a little bit differently. So to me it's just interesting to see that happen within one institution and from the get go it's been like that with the campus being split between [home campuses]. We're the same class, we cover the same lectures, we cover the same labs and cover the same exams but it's two different groups of people. We get along really well but you're going to see how well you can't really see but you can expect that there would be differences between the two and they're not two classes it's one class so it's interesting. It's something that I always questioned and was curious about with going to these placements and even just simple placements at school depending on your preceptor you're getting a little different experience. But it seems at the end of the day everybody comes out with the same knowledge with a little bit of a different spin on it which I think is going to be healthy especially in the field of medicine. [MS5-pre]

Another participant offered her view on the topic of comparability in relation to the variability with the clinical encounters and procedures experienced. She described having to refer patients who required nuclear medicine or other diagnostic modalities to a nearby community and how this lack of exposure remained as a learning gap as a result.

Huge, huge, huge differences. I mean if you look at [community A], they have MRIs and nuclear medicine, we don't have that. We referred out to [community A]. I never once looked at an MRI this year. I don't know how to order a nuclear scan because I've never had to do it. I don't know what the indications would be for ordering it, other than your typical bone scan or thyroid scan which we learned about in first and second year. And even then, I never saw them actually ordered, just based on what I ended up seeing. So I think even within the communities everyone's experiences differ. One of the other students who were with me may have seen four people get ordered for nuclear medicine, right? It just could be that that's just what I had but I just think for those of us who don't know what we want to do. The opportunity to get some exposure to some specialties that we might be interested in our third year to help guide us through our fourth year would be really nice. And I think in the bigger communities you can be lucky enough to get those spots because they have them in that community, whereas we don't have them. We just don't have access. [MS9-post]

The following participant discussed a research activity her clerkship community preceptors had developed whereby the students were required to research a selected topic and present to others (e.g., peers and preceptors). She described the merits of this sort of activity in terms of developing scholarly research and critical appraisal skills, as well as presentation skills.

We also did, which I thought was fantastic, we had to each present a research paper. So we had to do a literature review and present a topic and we had to present it to the community of physicians and health professionals, which I had never done before for medicine. I'd done it in my previous career but I thought it was great because it was very intimidating because I had to present this research topic to my preceptors, and they critique you. I thought it was a really good icebreaker because it is something I'm going to have to do in my career and I think it's a nice way to start. No, this is outside of the curriculum. So this is something that [community] proposed that each of the students do on top of sort of your CCC year. So you picked, it was on a Friday afternoon so every student picked a Friday and we did about a half hour presentation, presented a topic and then there was a question and answer period. So although it was extra work, I thought it was very beneficial because we went through how to decipher statistics, how to find a good research paper, and how to answer questions from your preceptors. So I thought that was really neat. [MS4-post]

Another participant pointed out the limitations associated with providing students the same experience in one single community, and identified the inherent variability even if one tried to accomplish a homogeneous experience such as different preceptors. She also shared that the length of the clerkship was conducive to learning, whilst bridging the gap between students with a science versus non-science background.

I don't think there's any way to regulate the experiences and really have them be similar. The only way to do that, or attempt to, is to have everyone in the same community. But even then, you're all going to be with different preceptors and you're going to have different experiences. So I think with the length of the rotation, I think that's where the

value comes in because just by default. The longer you are doing something the more likely you are to see and the more likely to even the playing field with everybody as well. So I'm not sure that there's really a better way to do it, or if there's a value in changing that because again I think it comes back to what you're learning priority are as a student. Do you want a really large community experience or do you want something smaller and more remote? And so in a way it's almost like doing a locum before you're a physician, right? You really get the chance to immerse yourself in that community and learn how it works. For me I think it just gives you a chance as a student to relax in the process and engage in learning more. I think it allows you a chance to worry less about did you get enough out of that two week experience? And now you've got to move on and is that preceptor going to sign your form? And I think it takes a little bit of that stress out of the process and allows you to engage in the learning. So for me, I like the length. [MS12-during]

Rural and northern healthcare. The participants' clerkship experiences were influenced by various local factors including the characteristics of the surrounding communities, the provider groups' composition (e.g., number of clinicians and other health providers), the patient to provider ratios, and information technology infrastructure (e.g., electronic medical records). In terms of rural and northern healthcare service delivery and exposure to various health professionals at different levels, the availability of health care services and health professionals varied from community to community and thus may have influenced how the clerkship was experienced. The sub-themes that were considered by the participants when they described aspects of rural and northern healthcare were: (a) "this is a clerkship in rural family medicine" – the variability with primary care service delivery, (b) "if there are those specialists in the community and if they are willing to teach" – exposure to specialties and sub-specialties, (c) "it's

very typical of Northern Ontario” – regional aspects, and (d) “I feel like a big fish in small pond” – the distribution of learners. Each sub-theme will be discussed in turn.

“This is a clerkship in rural family medicine” – Variability with primary care service delivery. The participants acknowledged that rural and northern healthcare can be a challenging environment requiring advanced clinical skills and additional competencies such as knowledge of the regional health practices. For example, the following participant discussed the variability between physicians’ responsibilities in smaller communities than in more urban centres. She described how rural family medicine in her community comprised of family physicians with clinical expertise in multiple areas. As a result of following patients along the continuum of care, she felt her understanding of this type of primary care service delivery was deepened.

I think that living and working in a community for an extended period of time does have, offer value. I think from that perspective it’s a good thing to do. And you get a feel for the community. I mean the idea is these are underserviced areas, right? So hopefully you’ll develop relationships where you’d want to stay. This is a place where I could see myself staying and be happy in. So I think from that benefit it is good. I think the rural thing is also important and seeing the breadth of a scope of a family doctor can be in rural centers as opposed to urban centers is beneficial as well. Well I think being in [community A], in a small community, the opportunity to spend time with specialists are not as many as they would be in an urban center, but the whole point of clerkship and distributed learning is to, this is a clerkship in rural family medicine and in [community A] the family doctors run the health system. So, I think it’s exciting that you get to see family doctors having such skill. They do anesthesia here, they do deliveries, they are hospitalists, and they run a clinic and their practice. So I think that’s exciting just to see that. My observation is that

the family doctors run the health system here. And when I say that, they have their offices, but they also take turns doing hospitalist so all patients admitted to hospital, are cared for by the hospitalist. They pretty much lead the health care in [community A], where it doesn't work like that in [large regional referral centre] for instance. You've got all these different specialists. So the system here, people do things differently even in hospitals the system is different. So, by spending time somewhere, you can get a good idea of the system. [MS2-during]

Another participant echoed the previous participant's view and expanded on the point of the variability of how rural family medicine is experienced from one community to the next. She explained the challenges associated with the healthcare service delivery in Northern Ontario, particularly in the absence of certain diagnostic modalities to aid clinical decision-making.

We send lots of patients for like MRIs and stuff in [community A], or CAT scans because we don't have any here. It means that you have to be sort of more clinically astute I think because you're not going to just send everybody to [community A] for a CAT scan or an MRI if it's not a hundred percent necessary. The surgeon here will operate without a CAT scan, right, because he's used to operating without one. Whereas new grads often won't operate until they have imaging confirming what they're going to be getting into. We don't learn to read CAT scans, although when you're in emerge you might look at an x-ray and say okay I think this is broken or this is going on but you can do that with a CAT scan. You can load them from [large regional referral centre] like in ideally because we're on MEDITECH and IMPACS but it takes so long to download a CAT scan because there's so much more information I guess to be transmitted or whatever. It's not really practical and the physicians here don't really do it, they usually just wait for a verbal

report or a report from the radiologist. So we are missing a lot of reading CAT scans and MRIs which is a family physician skill in an Emergency Department that has those available. You also have to think about it in terms of your patients, like you're not going to send them for these tests everywhere if they don't really have to or in crappy, snowy weather. So there's pros and cons. [MS3-during]

One participant eloquently described the differences between working with a preceptor who has hospital privileges and those who do not. These differences related to the breadth and scope of the physicians' responsibilities MS2 and MS3 alluded to in the previous two quotations. This participant discussed the opportunities to follow patients along the continuum of care as a result of working with preceptors who had hospital privileges.

Every site works differently. So in [community A], something I found interesting is that there are no hospitalists, which means that family physicians follow their patients in hospital. They do that in [community B]. Yes they do that, so there are no hospitalists so when your patient goes in, you're the one following your patient so there's no doctor in the hospital who follows all the patients, your family physician does. Some sites aren't like that, right? So some sites have hospitalists so once your patient is in, the hospitalist is taking care of them. So in [community A], I found that interesting because it offered me the opportunity that every morning I would round on my patients at the hospital before going to family clinic. So you really get this follow through concept. You really get to know patients because you're seeing them every day and some patients are in the hospital for six months. Actually one of them [a patient] was in the entire time I was doing my clerkship so I got, well I didn't go see him every day but, you really get the

concept of continuity right? And then you get to see them in clinic the next week when they're out of hospital so that was interesting. [MS11-post]

Another participant extended the point of preceptors with hospital privileges explaining the benefits for patients when their family physician is able to see them in the hospital such as the already established rapport, the continuity of care, and follow-ups. She also compared and contrasted her clerkship experience to an elective she completed in a large centre, and delineated that patient-centred care is epitomized when physicians follow their patients throughout the care plan.

Not that experience specifically, but more the experience generally of continuity of care. I recognize how important it is for patients, for their perceived level of care. It just seems that they receive the same medical management whether or not it was a hospitalist or their own family physician taking care of them. But for some reason just having that rapport and having that familiarity with those that are taking care of you seems like it's a very comforting thing for the patients. I think other sites that are only using hospitalists that could be using their own family physicians to do in-patients, should be looking at my community as an example of how it is very doable, it works really well. And it can work in a larger community I believe if more GPs (general practitioners) were given hospital privileges. But it seems like in the larger the community you get, the more and more cut off GPs are from the hospital because I know in [large regional referral centre] for example, I did an elective in family medicine and the physician that I was with did not do obstetrics because he didn't have hospital privilege. He didn't do in-patients because again they don't have hospital privileges to do so. It seems like care is very compartmentalized the bigger and bigger you get. Although it makes sense from an

organizational standpoint, I don't think it's necessarily the best for the patient. It's one thing I've noticed. [MS10-post]

“If there are those specialists in the community and if they are willing to teach” –

Exposure to specialties and sub-specialties. The exposure to specialties and sub-specialties was a topic of discussion that all participants brought up throughout the present study. Some participants expressed examples when they received negative comments towards particular areas of medicine as though to discourage them from pursuing certain career paths such as family medicine. All things being equal, there were also remarks made towards specialities. The following participant's experience reflected in part the hidden curriculum associated with students gaining exposure to preferred disciplines. She described one encounter when a physician commented unfavourably when she asked to gain exposure in psychiatry.

But we're not getting a lot of exposure to specialties, not at all. I am interested in psychiatry. When I first got here, I set up, we have these things called burst weeks, where we're with specialties, or were supposed to anyway. And they were outlining our schedule and said, "You're going to do two burst weeks in internal medicine, and one in surgery." And I was like oh well I really like psychiatry, can I ask to do one in psychiatry. That would be helpful if you're interested in something, it's always better to have more. And the doctor was like, "Pfff why would you want to done in psychiatry?" [laughs]. So they're not flexible at all here. And the specialties that they arranged for us to have a little bit more exposure to are also very general specialties, like general surgery and general internal medicine. I guess we're expected to just be content with getting little tastes here and there. [MS8-during]

The following participant expanded on the point of limited exposure to specialties and emphasized how difficult this experience could have been if she did not yet know what career path she wanted to pursue.

I don't feel like I got good exposure from all the major specialties. I got a lot of emerge here. I got a lot of surgery. I got a lot of family medicine. I got one day with a pediatrician. So all the pediatrics that I did was either within the family practice office or within emerge, which is okay but I would have liked to spend more time with an actual pediatrician. I didn't do a lot of obstetrics. I only did two vaginal births and I was involved with five or six other women in labour. And to me that's okay because I don't plan on doing obstetrics as part of my practice but if I had wanted to do obstetrics in the future I think that would have been disappointing. There was no psychiatrist here, so I did see psych patients but they were either in the family practice or in emerge. I wasn't really with a psychiatrist so we would have people like come in schizophrenic or suicidal and we would put them in the psych room and do an assessment and then we would just ship them off to a psych facility. So I mean I saw the psych patients. I think if I would have assessed the psych patient with a psychiatrist, probably could have got more out of the experience. Whereas in emerge you just sort of want to make sure they're not an immediate threat to self and then triage them and get them to where they need to go. So there's not a lot of psych here, whereas if you were in a bigger center, you would see that. I mean I'm okay with it but I plan on doing family medicine so if somebody was really interested in a certain specialty they would be wise to research the community that they're going to see if there are those specialists in the community and if they are willing to teach.

[MS6-post]

On the other hand, there were some participants who felt they had satisfactorily been exposed to a sufficient number of specialties and sub-specialties. For example, the following participant attributed the access to a wide range of specialists to the community he was placed in.

We get access to specialists, we get access to primary care, we get access to the like non-physician health professionals as well through other things. We get to see that whole other side of whoever we're referring to like the physiotherapist, occupational therapist, things like that. I think it's really great because we have a lot of the services here in [community A]. And a lot of the big things that we are going to be seeing or referring to in medicine, like we have a nephrologist for dialysis and like other little places like [community B], and [community C] and those places don't have that, right? So I think we're really lucky here where we can just walk down and knock on the door and say "I need to see this specialty.", and I come and work with you for a little while. I don't think there's really anything deficient here like I mean everything in Northern Ontario for big sort of procedures you're sending it down to [community D] anyways. [MS7-during]

"It's very typical of Northern Ontario" – Regional aspects. Much like northern and rural health curriculum content taught throughout the NOSM MD Program, the participants raised important considerations related to the regional aspects of the life of a physician practicing in a northern community, such as the risks associated with commuting daily to surrounding communities and traveling in wintery conditions. The following participant described having to travel several times per week to work with a preceptor in a surrounding community. She also highlighted the importance of additional consideration regarding medical student fatigue given the inherent risks of long commutes, especially during inclement weather.

The doctor that I'm with now is in [community A] so I have to commute to [community B] three days a week which is like a, what 40 minute commute, 62 kilometers. It adds up, and usually if you're a student with him you actually get to drive with him out to the communities, but the problem is because we have our VARs that are scheduled Mondays and Thursday afternoons, I have to come back and he runs clinical afternoons, so therefore we don't carpool. And now that means I'm driving myself. And I mean there's no expectation that I have to get there as fast as he does or anything like that so usually I'm about 10 minutes behind him. There are all the additional challenges [laughs]. So I'm actually really surprised that there haven't been more accidents with medical students in cars and stuff like that. Actually something I was thinking about in terms of this PRRE [Personal Research and Reflective Exercise] and I was like doesn't really benefit the community at all if I'm just looking at the medical students, I mean like just level of fatigue and stuff like that. And then you get off on Friday and the first thing you want to do is go home and get home as soon as you can so you actually do dinner on Friday night and you're not getting home or you don't want to drive at night and it gets dark at 4:30. Well going to [community B], I mean 62 km, I mean it takes me an hour to get out there if the weather's bad, an hour to get back and I'm only out there for three hours in the morning. So, I get an hour of clinic stuff, so I get to see two patients, maybe three patients, like is it worth it? I fully can appreciate, and especially some of the other communities where they've got, like we haven't had a big dump yet so it's not something that's on my mind yet like today was the first day that we had snow at all. But it's going to only get worse and, I mean the doctors that we work with are from here, and then we

went and did a coroner's case up in [community C]. We're commuting, like it's hundred kilometer radius depending on the day. It's a big area. [MS9-during]

The following participant conveyed her perspective on the relevance of the NOSM's northern and rural health curriculum with respect to preparing the students for the realities of training in Northern Ontario. She discussed how the CCC deepened her understanding of the healthcare needs of people in Northern Ontario.

It's very typical of Northern Ontario for all the joking that we do about Theme One in our undergraduate education. It's very much the epitome of northern and rural health, just the issues that you see, accidents at the local sawmill or people who fall on chainsaws that need to be stitched up [laughs]. You see a lot of hypothetical northern situations including the dead of winter where you need to fly somebody out to receive higher level care. I mean we always say, "Oh! Yes, yes yes! We know geography's important, it's on every single NOSM exam." You don't know it until you live it though. So it was a community that was very much reflective of some of the challenges and burdens of practicing in rural Northern Ontario. Practically, theoretically, the challenge, geography is important and you don't know how important it is until that ambulance will not leave the raging snowstorm. You cannot leave a hospital and we're trying to fly somebody out in less than ideal conditions like that's scary, you know? And we got to live that so I think I'm sort of grateful for the northern curriculum. Even though it sort of intuitive. It's nice that they have prepared us for the realities of practice and it's nice that this community is sort of gave us a hint of what it can be like to practice in rural Northern Ontario. [MS10-post]

"I feel like a big fish in small pond" – Distribution of learners. The distribution of learners related to the learners from various disciplines engaged in clinical learning in the

community. These learners included NOSM medical students (lower and upper years), students from other medical schools, residents (NOSM and other schools), as well as students from other health disciplines such as nursing. The following participant described the distribution of learners in rural and northern regions.

Here I feel like a big fish in small pond in the nicest way possible because and there are [no] other students here other than us and so everybody caters to our educational needs as best they can. We're really lucky and I just don't know if that would happen in a larger centre. [MS3-pre]

The participants agreed that learning opportunities were particularly beneficial as a result of the preceptor to medical learner ratio. One sees in the quotation below how the participants benefitted from being involved in much more learning opportunities as a result of the small number of learners in the clinical settings.

That's the beauty of this program, is because it's rural and we're not in Toronto fighting for, with a harem of students and the most senior learner gets all the opportunities. It's not like that here, there are four of us so we're going to get exposure to everything. So actually I think we're better off in a rural centre and I think we will have more skills in a rural centre. And the learning opportunities are better. People are sicker, there are fewer students. I think it's better. [MS2-during]

The participants felt as if the presence of residents in the clinical environments buffered their learning in terms of the non-competitive nature in the pursuit of learning opportunities.

And that's the other great thing here is there are seven CCC students and usually the maximum is about four to five residents. So there isn't a lot of competition to do things, which is fantastic. If you want to go in the OR [operating room], the chances of there

being someone else in there is very slim so you can call and say “I’d like to go in the OR for today”. And the residents like having the students here too, they don’t feel like it’s a competition. Feel like an adjunct that “the student’s here, let’s bring the student in”. The residents are great if they’re on an obstetrics call and you want to be, they’ll say “come on in, you can have my call, I’m busy this weekend” and we see them a lot so it’s nice. Most of them are NOSM residents because NOSM I think has priority here, but it’s mostly NOSM. So they have the same mentality as the rest of us, it’s not a competitive environment, and we get lots of feedback. That’s one great thing. [MS4-during]

Another participant echoed the view of the previous participant and expanded on the distribution of learners by highlighting the scaffolding that occurred as a result of the preceptor teaching at a superior level when a resident was present.

There hasn’t been too much overlap. It only started about a month ago. So we’ve only had two, but they give us all the great topics and it’s some of the, honestly, the best learning. They’re one hour basic sessions on specific topics that the residents need to know. And they go through everything from what is the definition of this problem? Through to how do you manage this problem and treat them and what are the counselling and prevention things? So that’s been extremely beneficial and it’s good for us and for them because some of the CanMED roles of course involve being a teacher and for us as learners they’re not intimidating so you’re not scared about asking those silly questions. The other thing that’s good about them is they do come out, one of the doctors does C-sections and he’s training one of the residents to learn how to do them, so that’s about the only OR time that you share with a resident. It’s actually great because when he’s teaching her, he’s teaching her to actually learn how to do the surgery beginning to end. And so

therefore you're getting all this extra learning as he's teaching it at a higher level. He's not just teaching it like what are the layers of skin and what type of suture are you going to do, he's talking now about the tension that needs to be in there, and the angles you want to go in and so it's neat. And that and I mean those surgeries you don't get to do as much but the learning is interesting. It's a nice mix. I have no complaints with having the residents here, I quite like them. [MS9-during]

Different geographical settings and contextual factors can have an influence on the availability and accessibility to primary care (Cummins, Curtis, Diez-Roux, & Macintyre, 2007; Curtis & Jones, 1998). As in Couper and colleagues' evaluation of the NOSM's CCC (Couper, Worley, & Strasser, 2011), the exposure to specialties and sub-specialties was a topic of discussion that all participants brought up throughout the present study.

Parallel and longitudinal exposure. The parallel and longitudinal exposure related to the uniqueness of the NOSM's CCC, in which the students experienced various clinical disciplines and areas of medicine across the life cycle rather than in four-week block rotations (Tesson, Hudson, Strasser, & Hunt, 2009). The sub-themes that were considered by the participants when they described the parallel and longitudinal nature of the clerkship were: (a) "the part of the program that defines NOSM's curriculum" – unique aspects of the CCC, (b) "to actually follow a patient through" – continuity with patients, and (c) "it's been hard on all of us" – contextual challenges. Each sub-theme will be discussed in turn.

"The part of the program that defines NOSM's curriculum" – Unique aspects of the CCC. All of the participants shared their perspectives on the unique aspects of the CCC. In the quotation below, the participant revealed how he felt as a NOSM student undertaking the CCC

given the various clinical clerkship models at other medical schools such as four-week block rotations in large tertiary hospitals.

We're realizing that the way the program is running in the first two years is really setting us up to succeed in CCC and succeed in the community with patients and with physicians. I think that one of the biggest things coming into the CCC is we're feeling like we're actually doing something now with what we've been learning or the last two years. We're able to apply things in a very real sense and just not feel overwhelmed right away. I mean just having the opportunity to do like a distributed clerkship is so much different than a lot of medical schools. But to be able to come and do this clerkship with having dealt with patients before and being in clinical settings before I think it sets us apart from the other medical schools where when students get to their clerkships they go in almost completely blind and they barely seen patients before. They haven't worked in a real clinical setting, they've never been in the OR, they've never worked emerg. So I think that the students from NOSM coming in and being exposed to the workload that we are being exposed to we can deal and cope with it a lot better because we're more experienced coming into CCC than a lot of other people. [MS7-pre]

The following participant described her view on the parallel exposure of the clinical disciplines on the longitudinal clerkship model. She emphasized that the CCC is the defining feature of the NOSM's curriculum.

It's tough, it's been a big transition because now you're hoping to please lots of people and you're expected to be good at everything. And with the longitudinal program you're expected to go from like one case like a geriatric psychiatry and then you move into like a pediatric acute urgency. And then you go into something totally different and then you're

expected to be able to go and deliver a baby. You have to be able to like work your mind from one thing to another thing instead of having like a mindset like “I’m in obstetrics for six weeks” right, “I’m only going to do babies for six weeks”, you always have to be on your toes. And so sometimes it’s really tough. And so it’s those responsibilities that I find are catching up to me because you’re expected to be good at fractures and good at delivering babies and good at this but you’re exposure is variable. I think it takes a different mindset to get over that and to be able to say you know, “I don’t know but I’m going to look it up real fast” [laughs]. It’s a big change, I think it’s probably the part of the program that defines NOSM’s curriculum. I think that this is where we get the like the practical experience that really narrates your career and you get to chance to try out things and say “What I really like doing this or I would prefer not to do a lot of this.” And what you want to do in an office or in a surgical suite and even the skills in terms of how to do things or how to do scrub in for surgery so that you’re sterile. Although it’s not explicitly taught and we’re taught by many people in the community be it the nurses or the cardiac technologist or your preceptor that you gain that information, I think that we’ll emerge at the end of the CCC either equal or ahead of our peers from the other medical schools. And, many areas, whereas at the end of first or second year I would say that we actually probably had less knowledge base than other schools, just from anecdotally speaking to other students from other schools. And the amount of knowledge that they’re learning and the number of exams and things like that. So we gain a lot of that I think in practical knowledge while on CCC. [MS3-during]

The next participant eloquently explained the differences between the block rotation model and the longitudinal integrated clerkship model. Specifically, she compared the sorts of learning

experiences from block learning found in most traditional clerkship models, and described her preference for longitudinal learning as the foundation required for any type of career path in medicine.

Sometimes that makes it hard. It too has its pros and cons. So fourth year is more blocks. Third year's more longitudinal. I think that's why third year initially is hard because it's pockets right? You're placed, like in one week you might be working in four or five different areas, but I think in the end, initially it's harder. Whereas fourth year, you do your first month in emerge, you do your next month in surgery, so it's these big blocks. Whereas in third year we're doing like in a week you have all these tiny little pockets in areas that you might be working in and so your brain is always changing. I think initially it makes it harder but in the end it makes you a quicker thinker and more well-rounded in the end because then you can adapt to anything that's thrown at you. But I think it might be harder initially versus doing blocks. And then blocks has its pros too because then you learn something really well fast. Surgery you learn well. Whereas if you're only doing surgery once a week for six weeks it's a bit of a longer learning process. But I like the longitudinal learning. I think that's what family medicine is, longitudinal. Now if you're going to be a specialist like a surgeon I think it's different longitudinal. But you still, even if you're going to be a general surgeon, you still need to be able to talk to people and you still need to be able to look over a medication list and you still need to be able to see people post-op and follow up with them. You still need to have some longitudinal learning even if you want to be a specialist. And I think it gives you the foundation. I think you need to do longitudinal learning to give you the foundation to be a good specialist. But I think it's definitely maybe a little bit harder. I still don't feel like I'm

ready to be a doctor [laughs] I think, the more I learn, like I said earlier, the more I realize I have to learn and it almost makes me more nervous to think about the end that if you do family medicine, in three and a half years you'd be working. It's a bit overwhelming to think that in three and a half years we'll have enough knowledge to be autonomous. But I do think we need CCC here for sure to develop. I think it's a very important year and we need it because otherwise I just don't know when, at some day you have to be set free, at some point you have to be set free and I think it's a gradual process. I think third year sets you up for fourth year and I think if we didn't have this time to integrate slowly into these different areas of medicines, I think fourth year would be a real wake up call. [MS4-during]

It seemed that the participants felt the physicians they worked with endorsed the CCC model. This was significant since very few practising physicians completed their medical training at medical schools with longitudinal integrated clerkships. The following participant was particularly satisfied by how the physicians he worked with expressed their admiration for the students undertaking the clerkship with parallel and longitudinal exposure to preceptors and clinical disciplines.

It's interesting working and talking with the physicians who trained twenty/thirty years ago and how different it was then. And how they look at our system and when they say "I wish it was like this when I was in school". It does feel good because sometimes you wonder if it's the right way to do things or if you're really going to learn things as well as somebody else did when they say well "you guys have it good. This is a really good system". I can see how there's value here, but I think it's interesting and it's hard for me to answer your question because I don't have much to compare it to other than just chit

chatting with students from other schools. But the idea of not doing rounds with twelve people I think that that's good because once I know the physician and I have a bit of confidence, I know what questions I want to ask and I can ask them in many different ways. Whereas if you're sixth in line in a big group of people sometimes it's hard to ask the questions. At some bigger institutions they have a little team of people that go around the floor and it's hard to say that that's the wrong way to do it because there's a lot of good things about that and that's the way it's traditionally been done so it works, but I like our style. I don't want to say it's more casual, but it's more comfortable. [MS5-during]

Many of the participants drew inferences about the unique aspects of the clerkship from discussions they had with peers and senior learners. In the quotation below, the participant revealed the advice she received from residents regarding how one can adapt to the longitudinal nature of the CCC.

Well, I think there's a lot of pros and a lot of cons. There's two residents that are here even and they just say, "eventually it all comes together really well, but it's really challenging at the beginning" and I think that's what I would agree with. There's parts of it that are starting to come together but in comparison to what you'd get in blocks which is what I was saying before is we don't really get a chance to just focus on one area and learn it really well and then move on to the next area and learn it really well. You kind of pick things up and scatter them together. So like we're slowly filling up that same checker board, but it's little pieces here and there. So, I'd like to see what it's going to feel like at the end of the year. Right now I still feel like I'm just so scatterbrained that nothing's

sticking. But supposedly it gets better. Supposedly [laughs]. So I haven't given up hope on it! [laughs] [MS9-during]

As a result of interspersed exposure to the various clinical disciplines, the participants felt the parallel exposure and longitudinal learning contributed tremendously to better knowledge retention. For example, this participant below described the benefits associated with the deliberate practice inherent to encountering common conditions throughout eight months.

I think it's a great way to learn. I think the way it's set up it lets you go over and over and over different problems and you see them throughout the entire year. Whereas in other places they have I mean your core rotations and say you do family medicine for a month and then you don't do it again for quite some time, there's not a lot of consistency whereas with the longitudinal learning it's very consistent over the entire year. You still get lots of exposure to specialties and lots of time to get in and see these other things but I think before we get into specialties and we focus in more we need to learn the basics. I mean family medicine is, it's everything, you truly see everything through family medicine. Whereas if you just stick to surgery you're going to see ten gall bladder removals in a day and that's your day, whereas you may see one or two people coming through the office with that kind of complaint, but you're going to see people come through with very generalized complaints of fatigue and weakness and then you have to do that whole work up and things like that. It allows you to see so many different things, over and over and over again throughout the entire year without big interruptions in that kind of learning. I think that worked fantastically for me because that's just the way I learn by practice, practice, practice, and having the ability to spend eight straight months doing this and seeing these things over and over and over again allowing me to formulate

my lists of questions and my lists of symptoms and treatments and physical exams and things like that allowed me to be more time efficient and be more comfortable with these different problems. No I think the way the program is structured just lends itself learning and retaining the information rather than learning it for an exam and then sort of dumping all that information out. [MS7-post]

“To actually follow a patient through” – Continuity with patients. One of the most important advantages the participants reported was the continuity with patients. Continuity with patients entailed opportunities when the participants were able to follow patients over time throughout all of their healthcare needs. Many of the participants described following patients with either a chronic disease or acute problem longitudinally, and how they gained insight into medicine and continuity of care as a result. The following participant discussed the benefits to developing clinical and patient management skills as a result of following patients over time.

Well I think I get to see the big picture. For instance, somebody came into the emerge and needed to go to the OR, so I followed the patient to the OR and then we took out, we resected a bowel and the specimen went to pathology, so I went to pathology and I looked under the microscope. And that really I think is an excellent way to learn. That sort of on-site, at the moment, I think that’s a real great way to learn so from that perspective for the learner, continuity of care is excellent. Plus the patient, I mean you develop a relationship over time they get to know you, you get to know them, there’s that trust that gets built in, and I think it’s good and positive. Through the varied specialties, I think it is unique to the CCC model. I think that most of the times in other medical schools things are a little more fragmented. You do a core rotation here, you do a core rotation there, but to actually follow a patient through while they come in with their rectal bleeding and they go to the

OR because they've got a mass and you have to remove part of their colon and to go to pathology to look, I mean, that's concrete learning. I mean how are you going to forget that? You know, I think you retain that better. I think it means more because you see the patient so I think that, that's pretty fantastic learning. I have complete faith in the process.

[MS2-during]

“It's been hard on all of us” – Contextual challenges. The participants expressed some of the challenges they experienced such as feelings of isolation as a result of the physical displacement. Isolation was magnified as an adaptation concern when students were relocated to less accessible locations away from their existing social support resources, particularly those with families as described in the quotation below.

What makes me not feel so comfortable is having to leave my family for eight months. My son in May stood staring at me one night when I was putting him to bed. I was like what's the matter he goes “I'm really going to miss you next year”. So I get that those sorts of painful pangs. But it's only eight months [laughter]. So the number one is family and leaving my family and the kids are not going to have their, a mother [emphasis] around as much as I'd like to be around for the next eight months. I know that I'll be fine.

My issues are family and finances. [MS2-pre]

Many of the participants shared similar feelings of loneliness after they relocated to a new region, and away from family and friends. The following participant revealed that although she was very busy, she did feel lonely when things were quiet at home.

I find it lonely a lot of the times actually. I chose to live alone, all of the students are living alone, none of us are living together. Everybody had said they had roommates in the past and were ready to live alone. Which is ok, I prefer to live alone. I am happy I

made that decision and most days I don't notice it. I will be here until five o'clock, then I will go to the gym then it will be like seven o'clock by the time I get home, I'll eat then I have reading to do then I just fall asleep because I am so tired at the end of the day. So most of the times I don't notice it but sometimes I go home and it's really quiet here and it's lonely. [MS6-during]

After all, they are moving away from established relationships, and developing friendships can present as a challenge, especially during immediate post-relocation adjustment.

Well I notice that it's been hard on all of us who are here. Feeling a little bit isolated from our home campus because we really are sort of ripped out of our lives and transplanted here. And you don't know anybody. But that's so different depending on each person, right? The people that are from [home campus] are having the hardest time. They're the people that didn't have to leave until now. So, it's hard to leave a place only to be in the new place for eight months and then go back. I find myself, like I've made a few friends here. I think I'm having a pretty good time because I kind of feel the urge to stay here [laughs]. Yeah. Maybe that will change by the time the eight months are over, I don't know. [MS8-during]

Influence on career path. The participants in the present study emphasized the increasing prevalence of thinking about their career trajectory throughout their clerkship. For example, this participant revealed the significance of deciding on her career path at this juncture of her medical education.

I think that's a big stressor right now at this point, some people are thinking about it a lot, other people aren't. Some people think they know, other people have no idea, and everybody asks you. When you're in the hospital, I don't know there's a lot of pressure to

come up with an answer [laughter] Well the right answer, but just an answer and I hate that actually because sometimes I say to people, well I don't want to answer people because if I give you an answer "oh I'm definitely going into family medicine" or "I'm thinking psychiatry" but then in my mind based on their response it will either reinforce my answer or deter me unfortunately. I don't know everyone has their opinion right, everyone gives it, a lot of people give it, so I don't want to be unduly influenced so [laughter]. I try to be, most of the time I just end up giving the truth which is not, which is basically say that I don't know. [sounds of the waves from the lake flowing into the shoreline in the background] [MS8-pre]

Another participant expressed the benefits and pitfalls of how the plethora of clinical opportunities and exposure to various specialities influenced his forthcoming electives and prospective career choice.

I think it's that you just want to totally throw yourself into everything that's going on here, but then you also have to worry about what's happening in the next step of your life. So like it's so easy to be engrossed with what's happening in the hospital and being involved in. The surgeons or the ER docs or the obstetricians they just want you to come and hang out with them but because they, so it's so easy to want to get in there all the time but we also have to have our NOSM assignments. And we've just recently been assigned our streams for next year, so the way our sort of our blocks that we have to open up for electives but we also have to be filling out applications and applying to different universities. You have to take the time to sit back and do that, which in itself is kind of an adjustment because you just want to put that stuff aside for the year and just focus on clinical medicine and get as much out of this experience as you can but you have to

remember that there's next year and after that there's residency. So there are all these little things that kind of nag [laughs] at you. Yeah that's the only other thing that has been a learning curve or is something that having to adapt to is this sort of switch gears and go into trying to apply to this elective. Then trying to think of what the heck you want to do when you're done. That's always the big question people patients asking "oh so what kind of doctor do you want to be?" "No idea". I mean, I don't know. I have no like, it's hard to think about but it's good being here and seeing the different specialties that they have in this institution and talking to those doctors. There's nobody telling you how you should apply for these things and actually some of the fourth year students took it upon themselves to organize a few sessions to talk about that very problem, like how do you, you know in the clerkship, how do you go about doing it because they're taking it upon themselves to act as a support network. There's no help from the institutions really it's sort of a personal thing, and that's probably for the better because then it's more natural and you really end up where you want to end up hopefully. [MS5-during]

While stereotypically uninviting, the interest in family medicine was further galvanized and legitimized as an opportunity to assume other clinical responsibilities in the community. For example, one participant underscored the different clinical disciplines a rural family physician can become proficient in.

Well for me family is what I'm going to do. It just reiterates that doors are open and as a family doctor really I could machete my own path and be just fine. It just demonstrates the breadth of what I can do as a family doc. I think it's limitless. If you go into something like ob-gyn you are doing ob-gyn. If you do anesthesia, you're doing anesthesia. But as a family doc, you can dabble in all those. So I think it's really varied

and it's hard to be bored. I think it's going to be exciting. I guess it solidified, "Yes, this is what you want to do, family medicine" because it's really not narrow, it's varied. I'm the kind of person, I've known what I've wanted since I was four. When I, my mother's sister, my aunt was six weeks pre, she was 34 weeks pregnant and was in labour so I watched my cousin being born in the back seat of car so I was four so at that moment I said, "I want to be a doctor and I want to deliver babies". So I've known what I've wanted to do for a long time. So, did it influence? I mean it did influence me but it didn't change. I've always wanted family medicine with obstetrics. And here we are several years later and I still want that but it's still influenced in that you know the variation, the breadth you won't be bored. It just validated I guess, is the better term. As opposed to influenced, I think it just validated, "Yes, this is what I want to do". I guess the whole concept of family doctors running the system has had, made an impact on me. So I think that's probably had a positive impact on me, which was to validate again, "family medicine is not boring, it is not limiting" because people often think that. Specialists will often poo-poo family medicine. Well I don't, I think it's pretty fantastic. [MS2-post]

The following participant echoed the view shared by the previous participant and others, and expanded on the point that her career choice in family medicine was solidified as a result of CCC. She also shared what many others felt in terms of developing other interests regarding the additional responsibilities physicians can assume such as in emergency medicine or obstetrics.

I think it maybe solidified my decision a little bit more. Although I've really enjoyed my time spent in emerge here so I'm considering doing some emerge as a family doctor whereas I hadn't really known that that was an interest of mine until I came here. You see everything in emerge, all the really sick patients go to emerge so you see everything like

your traumas, your heart attacks, your strokes, your fractures, drownings, and poisonings. If somebody's going into the health care system they get in through emerge, right? Like if you're admitted to hospital, everybody goes through emerge. So you see so much, and you learn so much. And you're always trying to figure out what's going on. Whereas when you're following along the patient on the medical floor like as a family doctor let's say one of your patients get admitted with pancreatitis and you see them every day and you follow them along. They have pancreatitis, the management plan doesn't really change and you have already figured out "okay they have pancreatitis" and it sort of gets boring after a while. By the fourth day they're getting better and you're happy they're getting better but in emerge you would only see them once, you'd admit them to the hospital and then you'd move on to the next thing and you'd try to figure out the next thing. So it's really interesting because it's always something different. [MS6-post]

One sees in the quotation below the active role the participant played in the pursuit of additional learning opportunities that aligned most with her career choice. She also revealed that obstetrics was one area she particularly enjoyed and that she was now considering family medicine and obstetrics for future practice.

Well prior to starting CCC, when I started medical school I had a pretty certain idea that I wanted to do family practice. I was thinking well the only things that could persuade me otherwise were maybe pediatrics or obstetrics. So that's where I started with my electives in first year and ruled out pediatrics and thought "well I don't know about obstetrics. And I don't know if I want that lifestyle". And so applying to CCC I really wanted to work with some family docs who did family practice plus obstetrics and did rural practice and had obstetrics as part of their practice. So that was a big part of being in [community A]

for me because I knew from previous students that there was exposure there if you wanted it. So that was a big part of the reason, one of the reasons why I wanted to be in [community A]. It definitely was strategic on my part and that was an exposure I was looking for. In terms of future practice choices, I think I would say yes, it definitely has influenced me. I was leaning towards family practice with some obstetrics and what I really wanted out of third year was to know if it was manageable for me, if I could handle that lifestyle or if I was comfortable with it. And so I really got a good taste of it. I was on call three weeks out of the month for obstetrics and had some middle of the night deliveries and all that other stuff. Some long labours and some short, and some that went to C-section and in general a little bit of everything. And it was great exposure and I really enjoyed it. It very much convinced me that I would be capable of doing that kind of practice. [MS12-post]

Summary – Comprehensive Community Clerkship

In this chapter, illustrated through the participants' narratives were the different aspects of the CCC they felt most significantly represented their experiences. For example, in terms of what influenced the participants' decision-making in ranking their community site selections, there was a wide range of motivations including the proximity to home and geographical location, as well as the frequency of rotations with preceptors in the community. In addition, according to the participants, there were several factors which collectively contributed to the perceived variability between the clerkship experiences. In particular, the differences and similarities regarding exposure to clinical procedures and specialities and the availability of healthcare services influenced how the clerkship was experienced. Also, the participants highlighted the unique aspects of the parallel and longitudinal exposure and emphasized on the strong influence the CCC

had on their career trajectory and eventual place of practice. As mentioned, medical learners' place of learning or exposure to the rural practice environment during medical training has a strong influence on their eventual place of practice (Canadian Medical Association, 2000; Nichols, Worley, Toms, & Johnston-Smith, 2004; Ranmuthugala, Humphreys, Solarsh, Walters, Worley, Wakerman et al., 2007; Tesson, Hudson, Strasser, & Hunt, 2009; Walters & Worley, 2006). In the next chapter, I will discuss the key theme, training in home or familiar community.

CHAPTER SIX

RESULTS AND DISCUSSION:

TRAINING IN HOME OR FAMILIAR COMMUNITY

As previously outlined, the community site selection process is comprised of an algorithm. However, the majority of medical students at the NOSM are from Northern Ontario, consistently above 90% of the class each year. Therefore, a plausible scenario for many students is returning to one's home community to undertake the clerkship. There is a dearth of literature on the subject of returning to one's hometown for a longitudinal clinical clerkship. In fact, a search of PubMed and Google Scholar rendered no relevant matches for terms related to undergraduate medical training in one's hometown. However, as mentioned, there is a wide range of research focusing on the influence of medical training on eventual place of practice.

The topic of training in one's home community is extremely pertinent when relating it to one of the previous participant's views regarding undertaking the CCC in their hometown with hopes to eventually set up their practice there. In this chapter, I provide examples of the issues related to returning to one's home community for a longitudinal clerkship. Such a representation is more likely to provide significant meaning for preceptors and students who readily identify with the participants' perspectives to effectively understand the issues surrounding this topic. In terms of contributing to the empirical research examining the issues around NOSM students undertaking their clerkship in their hometown, it is particularly helpful that at least two participants returned to their hometown communities and two others to communities with close ties to their families or near to their hometowns. The sub-themes that were described by the participants were: (a) "it takes a lot of stress away" – benefits of training in one's hometown, (b)

“I have to maintain confidentiality” – personal and ethical considerations, (c) “this would have been more difficult if you were a difficult student” – concerns with evaluation, and (d) “happy to see somebody they knew who spoke French” – links with the NOSM’s social accountability mandate. Each sub-theme will be discussed in turn.

“It takes a lot of stress away” – Benefits of training in one’s hometown. As it pertains to the benefits of training in one’s hometown or a familiar community, the participants discussed their familiarity with both the community and the various clinical settings. For example, directly below one sees how returning to one’s home community reduced the challenges for the participant in terms of orienting herself to the community. In addition, she described the established relationships with many clinicians as a result of her previous role as a healthcare professional in the community.

I’m excited because I’m coming to my home community for my CCC so for me it’s great because I’m doing the opposite as everybody else. Most students in my class are leaving home for CCC, I’m coming home for CCC. So I’m very excited, I think it’ll be a great change. Absolutely, just the fact that I’m familiar with the community. I used to be a [healthcare professional] so I’m familiar with the hospital that’s here because I worked, I was employed there. And just being familiar with a lot of the physicians that work here because of my previous profession and working and interacting with the nurses and that sort of thing. And just knowing the city, knowing what’s happening in the city and that sort of thing. I guess I really think it’s advantageous to go back to your home community.

[MS4-pre]

Another benefit the participants discussed was the built-in support network and how helpful it was with removing some of the angst of undertaking CCC. The support network comprised of

individuals who were seen as helpful resources in the community throughout clerkship such as parents and significant others. This participant described moving in with her parents and the support she received *in situ*.

I also happen to be from [community A] and both my parents, well my parents live in [community A] so I'll just be moving in with them. So I still have a major support system. I know a lot about the town, I know a lot of people in the town so to me CCC isn't that daunting. The scary part of moving away for eight months isn't so big for me because it's a very familiar place and I'm moving in with my family. [MS11-pre]

The following participant expanded on the benefits of undertaking CCC in a familiar community. Specifically, she described how much more comfortable it made her feel since it removed the angst of familiarizing herself with a new community. She also shared the benefit of having recently completed a placement in a nearby community, thus she had established relationships with some clinicians.

My mom actually grew up here [community A] so even though I'm from [community B], where I grew up, my mom grew up here so I spent a lot of time in [community A] as a child with my grandparents for summer vacation. It's nice to have that family tie here. Nobody is here anymore but there's some familiarity and it's a little bit nostalgic for me too so it's actually really a nice perk to be here because it just feels very familiar in that way. Absolutely, because not everything is brand new, I have felt more comfortable right from the start because I just have that extra bit of knowledge already. I know where the grocery store is, and I know where the main street is. I also did one of my placements in second year in [community C] which is just 20 minutes away. It falls under the same healthcare umbrella so I had a tour of the hospital here last fall and I met the recruiter, and

the head of the hospital - the CEO. I had a nice introduction at that point so it feels really comfortable now. I don't feel like I am walking into a whole new environment because I've seen a lot of this stuff and met a number of these people already just because I've had those experiences previously. That does feel unique to me in terms of being comfortable in the community from the start of placement. Coming from my academic background, I would say this is one of the few times I've felt comfortable in medical school [laughter] so yeah I feel very lucky that I was able to come to this community. [MS12-pre]

This participant expressed how her familiarity with the regional and clinical contexts allowed her to focus more on academic and clinical responsibilities, as well as spend time with family and friends.

So the lucky thing for me is I worked on these floors as a [healthcare professional] so I was here for about almost four and a half almost five years as a [healthcare professional], so I worked all the floors, which is really nice as a student because they all know me and I know the process so it's not new finding stuff and that sort of thing. I'm very fortunate from that perspective. The fortunate thing for me, I didn't have to adjust to the city and I didn't have to adjust to the hospital because I knew where everything was. I knew most of the nurses and most of the physicians from being here. The biggest adjustment for me was workload. How much time do you spend on VAR versus looking stuff up for clinic the next day versus going to the gym and exercising, spending time with my husband, my family, and friends? Whereas some of the other students I think it was adjustment to workload, hospital, city, it's very different. So I'm fortunate from that perspective. [MS4-during]

The same participant expanded upon her view in relation to the additional expectations she perceived the physicians in the community had of her as a result of having previously worked alongside them in the community as a healthcare professional. She described the challenges associated with the added pressure she observed from physicians who seemed to expect her to outperform her peers.

I was very nervous initially because I'm going from a situation where these people were my peers, right, where I worked with them and we shared patients, to them now being my preceptor where they have to evaluate me. It definitely was a different dynamic. It was what I anticipated though if that makes sense. It's a different dynamic of course. I'm now a student, but I also think sometimes they had bigger expectations of me because they knew me. I was a [healthcare professional] before so they did expect me to understand the workings of the hospital and they did expect me to know how to approach a nurse and they expected me to know how to get a hold of the sleep lab. They expected me to know how to get a hold of the pathologist, or how to call a doctor on hospitalist. They had these expectations of me, which I was okay with but sometimes you think they didn't have those expectations of my other classmates. Right? So it was hard sometimes because they would say "well you know how to do that just go do it", and sometimes I didn't but part of me thought "oh do I admit I don't know how to do it?" So that was hard. [MS4-post]

The participants felt the patients they encountered offered positive attitudes toward them when the participants would share with them that they were from that community. In the quotation below, the participant revealed the noticeable differences she observed between the patient interactions she experienced and others'. She underscored how once a patient knew the student was from their community, the next question pertained to their eventual place of practice.

Coincidentally, mid-response, the brewmaster at the coffee shop interjected and asked her if she was planning on returning, which provided for a great - unanticipated moment during the interview.

One thing that comes to mind is the influence of being a local girl on my experience as a clinician here. Everybody always asks you, all of your patients will ask you, “well where are you from?” and I’ll say, “well [nearby community]” and “oh! Isn’t that great, you’re right in your own back yard”. And they seem, I mean your location, your geography shouldn’t matter but it totally does. They seem more content for you to practice on them knowing that you’re a local girl. I mean you can do almost any, like, “Hi! I’m going to do surgery on you” “well that’s okay, you’re from [nearby community]” like there’s this kind of attitude where somehow it makes a difference. I don’t know if students coming from other schools will experience a different attitude from patients and I don’t mean attitude like, “Oh! He just gave me attitude” but like just a different approach from patients not being from their own geography. It would be interesting to see what their experiences are because it shouldn’t matter but you can see how much they warm up to me versus even other students who are from further away. They seem to prefer the local girl, like there’s more pride there I think in the patients, like “wow, isn’t that nice that we are training one of our own”. And the school is meant for that, you know? But it’s just interesting to see this geography component to our patient interactions and how much it plays a difference with patient interaction. Everybody always asks the two questions, “Where are you from?” and once you tell them, “Well, are you coming back?” Those are the two questions you’ll hear on a daily basis coming from this area. [Interaction with

brewmaster at the coffee shop asking student if they will return to community]. [MS10-during]

The following participant summarized the benefits of returning to her home community in terms of her eventual place of practice. As expressed by the others, she highlighted the reduced stress of adjusting to a new community and finding places like the grocery store. She emphasized the benefit of the established relationships with physicians and how helpful it was when she needed to find a preceptor to work with.

Being in my home community? I think that has a huge advantage. I think that helps a lot just because you don't have the stress of "where the heck am I in this city?" where to find stuff and not only that but people already know us. That makes it less strange. I don't even know how to describe it because you feel at home, you feel way more at home than if you were put in some random community up in Northern Ontario where you've never been before in your life. So I think it that has a huge impact on how I feel about CCC, and my mental health [laughs]. I guess knowing the doctors, having past relationships with some of the doctors is very helpful. That opens doors for me so when I first showed up I didn't have a physician because you're assigned to physicians that you're supposed to follow through. I had one physician who could only take me two half days a week. So I was kind of left in the lurch and so I just called up a family physician that I knew, that I've known all my life and I said "listen, I'm in a bind and they can't find me anybody. Can you take me?" and he he's taken me on. So it's very helpful that people do you favours because you know them. If I'd gone somewhere else, I wouldn't have been able to do that and I would have been skipping around a bunch of physicians over and over and never getting really the follow through with one physician with their patients. So I guess

that has a big impact, people knowing you and being able to ask things of people because of the relationship you have with them. Yes or seeing people you know [laughs] or relatives [laughs]. This is Northern Ontario and this is where I'm from and where I'm going to stay so to me that's not an issue and I kind of like it. [MS11-during]

There were also interpersonal aspects discussed in relation to returning to one's hometown in a different professional capacity. For example, the following participant expressively described many of the nuances she had to manage in her role as a medical student versus in her previous role as a healthcare professional in the community.

I was still very respectful. As a [healthcare professional] I never called them Dr. So and So, I called them by their name, right, because it was in equality. But as a student, coming back to the community, I ensured that I called everybody doctor, if it was [preceptor's name], I called her [Dr. X], where as previously I would have said [first name] as a [healthcare professional]. She was my peer, co-worker then. I think that's important is to remember that you are a student although you may know these people. The other thing is to remember that yes, you're important to the community but the community is important to you. You need them just as much as they need you. So it's very easy, I can see how people can fall into that trap thinking well I'm here as a medical student and it's sort of a superiority complex that can happen but you need the community and people have to respect you. If you want to be successful as a medical student, I think that's a really important perspective because coming back to your home community where people know you, you could very easily fall into that trap that "oh now I'm a medical student so, I have a different role". I would say go for it. Although I was anxious the nice thing was I was nervous because I felt like I had to sort of be this perfect student because I was amongst

people who knew me but on the other hand they knew me. They know my personality, they know I talk too much. They know what type of worker I am. They've worked with me, they know I like to joke around. So from that perspective I wasn't having to meet new people, because I think that's part of the difficulty with CCC is you're meeting a group of preceptors and health care professionals who have no clue who you are and it's almost like you have this period of time where you have to grow and get to know each other and you're afraid, "okay if I say this will they judge me? If I don't say this?" So going back to your home community it alleviated all that. I felt very comfortable because they knew who I was and what type of person I was. All I had to do was be a good medical student, right? And people knew my work ethic, they knew I was a moral person, an ethical person, whereas I can't imagine honestly going, if I ended up let's say in [community], and nobody knowing who I was and having to develop those relationships. To me that's a lot of work on top of all the work that we have, being afraid "oh did I say the wrong thing? Maybe I shouldn't have done that". It takes a lot of stress away [laughs]. And I actually thought the way the year was set up and I think people forget that it's longitudinal learning because sometimes it's overwhelming. You might have a week of peds, and then the next week you're doing SESs [Specialty Enhancement Sessions] with ENT [Ears, Nose, and Throat] and then you may have an SES with the dietitian and then a couple days in the office. So you're really jumping all over the place and initially that's overwhelming too. I was lucky because I knew the hospital. So, as a new student you're jumping all over the place. And that's the other bonus about going back to your home community, you know where, how to get everywhere, you don't have to figure out directions, you know your way around the hospital. [MS4-post]

“I have to maintain confidentiality” – Personal and ethical considerations. The participants shared how they managed the issues surrounding the personal and ethical considerations regarding interactions with individuals in the community. For example, this participant described the importance of maintaining confidentiality when encountering patients she knew in the community.

Here I’ll take you downstairs. We’ll keep walking you can ask me questions though. Well I was worried wondering oh like if I see people I know, things like confidentiality, you know I have to be confidential with everything, even if it’s my neighbour. Not that I was worried about that, I was more worried that would my neighbour realize that I have to maintain confidentiality. I know I have to, but I think some people worry “oh my goodness she’s my neighbour, is she going to tell somebody?” “is she going to tell somebody that she saw me?” When I know I can’t, but I worry more about my, people who know me knowing that I need to maintain confidentiality. That’s more worrisome to me because I know I can do my part. [MS4-during]

Another participant described how she resolved, with her preceptors, the potential conflicts of interest with patients. Examples of conflicts of interest included recognizing a patient from high school, especially when the nature of the encounter was intimately personal.

It’s like any other interactions with patients, if I know them or not. It was interesting when it was somebody that I have some connection with, a patient. I just found it very interesting, if it was somebody I wasn’t comfortable with and I would just tell my preceptor “I don’t think I should be doing this. I have personal conflicts” so you just move on, you go to the next patient. Your facilitator takes on. That’s how it gets resolved. If you or the patient isn’t comfortable well then fine you just move on and the facilitator

takes on because ultimately you're not responsible for this patient, right? The facilitator is, he's their doctor. [MS11-post]

“This would have been more difficult if you were a difficult student” – Concerns with evaluation. Concerns with evaluation and assessment related mostly to working alongside preceptors the participants had previously worked with in a different professional capacity. The following participant eloquently explained the nuances associated with the evaluation process for both the student and the preceptor, which were concerns she had shared in the two previous interviews.

I was very comfortable with our evaluation process. I thought the preceptors would be more uncomfortable with it but they were fine and it was interesting what they had said to me was, “you know, [participant’s name] this would have been more difficult if you were a difficult student, if you were a student who was having issues. If there was a personality conflict with you, it would be much more difficult”. I wasn’t a difficult student so really evaluation was just typical, right? Whereas I agree if I was a student who I was running into conflict all the time, I wasn’t meeting school expectations, I wasn’t participating in group stuff, I wasn’t showing up, I wasn’t being punctual, that would have been very hard for them because they’re evaluating a peer based on these negative attributes. [MS4-post]

“Happy to see somebody they knew who spoke French” – Links with the NOSM’s social accountability mandate. The purpose of the NOSM’s social accountability mandate is to recruit individuals from the northern and rural regions, and to train them in Northern Ontario to meet the healthcare needs of population. In relation to the NOSM’s social accountability mandate, one of the participants shared the importance of being able to interact in French with

patients in her community. This skill was particularly helpful for patient-centred care as patients were able to discuss their health concerns in their first language.

People think that maybe it feels weird to be talking on a medical personal level with somebody and I didn't think at all. I really like those kinds of interactions with people and most of them were so open. First of all they were just so happy to see somebody they knew but secondly they were so happy to see somebody they knew who spoke French which is a big asset in our community. And then they were just proud that they knew somebody who's going to be a doctor and who's possibly going to come back and of course everybody says "oh you're going to come back, you're going to be my doctor" too.
[MS11-during]

Consistent with the NOSM's social accountability mandate, medical students from Northern Ontario aspire to practice in Northern Ontario (Strasser, Hogenbirk, Minore, Marsh, Berry, McCready et al., 2013). There is evidence to suggest that students who complete their clerkship in their hometown are likely to experience fewer challenges and demands in relation to integration in the community, and are likely to want to return for postgraduate education and eventual practice.

Summary – Training in home or familiar community

In this chapter, I used the narratives from two participants who returned to their hometown communities and two who undertook their clerkship in a community near to their hometowns. Although there were few participants who did their clerkship in their hometown, they described their experience regarding the benefits and challenges of completing undergraduate medical training in one's hometown. For example, the participants raised the issues involved with the personal and ethical considerations and the subsequent adaptive

strategies they developed in order to maintain patient confidentiality and resolve any potential conflicts. They also expressed their concerns with being evaluated by preceptors whom they had worked with in another professional capacity. Specifically, they described their experiences adapting to these situations. The participants' experiences are particularly useful for future learners who may have similar fears and anxieties associated with returning to their hometown for undergraduate medical training. As I conveyed at the beginning of this chapter, there is limited literature on the topic of medical training in one's hometown. Not only does this study provide a snapshot of the students' experiences, it does so from their perspectives. In the next chapter, I will elaborate on the next key theme, relationships.

CHAPTER SEVEN

RESULTS AND DISCUSSION:

RELATIONSHIPS

All third-year students at the NOSM are required to undertake the CCC in the context of rural family practice, where they are exposed to various primary care models and healthcare teams. The participants described developing relationships with a wide range of individuals who contributed to enhancing their experience during the CCC. The key relationships described by the participants were: (a) preceptors, (b) peers, (c) family, (d) administrative and clinical coordinators, (e) healthcare professionals, (f) NOSM, and (g) the broader clerkship communities, each with sub-themes.

Preceptors. Preceptors referred to the practising physicians who taught, supervised, evaluated, and assessed the medical students' academic and clinical performance. Part of the clinical clerkship experience requires students to learn from, and with, a wide number of physician preceptors. The sub-themes that were identified by the participants in terms of the physician-student relationship were: (a) "we're doing an apprenticeship basically under them" – the physician-student dynamics, (b) "the tricks of the trade and the clinical pearls" – physicians as teachers, (c) "the kind of physician I want to be" – physicians as role models, and (d) "constructive criticism went a long way" – evaluation feedback. Each sub-theme will be discussed in turn.

"We're doing an apprenticeship basically under them"– Physician-student dynamics.

As previously discussed, the physician to student ratio is much more favourable for students in Northern Ontario than in larger urban clinical settings since there are fewer residents and other

learners on hand. In fact, the participants in the present study felt valued and supported throughout their experiences. The participants lauded how the quality of the rural and northern experience is enhanced throughout the year as a result of a demonstrated adaptation and increased confidence and competence in developing relationships with preceptors.

It's not entrusting because they're not trusting that you're going to do a good job because they always double check triple check on what you do. I can use the example of the internist that we work with, he gives you the illusion that you have a lot of responsibility but then you realize that he's already seen the patient, he's already done all his investigations he wants to do. He wants to see how you're going to handle it. And that's probably because his job is a lot more delicate and things can't really be messed up. But in primary care they do say "go see those patients" and you're always going to catch back up and it's not such an acute setting. So you get more freedom, but they're not really entrusting you. They expect that you know certain things and if you show them that you know it then they expect that you're going to continue to know those things and be able to do that, and if you show them. If you miss something on auscultation then they'll know, "okay well now I got to make sure that I'm teaching him properly how to do this so he doesn't miss it again." So yeah it's good, they're still the primary point of care we're just slowly building up with them. And same thing in the ER like I said you can go see the not too urgent patients and then as soon, they trust in you that if something doesn't seem right or if something just doesn't seem to add up right that we're going to come back right away and say "look, you need to go see that person because something's making me feel uncomfortable", which is expected of us. You know, "yeah you can go see that patient but if you're worried, if some red flag comes up or you don't know what's happening, you

need to come get us”. I think we’ve all done that pretty well. This one physician was really great as well. He had not only myself but the two other students over to his house for dinner on Tuesday night just sort of a Christmas celebration. They’re making the effort to get to know you outside of the clinic. And even hockey and soccer. I played soccer with the surgeons last night, tonight I’ll go play hockey with a group of doctors from all over so it’s really good that way to sort of get to know them outside of this. Which is cool because sometimes it’s really intimidating to see sort of the people in their professional roles, but when you see them outside of that, you’re more comfortable approaching them afterwards to ask them a question or saying “you know what, I don’t understand this, I think you could explain it to me in a different way”. Whereas before if, that door never really was open. [MS5-during]

The same participant expanded on the subject and described how, through his interactions with preceptors, he was able to learn more about a physician’s role as a healthcare professional and other aspects of a physician’s life such as being family-oriented, engaging in physical activity, and assuming different clinical roles and responsibilities in the community.

It’s nice to see, I mean aside from teaching you how to practice good medicine, which was the main objective, you get to know them as individuals and you get to see how they are successful in their lives in terms of successful physicians but happy and satisfied with their role. Like as a student, when you’re trying to figure out where you’re going to fit in all this picture and what role you want to have in the medical community it’s nice to have a selection of people, whether it be an emergency doctor, obstetrician, a radiologist to ask “what do you do? What is your role? How do you work with your peers? How are things outside of work? Where do you see yourself? How did you get where you were?” Being a

young learner in third year and in fourth year but mostly in third year it's the first time you really get to talk to these people and they get to know you over the course of eight months. So you can actually have a real conversation so not artificial sort of "hey" "how are you? Good to meet you", I'm never going to talk to you again whereas you see them every day for eight months, you actually get a feel for each other and you can have useful and productive conversations about those items. Well I think as colleagues as well in the future I could see myself calling on them for favours, not necessarily favours but guidance and support. I don't really know sort of how to interpret something or what the next steps are and they've all extended those offers saying hey when you're in practice, let's keep in touch and they've said in the past, former students sent them emails saying "I'm not really sure what to do here" or called them on the phone because they're a point of support. So part of that is keeping the communication lines open but at the same time, I think medical colleagues are known to be open to communication and support with each other. They're obviously first point to contact for certain things. I mean they're friends. I enjoyed my time in my community, hoping to set up an elective there, partly for medical reasons, but I enjoyed the community. I just enjoyed being there so I think that they were a big part of that. [MS5-post]

By the end of clerkship, it seemed as though the participants felt as less of a burden on the physician with an already busy practice. For example, the following participant revealed the maturation of the physician-student dynamics in terms of the mutual trust developed over time.

In certain areas I see that perhaps there was a bit of a decrease or a bit less of worry on the part of the physician. I already mentioned the ER where by the end of the year they would be very confident with my decision making. And they were fairly big decisions, "I am

admitting this patient for the following reason”, “alright” [laughs]. At the beginning of the year, they would cross examine you as to why you think so. So I think as we did progress clinically, we were less of a burden time wise in certain fast pace environments. However, the physicians are still ultimately responsible for everything we do, so really that burden does not go away. Their perception of where we’re at, it’s very much a trust based system where we’re doing an apprenticeship basically under them. They need to trust that we’re doing an adequate job. So I think you need to demonstrate as a student, you need to demonstrate everyday how serious you are about learning. And how serious you are about the work that you’re doing presently and to show them that basically to inspire confidence in them that, “yes this is what I’m thinking now please correct me if I’m wrong” and I always left that door open because they do have to sign for our admission. I think communication was very important in diminishing their sense of our burden because it was still up to us to communicate our findings and to communicate our thoughts as we were more able to do so. I guess it facilitated the process time wise but ultimately they’re still watching over every move we do and it’s still quite a responsibility. [MS10-post]

“The tricks of the trade and the clinical pearls” – Physicians as teachers. Physicians as teachers referred to the influence the preceptors had on the participants through their willingness to spend time teaching key concepts. In the quotation below, the participant described developing adaptive strategies regarding clinical approaches by observing his preceptors.

So being able to get that opportunity to bounce ideas off your preceptor as well as observe them do certain things. I’ve worked with a few preceptors and they’ve told me ways that they remember and I’ll never forget it now. Just because it’s one of those things like for reflux all the bad things are the ‘enes’ right so anything that ends in ‘ene’ is going to be

bad for you if you have reflux. And so you can just think through things easy like that. Learning basically the tricks of the trade and the clinical pearls and the things that come from years of experience and that's what we hear a lot from our preceptors as well, "you're doing well, your diagnostic and treatment plans could be better but that comes with years of experience and you haven't had that experience yet right" so it's nice to get that the first hand and see things up close. [MS7-during]

The same participant described how he felt about the onus being on him to demonstrate his willingness to learn to the preceptors in order to get the most out of the learning opportunities. He emphasized the importance of taking advantage of, and seeking out, the learning opportunities with physicians with the collective knowledge to share and teach.

I personally feel that if you walk in there and you show your preceptors that you're keen on learning, that you throw yourself in a situation that you want to be there that you want to try everything, that you want to see the complicated patients that you want to do the complicated procedures, that they're going to be more willing to teach you and teach you the more complicated things, as well as give you those little tricks that they've developed from fifteen, twenty, twenty-five years practice. You're never going to find a textbook anywhere, and I think it just makes it a better environment because your preceptors are, I think they're more willing to teach people that show them they want to learn than somebody that comes in and just stands in the background. [MS7-post]

"The kind of physician I want to be" – Physicians as role models. Physician role modeling related to how physicians demonstrated academic leadership and taught by example. The role modeling from physician preceptors was crucial for clinical teaching and support. The

participants described the physician-student relationship as being uniquely helpful in deepening and broadening their perspective of medicine, thereby enabling positive role modeling.

One of the doctors, the female doctors I was talking about, she is really into breast health. Which is, so breast cancer but also breast feeding which they both involve breasts but they're not, they're pretty, on different ends of the life span. But anyway one day after work she said, "well I'm going to see a friend of a friend to give her some breast feeding counseling". So I went with her just so I could learn something about breast feeding. And she spent like an hour just talking to this woman about her baby's breast feeding habits and helping her latch and like [laughs] all this involved stuff. And I was very impressed by that too because it was very much above the call of duty. And she just did that because she knew that she could help the woman. She knew she had the knowledge. And I like how much variety there can be in the doctor's role. And I like doctors that like pushing the boundaries of the traditional doctor. [MS8-during]

Participants shared several examples of role modeling and how they developed the skills to appraise their experiences and adapt to the different preceptor styles. For example, in the quotation below one finds one particular sort of role modeling sought by this participant.

I like to experience different styles of practice. I like the idea of the old school doctor with all those years of experience, picking his brain and learning those really critical little things that could make life better for you. I liked the opportunity to have the different styles so then I could say, "okay I like that. I'm going to put that in my memory bank of how I want to be when I have my own practice. You get to pick and choose when you're formulating your own future practice. You can go "okay, that's terrific, okay that's no so

terrific, that's really great." And you can compile your own style by having experienced other peoples' styles. [MS2-post]

Another participant described what many others expressed in relation to adapting to the preceptors' different clinical and patient management approaches. In this quotation, she revealed that every physician had their own preferences in the management of patient care and the processes of adaptation she developed in response to the different styles.

Each one of those preceptors has a different expectation of what you should know or should do. So it could be tough, sometimes you just have to sort of swallow what you know because sometimes you might come across something with another preceptor who says you know "this is really the best way to do it, it's been proven over and over that you know this is the best way, it's in the literature" and then you work with somebody else and they say "well, you know personally I just don't think that works". And as a student it's hard to be in a position where you, to say "you're wrong" or "I don't agree with you" and I think this even carries through when you're working with a colleague. You would never, I wouldn't say you would never, but you would be hesitant to sort of call someone else out on their on their faults unless it was dangerous for a patient or for family or something like that. So it's interesting. So sometimes you just have to adapt and say "okay, this is what we are going to do for this time." And I can't say that their judgement doesn't come from like experience either. Some of the preceptors say "the literature says you're to swab someone's throat before you give them antibiotics for strep throat". So you swab their throat then you wait for the results and then if it's positive you call them and you say "okay come and get some antibiotics". But in reality it doesn't happen very often, right? If we look in the throat and it's all gunky and full of you know then they'll

say, “here are some antibiotics,” and they may or may not even take the swab. And so depending on your preferences and you’re judgment because one girl said, “I used to swab everybody and do that like they told us to and they would all come back positive and I would just end up calling all these patients back and it was more of a hassle so I just do it I just treat now”. So there’s like the academic medicine and then there’s like the practical medicine. [MS3-during]

The participants, without exception, discussed the physician role modeling derived from observing several physician-patient interactions. For example, the following participant described the invaluable longitudinal learning in relation to disease management and patient-centred care.

Okay, well I mean I get that there was a lot of people that just sort of conducted their office in a very sort of relaxed manor, where you just went in to see every patient and it was a very calm discussion. It was almost like we were giving more suggestions to the patients rather than telling them, this is what you need to do, things like that and getting a patient involved in their care, and making them sort of take responsibility for what’s going to happen next and setting up plans with them and things like that. So I think it really showed me that working with the patient to create a team and a partnership in their health is going to mean a better result. I mean I’ve seen people at the beginning of the year, like newly diagnosed diabetes, things like that, and their sugars were way out of control. They were starting to get high blood pressure and other things associated with diabetes, and I see them again by the end of the year they had started to lose weight, they had joined a gym, they’re eating better, they’re getting their sugars under control, that’s all because of just the way the relationship happened between the doctor and the patient. Just having more of a partnership rather than paternalistic relationship like it used to be,

so I think that's the kind of physician I want to be. And at the same time I don't want to be one that goes in and rushes through things. I want to give my patients time to explain to me or what's going on and have them feel comfortable talking to me, and I'm generating those plans and those treatments together with them. [MS7-post]

The following participant described another form of physician role modeling in terms of the healthcare advice provided to their patients. Specifically, she shared the positive influence one physician had on shaping her values and attitudes toward health promotion and disease prevention.

There is this doctor in [community] who is sort of more on the natural remedy side of things. He's very into physical activity, and is very into recommending vitamins and more alternative solutions. Somebody said to me, "oh I don't think you'll enjoy being with him because he is so much on that extreme" but I thought it was really great because he would tell all of his patients to exercise, even if they were someone with mental illness, which is like less accepted to somebody who has like heart disease. But somebody who has anxiety or something should be exercising half an hour a day, I really think that that would help them, so why not? He obviously thinks so, that's sort of his personal experience of it. It comes down to your actual intention towards the patient, and I can't fault a doctor who has the best intention for his patients, except if he's actually harming them. [MS8-post]

“Constructive criticism went a long way” – Evaluation feedback. Preceptors played an integral role in helping the participants overcome personal challenges by providing honest evaluation feedback and keeping tabs on their progress throughout the clerkship. One sees in the quotation below how crucial the feedback was for this participant in terms of helping her become aware of her strengths and weaknesses.

I think right at the end actually, we had a really good preceptor, really good and he did a lot of teaching and he wasn't afraid to tell it like it was, but in a in a good way. I guess kind of a fatherly role, but he would also tell you when you're out of line or when you're wrong, just straight up wrong. Or when your personality was getting in the way of work. He really he saw the personality of each individual in the group and would speak to everyone a little bit differently and there was no favouritism there. I never felt that it was more that he knew what people's strengths and challenges were and tried to a lot of them to work on their challenges more than show their strengths. When he knew you were strong in something he's like, "you can't answer this question." He already knows that you know the answer, he's like, "you can't answer that one, you need to answer ones you don't know". A couple times, I was upset with it, one time I was really upset with it but I think in hindsight after like thinking about it was helpful and I knew that. I knew it was helpful at the time to I just didn't really want to accept it because nobody likes to have their flaws shown or to be vulnerable. And I think as the time progressed and I knew what he was trying to accomplish, I was a little more willing to trust that. [MS1-post]

The following participant noted however that the timing of the evaluation feedback ought to be re-examined. Depending on the preceptor rotation schedule, when she received the feedback, it may no longer have had an impact on her ability to demonstrate progress. This participant felt it also had the potential to bias their entire experience.

I think it's slightly unfortunate that it is done basically right at the end of the year. I almost wish that that final evaluation was three weeks before the end of the year and then basically they have the right to adjust your evaluation kind of thing. So if you all of a sudden just start not showing up for clinic or this kind of stuff then sure you can be

penalized but really those last few weeks are for you to gain the experience in stuff that you didn't necessarily have the chance to see. Because I think having that evaluation right at the end can really make you leave on a sour note. And that way there too, I mean, we do them every quarter so you get your third quarter and they're supposed to give you things to work on 'til the end and so your final evaluation in the end has the opportunity to be this perfect evaluation because you worked on everything that you got in your third quarterly evaluation. I almost just wish that during that third quarterly evaluation they said, you know "as long as you do these things, your evaluation at the end is going to look like this." "If you don't do these things then, the week before or the last week I'm going to bring you in, we're going to have a chat, and so just keep doing what you're doing, you're doing really well, these are the three things, four things that I want you to work on. This is a copy of your final evaluation." Do you know what I mean? I just really feel that having, no one wants to give the students that spent a year there a negative evaluation. Well sure if you didn't show up to clinic, if you were rude or disrespectful or unprofessional like yeah, I mean those things need to be pointed out and stuff like that. I also feel like that's something that should be said on the third quarterly evaluation. You should know what's going to be on your final evaluation so that you can go through those last three weeks and if there's something that you really want changed, you have that opportunity to really say, "okay you need to watch me for this because this is not, this is going to be changed in these last three weeks." And sure you can make a little comment that "during the first part of the year, but she's made massive strides in the last quarter to do these things or these" or "if I look reflectively on the year, there were some times where this was a problem. Rest of the year, she was perfect." And I actually can't say that

I had a bad evaluation at the end of the year, I just don't like getting evaluations at the end. [MS9-post]

Another participant described the deliberate strategies she used to proactively seek feedback from every preceptor. Specifically, she explained that her goal was to elicit constructive criticism from the preceptors throughout the clerkship in order to improve along the way.

I made an effort at the beginning of the year to speak with each of them and say, "I really appreciate feedback, but what I appreciate most is if there's something you'd like to give me feedback on, please do it either at the end of that day or in that moment or something. Don't wait till a month later with an evaluation for me to hear about it because then it's not applicable. I can't learn from it. So if there's something you would want to correct me on, please correct me on it right away because that's when I would prefer to learn my mistakes." And I think being open about what my preference was with constructive criticism went a long way in creating good relationships early. And I never had a problem with any of them in terms of comments or corrections or anything. It was all very easy and just great learning. [MS12-post]

The perceived influence the preceptors have on students is double-edged. First, they have the potential to be a tremendous source of support for the student. For example, Epstein, Cole, Gawinski, Piotrowski-Lee, and Ruddy (1998) identified through self-reported critical incident narratives that medical students felt largely supported by their preceptors' abilities to provide safe learning environments and bring forth positive teaching behaviours. However, the interpersonal dynamics with preceptors can become negative, distracting, and have the potential to have a profound effect on a student's learning experiences (Harth, Bavanandan, Thomas, Lai, & Thong, 1992; Radcliffe & Lester, 2003). Researchers have found that students felt at times discouraged

(Harth et al., 1992), humiliated, and embarrassed (Radcliffe & Lester, 2003) and thus found social interactions with preceptors as a significant source of stress rather than as a source of support. These findings are consistent with several other studies where researchers have reported on the physician-student relationship (e.g., Baldwin, Daugherty, & Eckenfels, 1991; Haglund, aan het Rot, Cooper, Nestadt, Muller, Southwick et al., 2009). Haglund and colleagues found that either mistreatment or poor role modeling was perceived by 80% of the 125 third-year students who participated in their study and the negative features adversely affected student well-being. However there is evidence in the present study that contrasts the negative interactions with preceptors previously reported. In fact, the participants in this study described high quality teaching, and mostly positive interpersonal dynamics and role modeling.

Peers. Belonging to a peer group, such as third-year medical students, established a strong tie with a formalized social group. The sub-themes that were described by the participants in terms of their relationships with peers were: (a) “know that other people feel that way too” – peers within the same community and (b) “know somebody outside of the circle” – peers at other communities. Each sub-theme will be discussed in turn.

“Know that other people feel that way too” – Peers within the same community. The participants, without exception, described feelings of experiencing shared social reality support with their peers, which referred to others sharing similar priorities who can serve as reality touchstones. From the data herein, it appears that physical location may have played a large role in relation to the increased support from peers undertaking clerkship in the same community. By using the perspectives the students have gained from their different backgrounds, students located in the same community helped each other solve problems and work through challenges more effectively than if they worked alone. The following participant expressed how her relationships

with peers in the community evolved during clerkship, and as a result the students were very supportive of each other.

Well I think another impactful moment, we were in [community] and there were four students basically from four different pockets of the class so we really didn't, I mean we were friendly but there was no intimacy. And having spent eight months together, we became a family. And we were very supportive of each other and we were there when stresses were high and we were there to give each other feedback and you know suggest, "well maybe things are a little intense and maybe you know, it would be more beneficial had some balance in your life." That sort of thing because it's stressful, right? You're under a microscope almost all of the time. You're asking questions, you're asked questions, the answers you're expected to know. It's daunting so I think we were really very familial to each other in the end of the four of us. I think we've had very positive relationships and that I think we can take with us and cherish that from this point forward because I think that really also made the experience a good one because we were cohesive as a group of students. In fact [community] said that we were the best students they've ever had. And I think it is probably is largely because we were an intimate group that was open and raw at times and it helped. It was beneficial. No it was it was very positive. Well just being open, crying, being angry, being excited, we just shared in each other's joys, sorrows [laughs], despairs, because you know it isn't just about being in clinical, it's about leaving your fiancé or your family or your husband. It's a varied mix, it's not just the school issues. There's other stress, there's other life stresses, and I think that as a group we definitely grew professionally and personally. I had talks with myself and I leaned on my classmates and that is part of that whole sisterhood that happened amongst

the four of us because it was raw emotion, throughout the year, someone was having a breakdown including myself. Those were good experiences now that you can reflect back [laughs]. [MS2-post]

The participants realized that when they reached out to their peers, there was likelihood they shared many of the same challenges. For example, the following participant revealed how peers in the community were a source of support to discuss the realities of the clerkship.

The other students here are obviously a source of support, they know what you are going through. Sometimes if you feel like, “well I’m the only one that feels this way” you can talk to your peers and know that [laughs] other people feel that way too. [MS6-post]

The participants discussed the benefits of the social cohesion among the group of students in the community due to the amount of time spent together. This social cohesion was instrumental in the students formalizing as a peer social group in their communities and supporting each other. Specifically, one participant described the critical reflection she engaged in with her peers in the community, and how they were able to help each other overcome the challenges of the clerkship.

When you’re in a small group like we were with four people, it was perfect. We could hang out as four and nobody worried it was rare that we had to exclude anybody. We really shared a lot of our experiences. We complained about doctors, and if anything happened to us during our clinical environment whether it was good or bad, we always talked about it, and sort of reflected, not deliberately, because we had to get it off our chest. And the fact that we had to meet at least twice a week for our VAR classes was good because we would often come to the classroom before it started. So we would eat lunch together and we would just be talking a mile a minute just cause we were so full of this stuff that had happened to us, so that was really good. Well just learning how people

deal with different things because when we would go through these scenarios somebody would say, “oh I wish I had done this”, and then we would say, “oh well if I was in your situation, I would have said this”. I think this is a good strategy. Basically like coaching one another on how to get what you want out of the clinical, and how to stand up for yourself. Also we’re building each other up like saying, “oh well that wasn’t your fault” and “I wouldn’t have known that either” that kind of thing. So it’s that, again it comes back to confidence. I think it’s very important to make your experiences seem legitimate to have people telling you that you’re not crazy, that you’re not going crazy, that your thoughts are not irrational. [MS8-post]

Although the students at both campuses undertake the same curriculum throughout the MD Program, they are separated by geography. The following participant reflected on how quickly students from different campuses were able to bond as a group as a result of social activities.

I mean it was interesting to sort of socially in the beginning getting to know the other students in the community, we had two students from each campus so there’s sort of a new dynamic there. We all got along really well, and then at the end of the CCC you know it’s always difficult to leave behind like those new friendships and bonds that you make. You’re probably never going to be able to work together because we don’t even graduate together, both classes anymore, so that was kind of sad too, you sort of realize that. We ended up having a little social girls night, which was sponsored by the Local NOSM Group in [community] actually, so we bought all sorts of nail polish and flip flops and popcorn and movies. We had a little party which was really nice, it was a nice conclusion socially to I guess grieve the bonds that you make, whether they’re going to be lost or changed. I think that we all became much closer friends, I wasn’t necessarily really

close friends with all of them or knew all of them well, but I did find that over the course of CCC we all became much closer. [MS3-post]

Peers within the community were also helpful with developing useful collaborative learning strategies which worked effectively for the group. For example, one sees a particular type of collaborative strategy below which entailed the students developing learning objectives based on patient encounters seen in the community. She explained that every student took a turn presenting the content of a case.

We had a very cohesive group and after our third VAR we were all sitting there chit-chatting and we said “this just isn’t fun, we’re not having fun in VAR, all we’re doing is reading objectives from the school, we can’t relate it to a patient because some of the objectives weren’t relating to the patient case” and it was sort of this obscure abstract person we were trying to develop in our heads or patient. So we said as a group and the facilitator said to us “this is group learning, you guys can develop whatever strategies you want to learn, we’re here to facilitate it and we’re not here to tell you how to do it, so if that is how you feel you want to do it”. So we decided as a whole group that we wanted to make it fun and more interactive and that’s what we did and then the objectives we didn’t meet, we did on our own. And the school, the great thing is all the objectives, the majority of the objectives by the school, they gave us the references and the readings. It really wasn’t necessarily difficult to find the information because they supplied the supplemental readings so we didn’t have to go searching for a lot of it. So as a group we decided that’s how we wanted it to be. [MS4-post]

The following participant echoed the views of the previous participant and expanded on the benefits of developing effective collaborative learning strategies and group functioning.

You really do get to come together and really divide the work and the time together. So instead of duplicating the same work eight times, we'd split up the work or either one person did it and spread it out to everybody else. So our VARs were the same thing. One person every week had a VAR, they did the entire VAR and the rest of the people had that week off. And that's how we functioned in our clerkship. It worked great because we established guidelines "this is what we're going to do for our VARs, this is how we're going to do them" "we're going to answer the question, the objective and that's it" and that's what we did. So you build a lot of trust between each other because you expect, this is the material you're using to study, right? So you build, you expect a lot from your peers and they expect a lot from you too. It's mutual and it worked great, we had strong colleagues and very knowledgeable colleagues and it was very interesting because everybody has a different field of interest. So it brings a lot of inputs from different kinds of fields. And if there were specific questions on specific subjects we actually knew who to go see. So we had a VAR on eyes, well we had one student who ophthalmology is what she wants to do so of course she's leading that discussion. And the VARs on obstetrics, I was the one answering the questions because that's my field, that's what I like and dermatology we had one, so you build a lot of trust and a lot of expectations between each other and it really worked out. [MS11-post]

The following participant described an interesting strategy which entailed creative ways to practicing clinical skills. Specifically, the students planned a get together and practiced suturing on meat products, "we had a little party at one of the girl's houses and we like got pork legs or pork hocks from the store and practiced our suturing skills, so we are losers [*laughs*]" [MS3-during]. Many of the participants shared how important it was to socialize as a group and engage

in physical activity for the purpose of work-life balance. The socialization with peers offered the students with an opportunity to unwind and take a break from medical training. For example, this participant expressed the strategies he and his peers employed to relax.

We all got memberships here at the gym so we try to make it a routine that we all go there. We usually go together so it's just more social or it's more, you're committed to it. But in terms of making sure you have the work-life balance, we do make it a point amongst ourselves to try and get together every once in a while and do something that's completely unrelated to school whether it's going to watch live music or going to somebody's house and cooking dinner, just set aside time so we can sort of chill out. We're all from different backgrounds, like some of us are married, some of them are engaged, etc so everybody has a different sort of approach and they have their priorities that are different, but we all have the same thing going on academically. And there's only seven of us so it's like a small group, we all know each other very well, we've got to know each other much better over the course of the last few months but knowing them really well and knowing that we're going through the same thing, it's not a big deal to be like "hey let's go have a beer, let's go to the movie, let's do something else" and it's like "yeah! That's a great idea" and then you sort of just head over. [MS5-during]

“Know somebody outside of the circle” – Peers at other communities. The participants discussed having good friends undertaking CCC in other communities. Many of them referred to wanting to discuss their clerkship experiences with peers in other communities, compare experiences, and provide each other support. The following participant described the importance of staying connected with them to discuss shared challenges and support each other.

And then I have friends in other communities that I talk to on Skype or on Facetime or text all the time or call so when I have a bad day or something happens and you need to decompress you know somebody outside of the circle that you can say “I had such a terrible day today”. Even just before I called you my friend called me and her preceptor did something really bizarre he put her in a really awkward position so she’s calling me and saying “that was really wrong” and I can empathize with her and say “that was sort of weird”. [MS3-pre]

When sharing challenges with peers in other communities, the participants described their experiences to get a sense of how these were being experienced elsewhere. The exchange of stories was of particular importance to the participants to better understand what their peers were experiencing in other communities in order to more effectively support each other. In the quotation below, the participant discussed his views on sharing ideas and experiences with peers in other communities.

It’s awesome to be able to even call somebody who is in a different community and just talk about what they’re doing. And then comparing and contrasting the communities, even though you’re still talking about academic stuff, it’s fun. It’s interesting to see how things are being done in different communities especially the VARs. We can share ideas with each other and improve how we use our teaching time. In terms of their clerkship experience, like what may be different. I think, well when we talked about the preceptors issue, some places I think are swapping quite frequently and rotating sort of around through the clinic and just hearing what their thoughts are of that and what they’re getting from that and what they’re not getting from that and comparing it to what we have. So it’s really just swapping stories more or less, but I think we all kind of when it comes down to

it are having the same experience, the same troubles, the sort of same frustrations, but also the same moments where you're like really psyched about how things went. [MS5-during]

Family. Many of the participants identified family members who were particularly helpful to the students as they sought to adapt to the clerkship such as parents, siblings, significant others, and children. For example, this participant shared how her family helped her move all of her belongings as she relocated for the CCC.

I mean I have a really supportive family I'm really lucky that way. My parents are near [community A] in a little town called [community B] they helped me move here in May because I had to move in [community C] in May due to logistics to go to [other commitment] and be ready to go to school the day after I was done there. So I moved up here early so they helped me move in April or May and so did my sister and her husband which is a long trip because it's about twelve hours like I said so they came to [home campus] helped me pack all my stuff in [home campus] and move it all up here and carry it all up and I have an upstairs apartment. [MS3-pre]

The following participant shared the supportive behaviours of having a significant other who is unfamiliar with medicine. She shared how having this person in her life was important to provide her with a different outlook on life situations.

And then the other thing is my [significant other] is not in medicine at all and therefore when I go and talk to him or complain about things I don't ever have to worry about him being caught up in the drama or telling me that it's nothing because he's never been through it so he's always just extremely supportive. And I think it's nice having the two worlds where there's so someone who's from medicine who understands it and then

having someone who is equally distant from medicine who can be there just to let you vent about the things that are not necessarily frustrating you academically. [MS9-pre]

Another participant discussed her perspective as a parent who had to relocate away from her spouse and children for CCC. She described the significant role her family played in supporting her during the clerkship, particularly at times when it was too difficult to visit.

I wouldn't be able to do this if I did not have supports. I have a terrific husband, I have great kids, my extended family is superb, and without that there would be no way that I could do this. I mean I'm here at least five days a week. I wrote an exam on the 10th of November and this past weekend was my first weekend home in November. So that's three weeks without seeing, I mean I would go for a night I'd drive there for the night, sleep there and come back. But this was my first weekend where I could spend more than eight hours ten hours, twelve hours with my family. So without the supports, it wouldn't be possible to be successful. [MS2-during]

Another participant discussed how fortunate she was to live at home with or near her parents and how motivated she felt by her parents' encouragement while pursuing a career in medicine.

They understand, they're very understanding of the amount of work involved, it's like I feel like it's not just me it's like a whole family thing. I'm not the one who's in med school my family is in med school [laughs]. So they're very lenient and at home, my mother is just she's a pearl. I come home she's just like "I know you're tired, you go sit, I'll make supper". I couldn't ask for anything better. Not having to make my own supper tonight, I love it! They're very supportive and very very proud. So the encouragement because yes I do often wake up and say "I'm done. I'm not going to the hospital this morning" and my mom's just so thrilled that I'm here that she's "no, you're going to

make it and think about the future” so she’s really really helpful in that way, very encouraging, very proud of me being here. [MS11-during]

The following participant described the significance of having her spouse’s support in the community with them as she undertook CCC. She felt this was particularly important because they had been at a distance from each other during the first two years of medical school.

As I’ve have told you before I’m really lucky my husband come with me, so that alone helps a lot. It’s good to have a built in distraction that says “okay you’ve done enough, it’s time to shut down the computer”. So I either watch a little TV, go for a walk. We do that a lot we’ll go for a walk on the river. Some of the hockey games in the community, we’ve gone to a couple. Like fundraisers that the hospital has done, we’ve been able to go to those. We’ve gone out for dinner a few times across the river and [laughs] so nothing really extravagant or crazy. Well for me it’s huge because for the first two years of school we were long distance. So it’s actually amazing to be in the same place at the same time. It’s just life is less stressful when you know you’ve got support and it’s there and I have family by phone and email and all of that and I mean that’s a great help too. I think personal contact does a lot to help ease that so and I know I’m not typical in that sense because most people have left their spouses for this year or are away from them or going back on weekend’s things like that so. [MS12-during]

Administrative and clinical coordinators. The site administrative coordinators (SACs) and site liaison clinicians (SLCs) are integral to ensuring that CCC is effectively delivered in each community. The participants described how the coordinators in the communities provided supportive behaviours in terms of helping them deal with some of the challenges during the

clerkship. For example, the following participant revealed the flexibility the SAC in her community demonstrated, especially when considering she was living far from her hometown.

And then here as well even the SAC the person who schedules us and such she's very supportive, and the physician who is in charge of us as well is very supportive as well. I have asked for two Fridays off for the two upcoming months in order to go home for a couple of events because [community] it is nearly a twelve hour drive or a couple of flights that cost me hundreds of dollars to get home and then somebody has to get me into [community]. She said that they are more flexible and I think it's probably true that they are more flexible than some of the other communities because they want you to be happy and they want you to see your family and not be depressed [laughter] because you're living in the middle of nowhere. [MS3-pre]

Another participant elaborated on the importance of maintaining an open communication with the clinical coordinator. She noted the significance of the SLC showing a vested interest in her personal and professional interests.

At the beginning of the year and in one of the earlier interviews I mentioned how our site liaison clinician was very much facilitative in trying to integrate us into the community very early with an email I guess right around this time of year but last year, welcoming us to the community, making sure that we had housing options available to us immediately, asking what our interests were. And throughout the year, it wasn't just a onetime deal, throughout the year she was very much interested in us personally as well as clinically. At each of our quarterly performance reviews she would sit down and make sure that the whole person was taken care of not just say, "Oh! You're doing fine clinically yes, you need to work better on soft skills" but she'd ask, "How is the community for you?" She

tried very hard to find opportunities. And I think she was very instrumental in making students feel included, tailoring the community to the interest of the person. [MS10-post]

Healthcare professionals. Many participants described the opportunities when they were able to gain knowledge from healthcare professionals besides physicians. According to the participants, there were many interprofessional educational opportunities that occurred throughout the CCC, as described in this quotation.

We had the cardiac technologist who was brilliant she came in and did like three days of just ECGs with us and from the very beginning and she was a fantastic teacher and it was amazing. I love when somebody just teaches you and they're really excited about it. So we get little spots of that and we had a SES [Specialty Enhancement Session] on intubation because we hadn't really learned enough about that but you're sort of expected to know. So they're really flexible here in terms of like if we can identify something in our learning that they can sort of address, then they'll sort of do so. So that's really nice. Yeah most of the nurses are awesome. They're really great at being like "okay you come do this IV now" like "you come do this". Most of them would go out of their way to provide us with opportunities to practice our skills and they give us a lot of credit for our knowledge and so it's kind of nice in that way because you really develop a rapport with them. So they're very supportive. We work with a dietitian and we work with a diabetes educator and all the people that are sort of the mini specialists in the community, we often touch base with them so and maybe you wouldn't do that as much in a larger centre.

[MS3-during]

The participants expressed the importance of communicating with the various professionals about their willingness to learn more about a particular topic or skill. In the quotation below, one sees

the willingness demonstrated by the healthcare professionals to teach medical students. For example, this participant described gaining knowledge and developing skills as a result of teachings by nurses, physician assistants, and diabetes educators.

I think you need to approach them and tell them that you want to learn or else the opportunities won't be there. So there are certain things that doctors don't do that only nurses do that doctors need to know how to do like starting IVs, putting catheters in, giving you know injections in, administering medications. The nurses just do it right, so, if you are only working with doctors you're not going to see that so I would like to get better at starting IVs. One day when I was working in surgery I was with the anesthesiologist and he only puts the patient to sleep and then wakes them up so there is this time where you can find something else to do if you want. So during that time I went and saw the nurses who were getting the patients prepped for surgery and I said save all your IVs I am going to come over and do them. So they would say oh ok and then would bring me over and the first four I totally screwed up [laughs]. But they were really nice and they walked me through how to do it. You just have to ask. I want to spend time with the diabetes education centre, diabetes is so common. You see it so much in the office and I would like to know how, they do a lot sliding insulin scales, so they adjust insulin based on how much the patient is eating and how much their exercising and I don't know how to do that. So I need to do that because diabetes is a really commonly managed problem in family medicine so I would like to spend some time there. There is a physician assistant downstairs. Yeah he works at the fracture clinic every Tuesday with [preceptor's name] and he is really great, he taught me how to put on casts and he does a lot of simple things

like I don't know, he is a really good teacher so if ever I am in emerge, he is really approachable. [MS6-during]

Strong arguments have been made throughout the literature in favour of moving towards collaborative practice models and the need to train future health care providers using an interprofessional approach in support of this shift (Chan & Wood, 2010; Kirby & LeBreton, 2002; Romanow, 2002). Correspondingly, changes must be made in the way health care providers are educated and trained if they are expected to work together and share expertise in a team environment (Romanow, 2002).

Northern Ontario School of Medicine. The NOSM was also discussed as being supportive. The following participant explained that some individuals at the NOSM went above and beyond to assist her with concerns. She described the informational support she received from staff members in terms of navigating the school's nomenclature.

School support, there are people who work so hard for us it's incredible. Some people would just bend over in a gazillion ways to make sure that our education wasn't hindered in any way and to me that's really surprising because that wasn't their job that's not what they're hired for but these people really took it passionately and really anything we had issues with they were on it. That was, it's very nice because you really don't feel like a number or, you feel really a personal connection because these people are really there for you and they speak to you everyday and things like that so yeah there are quite a few people in the school who are quite devoted to helping us out. [MS11-pre]

Another participant highlighted the financial support available for students. Specifically, she referred to the funding available to help offset some of the expenses incurred during the clerkship.

Well we have the funding program through the school which I think is provided through CMA, that's something that will eventually be very important as support but not something I've gotten into yet just because I haven't had expenses to deal with but they provide funding to help us deal with the extra costs for this year so eventually that will be a very key player for the support front [laughter]. [MS12-pre]

Broader clerkship communities. The clerkship communities emerged as being integral to the participants' development of a sense of belonging. The sub-themes that were described by the participants in terms of their relationships with the broader clerkship communities were: (a) "we got a really warm welcome from everyone" – welcoming, (b) "get out and socialize" – integration, and (c) "a really nice conclusion" – farewell. Each sub-theme will be discussed in turn.

"We got a really warm welcome from everyone" – Welcoming. The participants, without exception, described the tight-knit community welcoming they received when they arrived at the community. The following participant highlighted the members in the community who were involved with the welcome activities, as well as being interviewed by the local media.

We got a really warm welcome from everyone in the community. We spent a day in [community] where we met the mayor, people on the council, people involved in the community, local business owners, banks, they all came out to give us a warm welcome. We had this lunch, the local paper, the TV were there interviewing us. They gave us you know gift packages as a welcome to the community. They sent us on a scavenger hunt throughout [community] and then we did the same thing in [community] where we went to the town hall, the mayor was there, city council, local community members. Again they

gave us a big welcome package, we got beautiful sweaters that say [community] on them.

[MS6-pre]

Another participant highlighted the orientation organized by the community which was intended to familiarize the students with locating the clinical settings where they were going to spend much of their time. She also noted the orientation to the community provided the students with a better understanding of what the community had to offer them.

You could see the amount of preparation that went into welcoming us to the community, like it was just amazing. Orientation week was amazing. We had a [community]-amazing Race that they organized for us. So it was an orientation, where we run around the entire community doing a scavenger hunt in scrubs, in surgical scrubs and, and wacky bandanas. So we're going all over the place, they had us you know, at the flea market in [community] and out, at one point we were riding down a water slide in our pajamas it was just crazy fun, just to break us in and show the community, showcase the community, "Hey! You have four medical students coming here, they're going to be living in our community". So it was a way of not only getting us acquainted to the hospital and the medical clinics but also the entire communities, then sort of highlighting what they had to offer. They had put a lot of forethought and effort into it, so that was really appreciated.

[MS10-during]

"Get out and socialize" – Integration. Many of the participants expressed how the communities demonstrated interest in their accomplishments. For example, the following participant described how these supportive behaviours eased his integration into the community.

But in terms of within the community it's not that different I mean it's a small community here. I'll just give one quick example, our first week we did scavenger hunt and some

community members volunteered to take us around, one of them runs some of the gym sessions at our gym and he sponsored me [laughs] for Movember and then I bumped into him again, I said “thank you” and then he just decided to invite all the students over to his house for dinner just to see how we’re liking it here. It’s not that often that you get that sort of warm welcome so we do feel as though the community enjoys having us here for the most part. And that in itself is sort of supportive. There definitely is [community integration], not once have I felt sort of that we aren’t really accepted that they don’t want the medical students here. [MS5-during]

As mentioned, over 90% of the student cohort was from Northern Ontario; therefore it should come as no surprise that many of the participants easily integrated themselves due to the similarities to their hometowns. This participant underscored the similar lifestyle in terms of population size and the northern sub-culture he was accustomed to.

Yeah, I mean I think [community] was very easy for me to integrate into, because I’m from [community] it’s very similar population size, it’s a very similar lifestyle, I mean similar population in terms of age and cross section of people and things like that. I found it very easy to integrate into [community] and just sort of connect with the people there, because I know sort of what life is like in a town that size and in a town where you can do pretty much anything. I mean there’s lakes, in the winter there’s arenas where you can play hockey and everything like that, so it’s easy to talk to people when you’re from a town very similar so for me integrating to [community] was not hard at all. [MS7-post]

Taking one example closer to the personal level, one of the participants described the topic of having developed an intimate relationship with someone in the community. She expressed how

this new relationship influenced gaining deepened understanding of the community. She revealed that her integration in the community was much more meaningful as a result.

I guess another thing that would be meaningful for me would be that I started dating somebody in [community A] so I mean that's sort of like a fluke. It's not like I went out on CCC meaning to do that, so just dating somebody who lives outside of [community A] has made me realize what my classmates have been going through since the beginning which is because I'm used to being free of family restrictions right? But now I'm thinking maybe I'll have to make a decision based on someone else as well, so that's kind of scary but, I guess natural. I think it made it more pleasurable, more enjoyable, I found I was more invested in the town than my fellow students, because I mean you can talk about getting out in the community and getting to know people, but once you're actually in a relationship with somebody who lives there, you do tend to see it in a different way and make yourself more at home there, and get out and socialize. Well I think if you know you're going to be transient you go in with a certain closed mindedness, you don't join things, you just see the community differently, whereas if you're going to live there or if you're with somebody who lives there and really likes it, then it could totally change. I mean the same restaurant can suddenly seem like an awesome place to go and hang out like once a week, as opposed to like a dump, right? I don't know it's just like, maybe they know what to order [laughter], it's very different. I think we're very subject to influence over everything, and our opinion, like an opinion on a town or a city is so dependent on your own experiences there and even how you interpret your experiences is dependent on different things, like who you were with, how much they enjoyed it. I mean because the guy I'm dating, he really likes [community A], I think it gave me positive perspective of

it, and I mean, he teaches at the high school, and even though I had heard things about the high school, you know negative things, I think that it's a great high school because I know they have tons of sports for grounds, and lots of good kids that go there, and I mean it's pretty weird, because I've been back to [community A] since we've left, and so it's not a community that I'm abandoning, or just using and then dropping, you know? It's like maybe I'll actually continue to enjoy it or give something back to it maybe. I think it was very important. I think it was very important for my overall experience, gave me an excuse to go into town, just made the whole experience more positive, more balanced, and I mean I suppose you could get the same type of thing from just making a really good friend in the community, like again especially if there's somebody that likes living there and likes doing things, and enjoys their job, and as long as you're willing to listen to them and think that their opinion is valid than you're definitely going to be influenced by it.

[MS8-post]

“A really nice conclusion” – Farewell. Many of the participants alluded to the end of the clerkship as a difficult time to say goodbye to those in the community. When considering the substantial amount of time and resources devoted to having students for eight months, one of the participants described how her group of students decided to thank all of those in the community who were involved with making their clerkship experience a success. She revealed how her and her colleagues personally delivered thank you cards and treats to everyone who contributed to their experience.

Well I know that at the end of our CCC in [community], what we did was go around and thank everybody in the hospital at the sort of conclusion, which was really nice. I don't know if anybody had done that before. We got a cart of goodies like treats and we got

cards and we signed like a hundred cards for everybody in the hospital, so the janitorial staff, the cardiology technologist, the ER nurses everybody that we could find. We just went around in the afternoon after our last exam and went and personally thanked everybody in the hospital that we could find that day. I know that they really appreciated that we took the time to thank everybody in the hospital and everybody personally for how well they had treated us while we there. That was a really nice conclusion for both of us, like the community as well as for ourselves. So we hope to carry that forward for the next group too as well, because we felt so accepted in the community and we appreciated what has happened to us, that's why we took the effort to write so many thank you cards, not to just our preceptors but every person that wrote to us and every person that donated to our welcome basket, you know the local NOSM group, the other businesses, anyone in the community that hosted us for a day, or nurses, or specialists to make sure that in the future that the relationship they had with us as students was you know continued on for students in the future, so that was important for us to do. [MS3-post]

Social support is an important contributor to health and personal adjustment (Sarason, Sarason, & Pierce, 1990; Sarason & Sarason, 2009), and is particularly beneficial for medical student adaptation (Rospenda, Halpert, & Richman, 1994). Sarason and colleagues concluded that the essence of social support lies in individuals' beliefs that they have valued relationships with people who display concern, and are willing to assist them in times of need. Albrecht and Adelman (1984) added to this definition by delineating in more detail a wider number of consequent benefits. They believe that a network of supportive individuals "serves to meet a recipient's needs for venting feelings, reassurance, and improved communication skills; to reduce uncertainty during times of stress, provides resources and companionship, and aids in mental and

physical recovery” (pp. 8-9). There is evidence that relationships with a network of individuals offer extensive resources away from and within the communities for the medical students, such as tight knit community support, providing these are tapped.

Summary – Relationships

In this chapter I used quotations to exemplify the relationships the participants developed throughout the CCC. Many of them underscored how much they benefitted from having developed lifelong friendships with preceptors and colleagues, and established rapport with many others as a result of the longitudinal process. They were extremely thankful for the increased exposure to the learning opportunities with healthcare professionals besides physicians. In addition, the participants demonstrated how being integrated in the community and developing relationships with the community provided a deepened understanding of the local healthcare needs. The clerkship communities emerged as being integral to the participants’ development of a sense of belonging. In the next chapter, I will discuss the key theme, transitions.

CHAPTER EIGHT

RESULTS AND DISCUSSION:

TRANSITIONS

Researchers have noted the most influential transitional stage in undergraduate medical education may occur during the third-year clinical clerkship (see Haglund, aan het Rot, Cooper, Nestadt, Muller, Southwick et al., 2009; Radcliffe & Lester, 2003; Treadway & Chatterjee, 2011). The changes and transitions described by the participants in this study included their experiences assuming many of the responsibilities associated with being a physician. These changes and transitions were particularly significant as they sought to adapt to the learning, living, and working environments during the CCC. The key transitions that were considered by the participants when they described the several changes in their environment experienced as a result were: (a) the preparation and anticipations ahead of clerkship, (b) the transition from classroom learning to clinical learning, (c) the disorientation dilemma, and (d) the professional socialization of becoming a physician, each with sub-themes.

Preparation and anticipations ahead of clerkship. The participants described their preparation and anticipations of “the clinical aspects of healthcare in relation to both their idealized perceptions of medicine and to their anticipation of the responsibilities they will soon be expect to meet” (Haas & Shaffir, 1987, p. 89). The sub-themes that were described by the participants in terms of their preparation and anticipations ahead of clerkship were: (a) “gave us a little snapshot” – the relevance of integrated community experiences (ICE) and (b) “going to be expected to work clinically” – anticipated challenges and changes. Each sub-theme will be discussed in turn.

“Gave us a little snapshot” – Relevance of ICE. Most of the participants expressed the limited relevance of the ICE on CCC due to the variability between the experiences. The following participant reflected the view of others in terms of the usefulness of ICE with providing at least a snapshot of what CCC entails, including preparing him to manage interpersonal challenges with preceptors, as well as navigate the NOSM’s nomenclature of the site selection process.

I think they’re really good to give you a flavour of what it’s like to be a clerk because for the most part you’re in an office or hospital full time as we are now so it’s a good sort of snapshot of what to expect. I think the only issue I have with the ICE placements is they are all so varied and some students end up in a place that have very, I’ll try to choose my words carefully, people who really are engaging and people who really want to teach and have a lot to offer the medical students as basically role models whereas some from other communities may provide a poorer experience so they can sort of sour the student for clerkship and have them worry a lot more about going away and confining yourself to one placement for eight months. Both of my ICE placements were neither really good nor really bad I think they were a fair representation of what NOSM had told us they would be like. I think that it helped us get used to the bureaucracy in NOSM, how you apply for certain things who you talk to if you have problems and knowing it was only a four week placement was nice. When it came time to apply for the eight month placement so to speak we sort of knew the ropes, we knew how to use the computer systems which we have to submit our applications through so we knew which departments of the university are dealing with the different aspects of extra placements more or less. So the ICE

placements gave us a little snapshot of all the little aspects of doing our CCC but just as a smaller package. [MS5-pre]

“Going to be expected to work clinically” – Anticipated challenges and changes.

Several participants indicated how their previous backgrounds in another professional capacity and previous clinical experiences served as benchmarks as they were about to undertake CCC. The following participant echoed the perspective of others entering CCC with previous clinical experience and emphasized on the importance to assume the role as a medical student.

Well I just finished an elective in emerg which was very helpful for me because I am an emerg nurse, but I didn't really understand the whole medical student's perspective so that was helpful. Since I'm a nurse, I'm always worried about am I seeing enough patients, am I pulling enough weight is my focus but that shouldn't [laughter] be my focus as a medical student and physicians kept telling me that “you're not running the department pick a patient that is interesting do the history and physical and sit down and research if you see two patients in eight hours that's okay”. So I kind of needed that validation because I felt like because it's the emerg I need to sort of being moving like this [hands gesturing structure and forward progress] and that was helpful because I felt a bit of stress and I needed to know the answer but I also, you know there's like 50 patients waiting so they took the pressure off me for that so I think that I will be able to operate in that same fashion at the hospital in [community], where I can take one patient take my time do all the research you know the treatments, differential diagnoses and sort of present that to my preceptor. [MS2-pre]

The CCC was described by many as a unique opportunity to learn about the broad spectrum of areas in medicine delivered through the longitudinal integrated clerkship model, including

parallel exposure to clinical disciplines and increased exposure to common clinical conditions and procedures. This participant offered his view on what he might learn during CCC, particularly in relation to the clinical disciplines he had not yet encountered in his medical education.

I'm hoping to learn a lot of, medicine is both art and science so I'm expecting to learn more of the art of medicine, learning from preceptors and how they go about interacting with their patients, eliciting certain signs and symptoms and how they manage patients. I think you can read about managing patients in textbooks day in and day out which is actually a very different thing to look at the person in front of you and try and figure out what's best for that person and what they want as a patient because after all it is patient-centred. So you need to stop thinking about how to fix this hypothetical disease situation to how do you make the person most happiest and look out for their best interest. I think that's one of my major goals for this year is just to learn how to manage a problem over a long period of time which is great for a longitudinal clerkship over eight months because I'll be able to see patients throughout any of their management. I think I'm also looking forward to seeing those other more specific areas of medicine such as surgery or emergency medicine or neurology or obstetrics, things that up to this point in my education it's been really limited exposure by nature of being in pre-clerkship. I look forward to working with a surgeon, seeing how procedures are done but also what a surgeon's lifestyle is like and their opinions on different matters outside of strictly operating on someone or how the politics of medicine works, and the business of medicine too. One thing that is left out of the formal education of medicine, I don't want

to use the word business but more management, how do you manage your business as a clinician. [MS5-pre]

The pressures of performing clinically and academically were anticipated by many participants as competing demands, revealing themselves on a daily basis. One sees in the quotation below the participant's angst with making the transition to clerkship such as potentially working at night, experiencing sleep loss, and assuming clinical responsibilities.

I think we're going to be expected to work clinically so do histories, do physical exams. We need to learn basic clinical skills like start an IV, intubating, CPR, suturing, you know all that sort of stuff which is very different than reading a textbook or attending a lecture. Time commitments are very different this year as well so in medicine you can work 24 hours a day seven days a week whereas previous to this you know you had you're weekend off, your evening were almost always free, you might study on evenings and weekends. I actually studied on evenings and weekends a lot but you could sort of make your own schedule, you hardly were ever up past, I was never up past 11. I never study at night whereas here we might be expected to do some work at night. Our coordinator has been really good in that she's never going to schedule us for a night shift per se. However, if we're working with a specialist who gets called in at night and it's a really interesting case well we'll probably be called in as well. If our family doctor is doing deliveries, and we'll definitely be called in for obstetrics a lot in our community. We've been told that so they do have what they call the obstetrics pager so one student will probably have it, we'll take turns carrying around that pager and whenever there are babies coming we're going to be called in so that could be in the middle of the night. That's definitely going to be a change for me, a transition. I've never had a job where I've had to work nights so I'm

not used to being up in the middle of the night so I think that's going to be the hardest transition for me. I'm very much I wake up at 7am go to bed at 11pm type of person.

[MS6-pre]

Another participant provided her views on potentially overcoming her personal fear of seeing blood. She felt she would overcome this fear as a result of increased clinical exposure, such as surgeries.

I didn't apply to come into medicine straight out of undergrad because I got sick at the sight of blood, and there are still some surgeries that I'm absolutely terrified to have to see or to have to be around. I'm still extremely nervous for an actual trauma like a car accident to come in where there is not necessarily the blue cloth that's kind of covering the patient up in an operating room and where it seems very real. I don't know how I'm going to cope with that, but I'm looking forward to actually overcoming that kind of queasiness and challenge. I think for the most part that's the way I feel about the entire CCC experience is kind of somewhat anxious but overall kind of excited. [MS9-pre]

One of the anticipated challenges for many of the participants was the curriculum delivery during the CCC, which varies tremendously from the two previous classroom-based years. The following participant described the changes in the curriculum that students had to adapt to early on during the CCC.

But even the academic components of our curriculum are quite a bit different from what we're used to. I think that's a transition that students are going to have to make when they arrive at the community and when they can actually start the curriculum. It's not exactly something we can prepare for from previous experiences. The concerns might revolve around the timetable. When we're more academic learners, our focus is classroom-based

academic learning. We have our classes, we have our CBLs and other small group-based learning, and we have time in the evening to review notes, to do the self-directed learning. In the CCC, it's still very much self-directed learning but with significantly reduced time to do so and the expectation in the learning is quite different. The VARS that I've heard we're going to be doing are different and the expectations and the focus are different, keeping in mind that we are in a different phase in our education. So I think that will be an adjustment for us. Students in years above us frequently use the word "overwhelming" to describe the first two or so months of clerkship. They do tell us, however, that we will adjust just like we always do and that it becomes easier as the year progresses. [MS9-pre]

Transition from classroom learning to clinical learning. From the outset of Year One of the MD Program, the NOSM's distributed community-engaged learning model includes case-based modules where students work in small and large group sessions through case scenarios with 'real' and fictional patients, families, health professionals, and practice settings which represent the context of rural and Northern Ontario. As previously mentioned, the CCC is when students experience parallel exposure to various clinical disciplines and areas of medicine across each phase of the life cycle as encountered in the context of rural family practice.

The sub-themes that were considered by the participants when they described the transition from classroom learning to clinical learning were: (a) "all of a sudden you learn on the fly" – changes in the learning environments, (b) "it's balancing the amount of school work" – academic demands, (c) "my life is not my own this year" – workload demands, and (d) "you take it upon yourself and ask your preceptors" – self-directed learning. Each sub-theme will be discussed in turn.

“All of a sudden you learn on the fly” – Changes in the learning environments. Many of the participants noted the changes between the learning environments in terms of moving from the classroom to the clinical setting. For example, the following participant expressed how CCC provided opportunities to apply what she had learned in the classroom.

Oh I think there will be huge transitions from going from sitting on our butts in a classroom [laughter] for the last two years to actually applying clinical skills and applying our academic knowledge I think that’ll be the biggest transition you go from TOS groups, CBL, lectures LAB, and now you get to actually apply that knowledge so that’s a huge transition. I think that for some people it’s going to be an even bigger transition, I think that I’m fortunate that I understand how systematically the hospital works. I understand systematically how healthcare works because I’ve worked in it so that part for me won’t be a huge transition. I just think applying, becoming a clinical student is going to be a huge transition from sitting there doing group learning versus now applying everything.

[MS4-pre]

Another participant expanded on the topic of knowledge application in a clinical setting. Her view on the transition from classroom learning revealed the challenge of taking on responsibilities in what she described as a real-world environment.

And it's not just information gathering it's now the information gathering, the synthesizing and then the management, long-term or short-term. So it's been a change for sure in that way because in first and second year, here’s information, small-group session all la-ti-da. But now it's much more responsible and you also have that face-to-face patient interaction. And it’s understanding the complexities of working with people and the real-world perspective. So that was a big change that I found. It was a bit overwhelming at

first for sure to come into this role. And there's a lot of role stress because all of a sudden it's like instead of working in second year, the schedule is pretty lax. We have Fridays off, and Tuesday afternoons off and the weekend off before your exam and the Friday so you can study. So you went from this lackadaisical education that was probably easier than undergraduate. So I mean, not only have you gone from you only have to know the information for the exam that's coming up in six weeks. Now you have to know everything because you're being tested all the time as every patient comes in and they say, "what's the big deal with this patient?" and then you also have exams. And then you also have this time commitment that's like double or more from what you were used to before. So I mean in terms of transition it was crazy and speaking with the other students, we really wish we had more in first and second year to prep for this year in terms of knowledge, in terms of content. There are things that I would come across here that they'd say like "how could you not have covered this?" [MS3-during]

Most of the participants experienced competing obligations during their busy schedules in the clinical environment. The following participant shared an interesting patient encounter in the clinical setting that happened early on during her clerkship experience. She recalled assisting a patient to the washroom on her first shift in the emergency department and how she had to seek help from the nurses to remove the ECG leads. She described developing processes of adaptation to the hospital environment.

I've never worked in a hospital before. Like when I worked my first emerge shift, I had a patient who just wanted to use the washroom but he had all his ECG leads on there like little stickers and they just monitor your heart. He wanted to go to the bathroom but I didn't know how to take his ECG leads off, like it's just little simple things but I had

never worked in a hospital before. I felt when I first got here I was always needing to ask, I had to find a nurse how do I take his leads off, really simple things and now I am just more comfortable working in a hospital environment. I was never uncomfortable, I mean you just always feel like an idiot as a medical student [laughs], you never know enough. So I am used to that feeling. You just approach them with kindness I think and people will help you. It is a lot of responsibility. [MS6-during]

Another participant described the strategy she developed to adapt to the transition to the different learning styles and environments. Specifically, she revealed transitioning from textbook learning and developing processes of adaptation to clinical learning. One strategy she employed was maintaining written notes and carrying a clipboard with her at all times.

I had no clinical, real clinical experience either in a hospital or any sort of other clinical learning site. Whereas other students have had previous careers as clinicians and so they're comfortable in the clinics. So first year and second year were great for me, learning from the textbook and visual pathways just as I always have, and then you enter third year and you wonder "what the hell happened?" All of a sudden you're learning on the fly, it's very auditory learning, you learn in clinical examples, you learn on the spot and you're expected to remember it. That's not my learning style so it took some adjustment to really learn on the fly as a clinician. But I feel that I've adapted fairly quickly to the learning style. My first quarterly performance reviews sort of reflected that as well. Our site liaison clinician is very observant and she takes her job very seriously as an SLC. So she was observing us all, and she wrote, "she might have had some concerns early on about the overwhelming nature of the CCC" but I adapted really quickly. She said, "she adapted really quickly to the clinical learning" and so that was a concern, how

am I going to adapt my learning style to this completely different environment of learning? And you just do it, you get in or you get out, like you do it or you don't. There's no medium there. So just get in and do it and do your best and hopefully you find a technique that works for you. I write everything down. I always have a clipboard with me to write things down for later and then I'll transcribe them into a handy notebook that I have, things that are useful to know that I kind of learned in this one clinical encounter but I should probably know later on kind of thing. So I'll always write things down with the preceptors and I think they feel like they're being listened to as I write because it shows that I'm taking their opinions and their teaching seriously. That's how I've coped with the transition and learning. [MS10-during]

As it relates to transitioning to the clinic, the participants described developing more effective history-taking approaches to gather information from patients. For example, the following participant discussed the importance of developing the skill to succinctly present the pertinent details to her preceptors.

The thing is they are starting to put, not really putting responsibilities on us, we aren't responsible for anything but they are putting more demands on us, knowledge demands. So I guess that's what clerkship is about is learning how to stand on your own two feet in the medical field and learning how to manage patients I guess. It's most of the changes, well it evolves around different aspects. One of the first, at the beginning of the year and this is, I've noticed myself I just I don't even need my preceptor to tell me, but it's just eliciting the right information from patients. So I've noticed that I'm more comfortable picking out the details that are relevant to whatever the situation, the problem the patient is coming with picking out the pertinent negatives, pertinent positives, things like that.

What else? How to present? That's something we don't do up to up until now, presenting a case to a physician. So you yourself, taking a history, doing a physical, then learning how to sum up this information to present. We do get like one TOS or something in second year or I don't even remember where it was, it's probably an SCS where they kind of said "well this is how you present a case" and then we've never seen it again. So I was pretty awful at it in September, I had no clue. I would just ramble on and talk about all the things I'd seen with the patient until the doctor said "look, what do you really want to tell me?" So it's working on that and how to present cases appropriately. And then myself having to come up ah with diagnoses and not come up with the forty page-long diagnoses list that we do in TOS [laughs]. But coming up with the like with three main diagnoses and what would you do to figure out which one of these it is and how to manage it so yeah. It's quite interesting. [MS11-during]

Another participant eloquently described the significance of the transition to the CCC for her own learning preferences. Specifically, she underscored the pace of acquiring, processing, and applying knowledge that CCC afforded her worked better for her own learning style as compared to Years One and Two.

But during the clerkship so far it's actually, I feel like this has been the easiest transition in medical school so far for me. It's been really easy to get into the flow of things and just carry on with them. So it's been a really great year for me so far. For me I guess it feels more of real life now. It's like school is very isolating in the sense that you go to school, you do your class or, and then you do studying or whatever but you're in a building, you're kind of secluded, but it's made that way on purpose, to give you that chance to really absorb that information. Maybe it's just because I'm a mature student and I've

worked before and I've had that experience so coming back to it now in clerkship is, it's almost a bit of a relief to be finished with school [laughs] and to be back to life. And to have that contact with people and still have the learning portion of it but just have a little bit more structure to my day and I guess in terms of a normal structure, for me anyways that's how I feel so. Overall I think it's been a pretty seamless transition. It's hard to say I think for me because the first two years were very intense and just a large amount of knowledge. And so this year finally feels like my learning curve has slowed down a bit [laughs]. And I am able to start processing and applying knowledge so it just feels a lot easier [laughs]. I think it's a chance to start to find my feet a little bit, just start to establish the way that I want to be a physician and explore that a little bit. And I get to do that a lot in clinic and I get to see lots of examples because I work with all of the physicians here so I can take little things or leave little things as I like them and as I don't like them. I get to really explore that and develop my own skill set and do that. So for me that's the biggest thing, it's just really expanding my skill set. Definitely more responsibility, that's for sure. And learning how to be comfortable with that because that's a big learning curve and that just excels as I go along in the process too. So it's nice to actually have the time to get into that role slowly and to always have a doc with you. You could say "oh well I think I want to do this" and they can say yes or no. And so slowly now it's becoming more like, "I want to do this and this and this, this is what I would choose" and so bit by bit and step by step you get a little bit more comfortable with that responsibility. [MS12-during]

In the quotation below, the participant explained how the transition to the clinic motivated his ongoing pursuit of knowledge. He discussed the benefits of hands-on training and learning in the clinic.

Well I think the whole experience of transitioning from mostly book learning in first and second year through CCC where I mean you still, you're keeping up with the reading for the class work and everything but applying that more so to clinical situations. I think that's the biggest transition you make through CCC, and by the end of it you're feeling like I want to be in the clinic, I want to see more things, I want to be more hands on, and that's where the majority of your learning is happening. I mean you've got to read, you've got to get the background knowledge but I want to go and see what I'm reading about I want to treat what I'm reading about. I think that's the biggest transition, the biggest change, where I want to be in clinic as much as possible or in the emerge as much as possible, and just getting hands on and learning the tricks and learning the pearls that the doctors know that aren't in the textbook and things like that. [MS7-post]

“It's balancing the amount of school work” – Academic demands. Although learning throughout clerkship occurs predominantly in the community and clinical settings, there are academic demands such as structured instructional sessions. Either in groups of eight in one community or groups in different communities connected through information and communication technologies, students meet twice weekly with a community faculty member to discuss their VARS, which are based on clinical cases from their experiences in the community. Other instructional sessions consist of experiential learning with multiple half-day primary care sessions (PCS) under the supervision of clinicians. Each week students also experience Specialty Enhancement Sessions (SES) related to the six core disciplines of internal medicine, emergency

medicine, family medicine, child health, women's health, and surgery across community-based and clinical settings. The following participant described the academic requirements for SES and shared the variety of exposure including sessions with locum physicians, or ride-alongs with police and ambulance.

We have SES sessions, these are Specialty Enhancement Sessions. So we do those twice a week for about three hours. Days are variable and those are designed, the breakdown for those is you have to do thirty with a physician in a specialty encounter. That can be any sort of locum physician like a urologist coming up or a psychiatrist coming up, but it can also be a family physician or a preceptor that you work with doing a specialty session. So I was with someone who works for the Canadian Mental Health Association, and once or twice a month on a Friday she'll go in and do assessments for CMHA. So that's considered a specialty session with a physician as well. So thirty of those throughout the year and then there's another thirty that we have to do, twenty of them are in communities that can be anything from, I've done EMS ambulance rides, being out with the police on a police ride along. Today I just finished in the lab at the hospital learning what the lab does, so anything like that. They can be non-physicians and in community or in hospital it doesn't matter, and then ten sessions are your choice. It's all allied to health, like it all ties back to the healthcare of your patients. So it's very patient-centered. So it's good to have a small break with the SES sessions. [MS10-during]

The pressures of performing academically for many of the participants were compounded by the volume of curricular requirements. The following participant's experience reflected what others shared in terms of the breadth of academic demands during the clerkship. One sees in the

quotation below the development of processes of adaptation in response to the academic workload.

It's easy to sort of get frustrated and say like "why would they give us all these unreasonable objectives knowing workload?" but then when you work through it and you spend the time doing it, you realize that it's on the Medical Council of Canada website for things we need to do on our LMCC [national licensing examination] so we're going to have to learn it. So it seems like NOSM copping out just basically saying learn all this stuff and you wonder. You'd expect a little bit more material I guess from them but then at the end this is exactly what we signed up for. This is the information we're going to have to cover regardless. So we have to go through it. And then we have also our DTS sessions so the distributed lecture, pre-recorded PowerPoints voiced over. I was mentioning that I spoke with another student about how they do their VARs and they do a totally different format. They'll have one student who'll have a case and a bunch of investigations and they'll sit down in a group and they'll just solely work through the approach to that patient and it's up to them after hours to look at the objectives. Whereas our group took the lead that whoever's doing the presentation will find all the details for those objectives and give it as a package to the rest of the students. Which is nice come exam time because you have everything in front of you. Which way is better? I don't know. [MS5-during]

Another participant identified the mental exhaustion associated with balancing her academic and workload demands. For example, she revealed that she just covered the necessary academic content or met the minimum clinical skills requirements at times due to the volume of demands.

I don't have a work-life balance right now. And it's actually something that now as students this is one of the things that we said that we really want. And I think you can't do it when you're living on someone else's schedule and agenda because even if I didn't have [other obligation] or actually probably catching up on a little bit more work that I should've been doing. I don't have enough time to do everything that I'm supposed to do. I just get by doing in some ways the minimum, and in some ways more than the minimum depending on what my priority is at the time. Like if it's right before an exam, my priority is going to be to study on the exam and let some clinical skills not fall but meet the minimums. Whereas if it's not exam time then maybe the readings and stuff don't get done and the summary notes get read instead for that week. But I mean it's balancing the amount of school work, not the amount of what else am I going to do with my spare time. It depends, it's manageable, but it's not manageable to do as much. The way the school work is laid out is just a bunch of questions based on some readings. And then there's a bunch of questions that are kind of left that aren't really in the readings, so you have to kind of go and research them. And then you're tested on that material for your exams. And then we have two lectures a month pretty much. So, I haven't listened to any of the lectures since our last exam. So there's been I think two that have come out. I'll eventually listen to them over Christmas. The last ones I listen to a week before the exam.

[MS9-during]

“My life is not my own this year” – Workload demands. Workload demands referred to the duties and responsibilities of being a clinician such as being on call, working long hours, and having limited breaks. The following participant expressively described the feelings of many others in terms of being overwhelmed by the workload demands they were expected to fulfill.

I don't like the feeling of constantly being on call here, like everybody is so 'gung ho' to make it work, like clinicians all, everybody has a hand in the pot to make things work but because of that your evenings don't feel like your own. You never feel like you truly have time to just be yourself with your family. My phone can go off at any time. I've always got my phone, I've always got a phone charger just because my life is not my own this year. That's the reality of practicing in this particular community. It's a psychological game for me to complete call. And as students we kind of at the beginning of the year you're, "what the hell is going on?" We raised our concerns about that, but our SLC, our clinician is very intent on having call that way mostly because it's sort of an antiquated system. That's what she went through when she was in third year so that's what you need to go through. So it's kind of like stick it to the man make the students do it, pass down this ancient system of scut work basically. I find it very hard to do. I don't like call in this community. I understand how it will give us the breadth of experience that we need. That's her counter-argument is that it will give you the breadth of experience that you'll need as a clinician because we don't have everything here that you would have in larger sites. I hear her there, but I think the hours are too long in a consecutive row. I would like to see them a little bit more fragmented, like if we have to do more call weekends then so be it, but not thirty-five hours in one weekend. Just shortening them and maybe making then every couple of weekends, like one day every couple of weekends, I can do that. But it's mentally exhausting, so that's the biggest adjustment that I've had to make. It's interesting there because when it comes to call like that, when you get to a point where you're physically and emotionally and mentally exhausted, you almost feel like you would do anything to sit down or you would do anything to grab a sandwich. That's the

way it is though. So I'm just telling myself, two more call weekends and you're done. I really wish that they would re-examine that from med students' perspective but our clinician seems very intent on keeping it the way it is and that's created some tension between the students and her. [MS10-during]

“You take it upon yourself and ask your preceptors” – Self-directed learning. Self-directed learning referred to the students' responsibilities to develop their own learning, including personal learning objectives and self-appraisal of their progress. From the outset Year One, self-directed learning is a key feature of the NOSM curriculum model. Although clinical leaders in the clerkship communities provide guidance for the students in relation to achieving learning outcomes, objectives, and competencies, self-directed learning was an approach which widely motivated participants since CCC provides opportunities to pursue learning in areas they were interested in. For example, the following participant described how she took responsibility of her own learning needs by asking her preceptors to help her develop patient management skills and treatment plans.

So we covered the eye within the lecture on special senses. But we never covered management, we never covered what's critical or what to be worried about, they have these red flags for something. When you have to refer to an ophthalmologist, when can you treat it yourself, what do you use antibiotics, do you not? How to use a slit lamp? And so we had covered a little bit of anatomy and stuff like that and but even then you know it's far gone in my memory [laughs]. And so to pull that up and then to come up with a lot of treatment and management, I found that the treatment and management was the part that I was like “Oh my god! I don't know anything about this”. So you take it upon yourself to ask your preceptors if they're in a teaching mood to say “can you come and

show me how to use the slit lamp?” Or even the patients, I had a patient today, she came in for bladder symptoms, but she’s just like “oh I have really bad macular degeneration” which is an eye thing and I said “Well do you mind if I just look in your eyes?” and she said “no that’s fine”, I said “I know you’re not here for this but I know you have something to see” so she was really good. And so now you have to address all these learning deficiencies and I’m sure every school has learning deficiencies, it’s not just NOSM but sort of all at once with this time commitment. And so I mean it means going to work all day and then coming home and doing more work [laughs]. [MS3-during]

The following participant explained the self-directed learning strategy she employed in terms of taking responsibility in pursuing learning opportunities. She described her approach to asking physicians to participate in as many encounters as they would allow her to take part in. She noted how effective this strategy was to gain exposure in areas of personal interest.

I guess there is an element of having a good fit between two people. So I’m not young, [laughs] so I’m motivated, right? I know what I want. I know specifically what I want, I’m pretty good at knowing what my deficits are and I’m pretty good at seeking out the learning opportunities. I come from self-directed. I’ve only ever been trained in self-directed so this was more of the same of what I’m used to and it worked out really quite well. For instance delivering babies, we were only required to do one. So I would make a trip to the obstetrical birthing area on a regular basis to check. And that’s really how I was able to participate in labour and deliveries because they are not good at calling students. And I would say that that would probably be a negative and I brought it up over and over and over again that you know, “babies are being born and we aren’t getting called.” So after complaining about it and having no action, I just thought okay I’m just going to

make a point to go there regularly and that's how I saw almost all six or seven births. The other thing that I, towards the end I felt like I really had a good handle on diabetes and targets and that sort of thing. So I felt that my focus should now be management. So let's talk drugs today and I think that the doctors that I worked with really appreciated that. So those are some examples. So that I could practice a little bit more of that because my relationship skills I think are fine. So I tended to try and focus on things where I have gaps, like the real medicine stuff, delivering babies, even lumps and bumps, "Can I do that? Can I close in the operating room? Can I do this" often the answer was "Yes." I was with my colleagues a few times who are quite younger and I don't think it crossed their mind to ask, "Can I do this?" because people forget that you're learning and you're interested and you want to be in there and the perception is that if you ask lots of questions and you ask to be involved then the feeling is the student is more keen. Opposed to the one that is actually keen but shy to ask. So, I think having that self-direction has been beneficial. Well it's easier said than done because and we would have discussions as a group, "Well how come you got to do this and why didn't you do that?" "Well because I asked" "Well how, like how do I ask?" "You just ask". But people are shy, people are insecure, people feel like they might be in the way. But I mean this was a year that was, I mean they took students, they agreed to take students and if you want the best experience then you have to jump in and sort of ask. [MS2-post]

Another participant described self-directed learning skills and strategies they utilized such as pursuing as many learning opportunities and challenging himself by seeking out more complicated patient cases.

Well I just tried to throw myself into everything that I could, if there was an interesting surgery coming up that I wanted to see I would just walk up to the OR walk up to the surgeon and say do you mind if I come watch today. I would stay hours after my shift to get a procedure if I knew something was going to be happening. You just start doing things that put yourself out there to get the learning, like when I was working hospitalist I found myself wanting to take the more complicated patients so I could try the extent of work and figure out what's going on and learn about what they have and what could be causing the problems and what could be attributed to their symptoms. I found myself throwing myself into more situations and just trying to get as much experience as I possibly could. I think that worked well for me, I think that's really the way I learn.

[MS7-post]

In the quotation below, the participant highlighted the resourceful strategies she employed to effectively self-direct her own their learning, including the use of electronic databases and publications.

We have lots of self-directed learning so I use eMedicine and UpToDate which are databases or websites a lot. I have my phone, I'm always looking things up on my iPhone, like drugs especially. I'll come across lots of new drugs every day, I mean you know the common ones. I'd look up conditions and stuff on my phone all the time just to get a refresher of how to manage and other programs I have on my phone are Lexicomp and PEPID and eMedicine. I have these Kaplan videos which are videos that prepare you for the USMLE step 1 and step 2 exam which is the equivalent of the LMCC in Canada. So it's the licensing exam in the US so it just goes over the specialties and everything you need to know and its hours and hours worth of video. And I also have them on audio files

on my phone so that I can listen to them in the car when I'm driving so that is convenient, switch things up a bit from having to read off a screen all the time [*laughs*]. The New England Journal of Medicine publishes clinical skills videos where you can watch how to do a lumbar puncture, how to insert a chest tube, how to do basic suturing, how to tap a joint, so those are really great. Ask a lot of questions to the doctors and the nursing staff that you are working with or whatever health professionals are around, see a lot of patients. They all have something to offer. [MS6-post]

Disorientation dilemma. There is a period of time during the clinical clerkship year which is known as the proverbial 'letdown', or a time when many students are faced with a disorientation dilemma (Haglund, aan het Rot, Cooper, Nestadt, Muller, Southwick et al., 2009). In the quotation below, the participant underscored the moments of burnout she experienced and also described the significance of having these moments as reference points to look back on and learn from.

I think there are times when you go through CCC and you are completely burned out. And I think that every time you overcome one of those periods is a huge transition because all of a sudden you feel completely refreshed and excited about being there again. And I think each one of those is a transition and is also a really good learning experience because you look back and you ask why was I so burned out? Was it just because we had an exam? Was it just because I just had four patients in a row that I didn't know how to manage? It was all over my head, I felt back like I was in the first day drowning again. I think for some of those, we definitely slip backwards a little bit afterwards, but then again you get to climb and you eventually get there. [MS9-post]

Many of the participants described challenges during the disorientation dilemma such as developing effective learning strategies, as well as the ongoing self-assessment that occurs when one monitors personal progress. For example, this participant revealed the ebbs and flows she had to contend with in the first few months of CCC. At one point while sharing this story, she asked me whether the other participants reported similarly, to which I responded “yes”. She continued with her response and deepened my understanding of the letdown period with the emotional detail she provided during the interview.

I think this year is hard on how would I say that, like on your own self-expectation on what you think you should know and what you actually know. I think most students get to a point in time where they're upset. I would say other students are in the same position where I don't know that they would say that they're depressed, but honestly I think that's what's going on [laughs]. I think we're all just feeling bummed out that we don't know what we should know, or what we feel we should know and that there isn't enough time in a day. You don't have control. I think that's the biggest thing, we're all control freaks so we don't have control over life anymore and that's the difficult part I think. Personally I don't know I just did, like I know this month I feel a hundred times better than I did last month. Like last month I thought maybe I should go on an antidepressant or something like maybe I should deal with this and this month I just feel better and I don't know why because I'm equally as busy. I think the group of docs that I work with is really really good and they're encouraging and that that really helps. I don't know how I deal with it, I just do. I don't know, you just deal with it I guess. I don't know if this is...oh I shouldn't ask you questions [laughs] you're supposed to be asking me questions, I was going to say do other, I was going to ask you if other third year students tell you similar things, because I

think this is kind of how it is. I don't if ever if anyone would talk about but it's true, it's to me at least. And I think that's exactly how it is that you feel like an idiot day to day, not from the patients. The docs are saying things which are normal but for some reason we're hypersensitive to it so a doc will say "you don't know how to treat this" and then I feel like an idiot and I'd go home and cry and then I think "why am I even worried about it?" Oh course I don't know how to treat this, I've never treated it before. So I think a lot of self-talk. [MS1-during]

The following participant expanded on the ebbs and flows of the disorientation dilemma by describing how she felt about the impact of managing many demands and challenges during the first few months of CCC. She also highlighted that the timing of the interview during the clerkship was very appropriate given that the first few months were very stressful and that she was looking forward to the upcoming Christmas break.

Well, I think we were told as an expectation that the first few months were like this, and then you kind of start feeling a little bit more confident, it's this escalating, what's the word I'm look, exponential kind of growth in terms of learning throughout CCC. I still don't feel like I've hit that corner where I start to go up yet. I'm not struggling really, like truthfully, I just think it would be nice to have a day to sleep. And I haven't had any episodes where I've broken down crying or been stressed out, like I'm not, I haven't found it that stressful, but at the same time I find myself getting more and more, like it's building up. And I think that's four weeks, as soon as I have a week off I think it'll be, or weekend off, which will be next weekend it'll be great and then it's Christmas. And I think I'll be nice and refreshed after that, so you actually, like in terms of catching us at times where things are stressful, you come at a good time [laughs] [MS9-during]

It is clear from the participants that they experienced significant demands and challenges associated with adapting to the clinical environment during the first few months of CCC. This was particularly relevant for the participants who had no previous experience working in a clinical setting. For example, during the post-clerkship interview, the following participant referred back to when she first arrived in the community and described the processes of adaptation she developed throughout clerkship.

I'm starting to feel more like a real doctor. I learned a lot this year because I've never spent a lot of time in a hospital environment before medical school. I was a teacher and I volunteered in a hospice for two years which isn't a hospital. I feel like I came so far working in a hospital for a year or eight months, well I definitely adapted, I know that. Because when I first got here, I was worried about a lot of different things, worried that I wouldn't have enough time to read and study everything, worried that I didn't know enough, that I was going to screw up. Just being comfortable in the environment that you're working and knowing the doctors and knowing what's expected of you and where you're support to go every day and all those things. You just get more comfortable in your environment. I don't know, how do you explain how you adapted? It just started to feel like, you know, you come here and everything feels really foreign and you fumble your way through, you don't know where you're going or when is it appropriate to stop and eat. But now when you work in the OR and you know there's always a ten to fifteen minute break in between cases and its okay to eat. But if you've never worked in an OR, there's really not a scheduled lunch but there's always some time between cases, so you adapt, you figure it out. [MS6-post]

This participant revealed the processes of adaptation she developed to optimize her clinical learning throughout the CCC.

So first few months go by very quickly just because you're trying to figure out where you are, what you're doing in the community itself. If you're not familiar with the community it's hard to connect to local resources if you just, you're not aware of what they are. That was sort of the beginning portion of the year is, is feeling your way through things, trying to figure out your colleagues, your preceptors that kind of thing. And then I'd say it began getting more of a comfortable routine around, probably around November, late October-November when you start to figure out what it is that you're expected to do as a learner at the site. And then Christmas came very quickly, the second half of the year went by even quicker [*laughs*] having figured out, established your role. People know who you are especially at a smaller site, so they know what to expect of you as well. Made the second half of the year go by extremely quickly, and the style of the rotation that we did at our site, where you were three weeks with a preceptor and then you would switch to another so that makes time go by very quickly. So overall I guess I would characterize it as a very condensed clinical learning experience. Very helpful towards our ultimate goal of being a practicing physician, very relevant to our education need at this time. [MS10-post]

Another participant described the adaptive strategies she developed to overcome the volume of coursework. Specifically, she referred to the realization she made in terms of trying to accomplish too much. As she progressed throughout the clerkship, she changed her learning strategies such as speed reading and carefully selecting which coursework to complete and when.

A lot of factors play into that, right? Why do you feel so low, so down and so wanting to quit? Well everything plays in it. So being away from home, being away from what you

know and the time you spend with, oh my goodness the researching and the studying and just the hours to work. You have to work while you're doing that so I guess it really takes a toll on you after a while, having to figure out when is it, after being on call 48 hours and you still have a case to present the next morning. When do you find the time to do your work and do your homework? I tried a bunch of different things. Mainly by the end of the year I realized maybe I was putting too much emphasis on trying to do all my homework. [laughs] So figuring out what's important to do, I guess "do I really need to do every single reading?" no maybe not [laughs]. You read diagonally, so I tried, well it's skimming. I got to procrastinate it more and more by the end of the year, like putting off my work. But I guess that's just being a student as well, like I've done that through all my university [laughs]. If you don't feel the stress, you don't feel like doing it, right? [MS11-post]

According to Haas and Shaffir (1987), the disorientation dilemma is a time when "the problem for all students is assessing whether, in fact, they know what they believe they need to know in order to feel, and be, trustworthy when facing serious medical crises" (p. 38). Haglund and colleagues (2009) reported that students perceived not knowing enough, or felt they were not meeting the preceptors' expectations. I first began to understand this concept when the key informants for the present study described a similar first few months of clerkship as a time when they did not know whether they were doing things the correct way, or whether they were meeting the preceptors' expectations, or how to assess how much they were learning and whether it was enough. The findings suggest that the participants adapted to these intensive first few months using several strategies.

Professional socialization of becoming a physician. Early clinical training experiences of medical learners, such as third-year clerkship, contribute to the processes of professional identity formation (Treadway & Chatterjee, 2011). The sub-themes that were considered by the participants when they described the professional socialization of becoming a physician were: (a) “the role of physician started to feel like it fit” – the transition to becoming a physician, (b) “this had a major impact on me” – clinically-significant moments, (c) “I don’t consider myself business-savvy” – business aspects of medicine, (d) “I’m not at any deficit for my background” – educational background, (e) “it’s gradual but it’s definitely noticeable” – adaptive expertise, and (f) “there are certain patients that break my heart” – empathy for patients. Each sub-theme will be discussed in turn.

“The role of physician started to feel like it fit” – Transition to becoming a physician.

Central to the hidden curriculum in medical education is the complexity of learning what it is to become a physician. The term complexity in this case referred to the multitude of competencies students must develop, in addition to the professional socialization to medicine. For example, this participant recognized the importance of experiential learning in terms of the transition to becoming a physician.

I wish at the beginning of the year I was told these things. The things that we talk about, that “it’s going to be really busy and that you’re going to hate it and some people get kind of depressed and you won’t have time for things but by the end it’s going to be okay. And just to trust it, trust the process”. We were told a lot about what to do in CCC like, “you must wear your lab coat here and you must meet at this time and most people round” and all this kind of stuff, and how to dictate and all that. We were never told what to expect on a personal or emotional level, and the type of learning that you’ll acquire because when I

came in I thought I would learn more like first and second year, which is weird. I knew it wasn't going to be didactic but I thought I would learn like clinical skills and those types of things. But really this year what I learned is how to be a clinician, right? Like how to walk a certain walk you know and that just came naturally. And everyone is different, it's not like the school's jamming that down your throat saying, "you must be this kind of physician." But you just learn that through what CCC is. So I think if there was anything we didn't talk about, it was I guess you and I have probably talked about that before but I think that it would be nice for students to have this perspective early, to be able to hear the kind of overall experience beginning to end. So that they don't get discouraged. I think that would be good. But maybe again on the other side of that, maybe that being discouraged is part of the learning, part of the growing too, so I don't know. It's hard to say. I guess that the learning is fundamental to medicine but it's not medicine.[laughs] Like you do learn a lot of medicine, but you also learn a lot of other things which you need to be a physician but are not lab tests and physical history. They are more subtle than that. I guess that's where the learning. There's a lot of kind of hidden learning, things that you're learning while you're doing a particular task but it's not learning about that task, if that makes sense. A hidden curriculum, there it is. It's true. [MS1-post]

Another participant described his view on the transition to becoming a physician and discussed how the physicians in his surroundings helped alleviate some of the pressures. He underscored the processes of adaptation he developed in relation to professional identity formation as a result of helpful advice from physicians.

I've always identified that I want to be part of this profession. Like when I was younger I did all the lifeguarding and first aid and things like that so I've always wanted to be first

responder and get in and do that kind of thing. Now realizing that I'm actually a part of that has been sort of almost a surreal experience. The first time you step out of doing like a twelve hour emerge shift, like you do an all-nighter sort of thing, and you go home and go "like I just worked that" and here are times where you go home and sometimes you're not exactly sure of the decisions that you made that day about some management things and you'll sit down and I'll read about it or I'll try to go to sleep and you're thinking, "well okay am I going to get a call at two o'clock in the morning saying like, 'your patient's having trouble breathing right now' and I was, like okay was I right to put their IV back up sort of thing". So it gives you sort of this I guess almost unwanted responsibility at this point because I still feel like I don't know as much as I need to. And at the same time though I want that responsibility, so I'll learn. But as [preceptor] in [home campus community] put it, I had her for SCS one time and she said it very well, she said "medicine is a profession where you will never know everything again, you can't it's just such a broad field where you will never know everything about medicine ever again. So come to terms with that and get used to it". And I think I'm starting to transition into that and saying, "okay I don't know enough about that, but I know where to find that information". Whereas before when I was doing my undergrad I did biochemistry and psychology and if I didn't know everything coming into that test on cell signaling, right, it's over [laughs]. But whereas here, we know the basics, we know the physiology and things like that. It's coming up and the only way we are going to learn a disease is by repetition and clinical experience. But knowing that there's always someone that you can call to help you and there's always references that you can go to and I think

now I'm getting more used to saying "you know what? I don't know" whereas before I'd always want to be like, "why don't I know?" [MS7-during]

The following participant expressed how the feeling of belonging to both the broader community and the medical community facilitated adaptation and enhanced the clerkship experience. She explained this by describing how comfortable she felt taking me on a tour of the hospital whereas she would not have felt comfortable doing so at the beginning of the clerkship.

I think this year is the year that I can really feel the community engaged learning because we are in a different community all year and I feel like I am part of the medical community here, at first I didn't [laughs]. But then you get to know all the doctors and you get to know the nurses and you go the hospital and you know where you're going, you know people. Like taking you on the tour today I felt like this is my hospital, this is where I work. And if you would have come at the beginning of the year, I wouldn't have felt that way and I wouldn't have been able to introduce you to people so, yeah I feel like I'm part of this, this is my medical community now. [MS6-during]

One sees in the quotation below how the participant engaged in deliberate reflection either immediately during or following clinical encounters. He explained that this reflective approach helped him consolidate his observations of becoming a physician and related them to his ongoing identity formation as a physician.

As a learner it's important to not run down that road without checking yourself out once in a while because then you're going to make a mistake and the preceptors would obviously pick up on it but you don't necessarily learn from it in the right way. Just as in anything in life you can, somebody can tell you something, you can take the idea and run with it and try and defend that idea. So say you come in with a cough, I can say you've

got pneumonia, when really you don't but because of a certain story you told me or and I went looking for a certain something I could keep going to the next level, and level, level without actually stopping and saying oh wait a minute he's choking on a penny, right? Like I didn't ask you what you were doing with the Jolly Rancher in your mouth. So I think as a physician, but more importantly as a student we have to sort of really question the history we have, the exam we have, the exams we have in front of us, the lab results more frequently because we don't really know what the answers are. So, going back again to my whole idea of last year was important in learning this process, it's a slow process because we have to continually check ourselves to make sure that we're not missing something or that we're not taking something out of context. I still very much see myself as a learner I don't feel confident in any decision making. I think that even as a resident that's something that will stay with me, probably even as a physician. [MS5-post]

The following participant elaborated on the processes they developed through their experiences participating in the different clinical environments and the gradual adaptation to the medical profession. She explained that part of the professional socialization is about being self-aware of the type of physician one would like to become. She emphasized that becoming a physician is an ongoing process and not a fixed endpoint.

It's a very slow process because I think it took me like two whole years of medical school to even believe I was in medical school, you know? Because you're somewhat removed from it, because you're in the classroom, and then when you're in the clinic you're not really doing things that are very extensive, it's only when you start having certain responsibilities. You just get used to a little bit more in that role, that you start to realize that you're actually going to be a doctor, and same with knowing what it is that a doctor

does, like you really have no idea, until you get out and see, and you have this really romanticized notion, I think. Then you realize that you need to develop some skills like to protect yourself from the really unromantic reality, right? So I think medical school is all about first accepting the reality and then trying to deal with it, and I'm more in the starting to deal with it phase. Well, I don't know because it's hard to say because again, it's not something that I think about really, because I'm so busy just doing things, like I can't narrow it down to a certain moment. I think it's more of like a slow absorption of things, and you sort of think like, it's this hard as a student, you start to realize as you get farther in the years that like, there's no way that when you graduate that you're going to feel like a doctor, so you sort of I guess accept that that's sort of how it is, right? It's a process, it's not like you're a student, student, student and then boom, you know? It's like you're just on a path, you just continue. I don't know, I guess I just think that I'm more realistic now just as I hear myself talking, so I must have absorbed something from hearing physicians talk about things. I mean it's definitely a significant thing, but at the same time I think at the age that I'm at, you have a pretty solid personality so there's not very much about me that is going to change. It's more of a matter of adapting the profession to me as opposed to the other way around. I would like to find a doctor that does things the way that I want to do them, I mean maybe that's, or somebody as close as I could find them, cause I don't think I've met that person yet, although maybe I have. I'm not sure, I think if I met somebody like that I would be really scared of them [laughter]. Well, it's like taking what you see and picking and choosing what you want to emulate, you know? And then experimenting sort of with what you do, not very deliberately but, I'm sure that's going on all the time and I don't realize it, you know like

even in friendly conversation, we pick things up and use them, of course if you're in the clinical area so much and you're paying attention so much, you're going to pick things up and use them. [MS8-post]

Another participant described the process of becoming a physician in terms of gaining confidence and developing competence by the end of the clerkship. She highlighted the personal and professional growth she experienced in terms of being comfortable taking on more responsibilities.

That's a little bit challenging I think as an overview I would say looking back now, the past eight months have been really valuable in terms of gaining experience and knowledge but mostly I think in terms of confidence and feeling like competency is growing as a physician and making that transition from student to physician. I can really value the enormity of that transition at this point in the year, whereas obviously it wasn't really clear at the beginning of the year, or even in the middle. So it's nice at this point to really be able to see the transition and how far I've come and how much more comfortable I am with things and also to have a lot of the doctors I was working with to sort of echo that feeling and that perception for me. So that was for me I guess the main point of CCC. The role of physician started to feel like it fit, and it felt really great to finish up and feel like I was at the point where I should be. I would probably describe it similar to what I had said before really, it's more of a longitudinal thing starting at the beginning of the year with just not having much responsibility and kind of learning the ropes and growing through that towards the end of the year and a lot of that has changed. So instead of presenting your case to your preceptor and saying, "I think this is what the problem is and I'm not sure what the treatment is but I think it would be this". And then

they'd see the patient with you and you'd discuss it more. And then towards the end of the year, they really encourage you to just become more confident in your skills and a little bit more committed to what your thought process is and to voice that. And so it's that part of the transition I think that is most evident especially to myself just because you're taking on that responsibility but you're also committing to it and just learning to be comfortable with that responsibility. I think for me that's been a big part of the transition too is learning how to be comfortable with that level of responsibility because that's a big change. Oh I definitely find that I'm much more decisive in my skills now, but I think that's probably more of the same transition just growing into being a physician and feeling confident with the knowledge and the skill set. I think that's really the thing I've noticed the most. Sometimes it's hard as I said before it's, in the middle of the year really don't notice any of these things, you think, "Oh my gosh! Like how am I improving? I feel the same as I did in September". But at this point I can definitely see the difference so sometimes it's the hardest part is actually to get your head out and be able to be a little bit more objective about where you've been and where you are. So I think that's also part of medical school, and it isn't always accommodating in terms of giving you the time to be able to step back like that and see how much you've changed or you've grown. But just having a little bit of breathing room right now at the end of third year, I definitely have the time to appreciate that change. [MS12-post]

“This had a major impact on me” – Clinically-significant moments. The participants described the significant circumstances they encountered throughout their clerkship. For example, the following participant shared an experience observing a physician complete a procedure on a patient in labour. The participant explained how troubling the encounter had been

for her in the sense that the physician froze the patient without discussing the procedure with her beforehand and obtaining consent. This patient encounter served as a clinically-significant moment for the participant in terms of consolidating what learning she was able to take away from the experience.

First, a woman that is in her first pregnancy that is about to deliver, or primey, we would call it, is labouring she, this particular physician actually froze her without telling her. Without asking her permission, without discussing “this is what I’m thinking, this is what I would like to do” and then he left it for, he froze her for a few minutes, then with another contraction went to do an episiotomy without discussing it first. So it was appalling to me and maybe this is one of your questions about what was impactful, this had a major impact on me, this whole incident. So, the woman stopped, because yes, she was having a contraction, but she also saw scissors and a needle. So she questioned him and said, “What are doing?” And I felt like he put quite a bit of pressure on her to go through with this episiotomy so that the baby would come out and worked on, “Aren’t you uncomfortable? Don’t you want this to end? Like I can make this end. Don’t you want?” That sort of a thing. And I was astounded [laughs], she ended up having the episiotomy and then I had the discussion with him after and said, “You know, that is why women choose midwives you know. You can’t practice like that in today’s day and age. Women have choice and women should be involved in the decision making”. And we had a frank discussion, and he talked about, “Well most of the time it’s really about me being impatient”. So it was a good discussion and then I felt badly later because I went home and reflected on the whole discussion and I thought, “Well was I too frank? Was I too honest?” And then I thought, “Well you know if we” and we never did get the opportunity

to speak again, but I thought, “Well he’s still valuable as a teacher because he readily does episiotomies” and that is a skill that you need to be able to have in the event of any critical incident where you need, where the baby needs to come out right now because it’s life or death. So he’s still a valuable person to be around because he probably does more episiotomies than average and so spending time with him you would learn that specific skill. You would learn more intervention. Even though I’m kind of opposed to that, so I tried to rationalize our discussion but I never did get the chance to talk to him about that.

But that had a major impact on me for sure. [MS2-post]

The same participant expressively described another clinically significant patient encounter with a woman in labour. Specifically, she elaborated on a difficult situation she had to work through while assisting her preceptor with another labouring mother. The labouring mother’s mother demonstratively did not want a medical student involved with the birth. The participant noted the helpful support from her preceptor in getting through this difficult moment by coaching her along and encouraging her to stand her ground.

I had an experience where I had a first time mom labouring and the mother, her mother, was there and was a mother bear and wanted nothing to do with me and didn’t want me there at all. And I felt it the moment that I walked in because [preceptor’s name] said, “Go and introduce yourself” so I went to introduce myself and I knew immediately just from her body language. The labouring mom didn’t have an issue with it. I could feel that. The mother of the labouring mother had a major issue with me being there so I approached [preceptor’s name] immediately because I could sense that she was going to give me a hard time and I’m in a learning mode here and it’s fall, I just got there. “So how, so this is what I’ve sensed. I feel that she is going to give me trouble, do you how do you feel about

this?” And she said well, “Do you want to be there?” And I said, “Yeah I want to be there! I want to do this for a living.” And she said, “Okay.” She goes, “Then I want you to be there.” I said, “Okay.” So you know I said, “Okay so when she gives me a hard time because I know she’s going to, are you are you in support of me being here?” And she said, “Yes.” So I didn’t ask specifically if I could participate because I had the non-verbal cues from the mom, the labouring mom that it was okay. So I felt that I could. I could continue being there and I was anticipating the mother bear to throw out comments, which she did [laughs]. You know and after several minutes and I’m being really warm and really friendly and I’m telling her all the stuff that I know and as it’s happening and and the mother the labouring mother’s mother was really quite rude and said, “Why are you here?” but because I had the backing of the physician I was able to handle it and I said, “Well, because I’m a learner and this is a teaching hospital and I’m working with [preceptor’s name], and so I’m here because this is my role today” and that was it. She tried to intimidate me, she tried to but because I had [preceptor’s name]’s support and I had the mom’s support, I didn’t move and I stayed where I was and things worked out in the end. But I knew she was going to give me a hard time [laughs]. I did gain a lot from that experience, I just needed to know because I’m strong enough to handle adverse relationships. [MS2-post]

Another participant explained the challenges associated with developing strategies to perform physical examinations or certain procedures on patients when they are invasive in nature. She described how she overcame the challenges of completing invasive procedures on patients by talking with them throughout the procedure. She shared how useful this strategy was in terms of trying to make the encounter more comfortable.

I guess yeah, there's a lot of responsibilities on you, like patients put a lot of trust in you that you are going to take care of them and they really, as a doctor you get to do a lot of things to people that most people, patients are vulnerable right like you're often examining them and doing invasive exams on them so, that's a lot of responsibilities. I am becoming more comfortable with patients. Like a lot of what we do to patients is very invasive so often I would feel very nervous when I would have to do a breast exam or a rectal exam or a pelvic exam so now I am more comfortable with it. I find it helps when you talk all the way through it then there is not this awkward silence while you're invading a patient. [MS6-during]

The same participant described how important her first experience completing a vaginal birth on her own was. The procedure was clinically-significant for her in terms of developing skills required for future practice.

My first vaginal birth on my own [*laughs*], that was sort of an aha moment, that's a pretty big moment. I don't know just guiding a baby out of the birth canal. I picked up that it had a cord wrapped around its neck right away and I was happy that I was able to remove it all on my own. And get the baby out. It actually happened late. I attended to a lot of women in labour and probably, well not a lot about five or six and they all ended up turning into C-sections. So there was good learning in it, like I got to do lots of pelvic exams to assess how dilated she was and how her labour was progressing. I got to help coach lots of women through pushing but the actual delivery part didn't happen until I guess the end of March. Well the other students here knew that I had, sort of had bad luck with it and they asked their preceptors to call me whenever they had a woman in labour. That's what happened and even some, when some of the preceptors did call me they were

still C-sections but eventually one of them turned into a vaginal birth. So I think obstetrics is an important skill for any doctor to learn because it's so universal. Even if I don't plan on doing obstetrics as part of my practice in the future it's still really fun to learn about. Lots of skills so like with the experience of the baby comes out, it's head is sort of in flexion and you need to put like downward pressure on the head and you're supposed to hold one hand on the woman's perineum and just put pressure there to prevent like tears. And then you get one shoulder out and, and then I got to clamp and cut the cord and then you have to deliver the placenta and there's sort of this special way that you deliver the placenta. You put pressure on the uterus and you sort of pull on the umbilical cord and put traction on it, so those are all skills and then when you get the placenta out you need to look at it all to make sure there are no missing pieces because if a woman has a retained placenta there's just a greater risk that she can hemorrhage. So the woman who's baby I delivered had a few tears and I didn't get to suture her up but that's okay I examined her to try and find all the different tears and I didn't find them all [*laughs*] because there's some sort of deep within the vagina that I missed but I found the obvious ones so it's all a good learning experience. [MS6-post]

Many of the participants described the changes in their examination approaches throughout clerkship. The following participant felt as if he had substantially improved his patient management skills in terms of eliciting information from the patients and completing physical examinations.

Yeah, so walking in there, at the end of August, early September, starting to see patients and coming back and presenting to your preceptor it was nerve racking because you didn't want to miss anything. You didn't want to come back in there and say what I didn't

ask that question and have it be one of the most important things, so it was more nerve racking at the beginning, and then just as you got more comfortable. As I got more comfortable asking the questions and I came up with approaches to different symptoms, and the kind of questions that I'm going to ask, and the kind of physical exam that I'm going to do, and it just became easier and easier and easier to walk in there and say "there's this, this, this and this makes me think it might be this, this is what I want to do, and do you agree? yes no, what would you do?" It just allowed me to feel comfortable walking in there and saying this is what I want to do whether I was right or not, and get their feedback, so being able to go and do this on your own and then work with preceptors that were so willing to teach and really enjoyed having students made the confidence sort of build all the way throughout the year. By the end of the year, I could almost manage patients on my own that were in the hospital and in family practice doing preventive care and things like writing notes to consultants and sending off referral letters and things like that so it gives you that exposure over and over and over again along with the class work that you're doing that increases your knowledge from that perspective and you get to apply it in the real world and it's stuff you'll never forget. [MS7-post]

In the quotation below, one sees the benefits of longitudinal patient management in relation to knowledge retention. This participant explained how organizing and implementing care and management plans for patients was more effective when she followed the patients over longer periods of time.

First off it helps to understand the role that a family doctor plays in the patient's life, right? You get to see the type of relationship that is built and how it works. But you also, because you're following through for so long you get to see how your management plan

is working out and why it's not working out and what you have to do to make it work out or what you have to do to change. I thought that was very interesting. It's feedback but it's a longitudinal kind of feedback, right? And it's real life [laughs]. I'm giving you this medication, I'll see you in three months to see if it works. That's an incredible kind of power to get [laughs], right? And me as a student got to build this, a relationship with patients so it's not just the physician watching the physician and his patient but me myself building a relationship and the patient coming back four months later and saying "oh you're still here, how are you doing?" and being comfortable with me. So yeah, that was amazing actually. Just being around and hearing it day in, day out, day in, day out. "You have high blood pressure, I'm putting you on a beta blocker" everyday, "You have diabetes, you're going to be on Metformin, you're going to be on Insulin" and this is, so hearing it every day for eight months kind of solidifies that, right? But just being faced with patients who have different situations and having to research on your own what, what can I offer this patient. So doing my own research and doing it on the spot, the patient is sitting there, I step out for two minutes to figure out what my plan is and then going back, that really helps because you're doing it, it's not somebody just randomly telling you what to do, you're the one who's implementing, right? So that really helps with the education, you're really solidifying and remembering things. [MS11-post]

"I don't consider myself business-savvy" – Business aspects of medicine. The business aspects of medicine referred to understanding the healthcare system and health policy. The participants recognized early on that physicians played an integral role in healthcare organizations and the health system.

Well the business part aspect of family medicine is something that I am interested in and I do ask those questions. I get varied answers. Not everybody is keen to talk about that and thinks that perhaps I shouldn't be thinking about that at this juncture and that I should be focusing on clinical. Whereas other physicians think "oh it's really interesting that you're thinking about this already and it is important". So the business aspect I would like to know more of, I'm not sure that everybody's keen to talk about the business aspect, at least here. But yes, the business aspect is important, and how am I going to know those billing codes, and the A007s. I feel completely overwhelmed by that, and I do ask those questions [laughs]. I don't feel that I have a business background, I don't consider myself business-savvy. So those are things that I do worry about. I feel that the learning is going to come and I don't have to stress too much about that. I do stress about the business part, and who am I going to work with? And how am I going to do this? How do I get an EMR and be part of a team. Those things cause me some anxiety because I'm not sure when that education comes, or if it even does come. [MS2-during]

The following participant expressively explained his views of how physicians participate in the health system and how they must manage their practice and career.

Oh for sure it is, I guess there's a few facets to that question, when you say business side, there's like the income earning and how to do that which is tricky to learn because there's so many different FHNs and PHOs and Health Teams and how money is distributed to through the LHINs which in itself is a business model. So it's hard to try and learn that, but to just hear how things are done and you know how there's different ways to incorporate yourself to protect yourself etc. it's not something we're actively trying to learn but it's something that just seeing how people run it or how they do their billings

and keep track of things, not only for their own like well-being so that they're making a living but also so that they're organized and that they're protected in terms of documenting what they've done and how they do things. Like you hear the horror stories of the general practitioner who works just to keep their clinic open in order to make ends meet they're seeing forty or fifty patients a day in ten-minute windows, but if you're on one of these different sort of plans or Health Teams you have the luxury of spending twenty minutes with your patient, thirty minutes with your patient if you need to. I think that it's more relaxed for the physician and it's better for the patient. These aren't things that we've all really learned though, but just to see how things are operating and because it's always sort of in academics it's always like oh you don't want to ask those questions that's not what, you're not to learn about that. It's just assumed that you're going to know it [laughs]. [MS5-during]

“I’m not at any deficit for my background” – Educational background. It is proposed herein that students who arrive at clerkship with a background other than the health and medical sciences should be aware of the pitfalls of not having the biomedical information to synthesize what is being learned in the early years. One sees in the quotation below that the transition to the clerkship for a student with an arts background resulted in a positive shift. For example, this participant explained being able to embrace her academic background during the clerkship.

I think so [referring to competence]. I would say that's probably something that's developed more over the course of this year as well. Because in first and second year when so much of schooling is academic based and that you're surrounded with your colleagues and the other students in my class. I didn't often feel like it was a bonus. I often felt like it was a little bit more of a drawback for me and a negative that I was kind

of carrying this arts background rather than a science one. And a number of the professors would always say to me, “Oh, just wait. You know at some point it’s going to end up being a bonus for you rather than anything else and you’ll be glad that you have it”. And I would have days where I would flip-flop about it, but I definitely felt that shift this year and definitely take much more pride in the fact that my background is different because I do think that that it gives me, not necessarily an edge but it gives me a different perspective on how I practice and how I approach things which I think is a benefit.

[MS12-post]

By the time clerkship was underway, the same participant revealed that her educational background contributed to developing adaptive strategies for the psychosocial aspects of medicine. She described having worked extra hard during the pre-clerkship years to establish a solid medical sciences knowledge base, and how the clerkship provided her with the opportunities to exemplify her interpersonal skills.

And just coming from my background of not being a science student this was the year where I finally felt like I caught up to my classmates. And I truly feel at this point that I’m not at any deficit for my background in any way. So that was really nice part of the transition of third year as well is I feel like I’m not playing catch up as much with the knowledge base, whereas in first and second year it was a lot of catch up for me. But it was very nice to kind of have that part of school ease up a little bit and just start to focus more on the clinical aspect and adding to my knowledge base rather than building it [laughs] so that was really great. A big part of this year is almost like a, try think of the right word but it’s, you’re working basically, you know, you’re in the environment with all the nurses and the office staff as well as the doctors and you need to know how to

work with people, you need to know how to ask things politely or something doesn't happen the way you wanted to, how to express that professionally, and to work with your colleagues and to be collegial and that's something that I have a lot of experience in from my previous life and career. And just having already had some jobs and worked in different environments and as a [professional] I worked with a lot of difficult personalities so it's definitely an experience that I have that I think makes things easier at times for me. So I felt really confident in the work environment and working with people and just creating that team atmosphere that's always talked about and strived for in work places. So for me that wasn't a challenge, and that was often commented on in my evaluations that I was easy to work with and worked well with everyone on staff and good with the patients. So the personal part of the job, in terms of the talking to people, relating to people whether it's with staff or your patients or communicating things that's something that I've learned previously, which is a skill that I really value and really came as a bonus number of times this past year. So that's been a wonderful gift I think from my previous profession that I don't think I could value any more. It [laughs] it saved me a few times. I think that's really the main thing I think that kind of stood out for me and just being able to see things from a different perspective just simply from my learning background too, it's always a bonus. And I've often found that with my colleagues who do have a science background is that there's a lot of stress put on themselves that, "Oh! I should know that." And there's a lot of time spent trying to think or recall things and I just, I never worry about that I just say, "Oh! Well maybe I need to review that or maybe I need to learn that." And I just go and do it and I don't ever worry about that external pressure that maybe would have come with my background or theirs being science. So that has always

given me a little bit more freedom in that sense, and I think that as things are evolving in the field too it's important to own your deficits and since I came into the field with a lot of deficits I find it very easy to say, "Oh! I don't know that." Even when I'm with a patient or, you know, to say, "I'm not sure about that, let me check it for you or let me look it up for you." And I've never had anyone at any point say, "Oh! You didn't learn science there? I'm not sure if I want to, if I want you to be my doctor or for you to be listening to this". It's never been a concern for anyone and I think often it's appreciated that I'm open enough to say, "Oh, I don't know about that. Let me learn it for you and look it up for you". So I think in the end it's actually made it a little bit easier to transition into the way that medicine is being practiced now and is definitely going to evolve more into as the technology in the field grows. So, I think it's definitely a bonus in the end.

[MS12-post]

"It's gradual but it's definitely noticeable" – Adaptive expertise. Within the context of the present study, adaptive expertise was exemplified by how the participants described developing processes of adaptation as a result of repeatedly encountering common conditions and completing common procedure during eight months. For example, this participant explained how she developed competence and how her confidence due to deliberate practice.

I think that I can feel growth and development, I can feel my comfort increasing with certain things where I had an insecurity with for instance, chest pains, weakness, dizzy, those, those vague symptoms that could be ominous that I've been scared of forcing myself to go and see them and having physicians push me in that direction. That fear is decreasing and my competence, my feeling of competency is increasing. So I think those are good things. The increased confidence, I think it's just practice, practice, practice.

Seeing patients, facing your fears. My natural inclination is to avoid those, right? In the emergency department, see a chest pain, or a dizzy or a weakness “oh I don’t want that” but I take them, because I know that this is what this year is for. You need to develop some comfort. So yeah, I think it, competency is about seeing patients and practicing and just continuing to practice the skills and learning new ones. [MS2-during]

One sees in the quotation below how building confidence can result from seeing many patients presenting with common conditions throughout clerkship.

Well at first it’s challenging like it’s a big transition into clinical medicine, as you see more patients you start to gain more confidence and there’s some things that I am totally confident of diagnosing on my own now as a third year student like a urinary tract infection for example, like it’s so common and really easy to pick up on and things. I am just starting to be really confident in the real easy things that you see all the time. And I mean it’s just a really easy thing to diagnose [laughs] and the treatment. I guess because it’s really common. Like at this time of the year, you have a lot of kids coming in with coughs and colds and I am pretty confident that I know what a child in respiratory distress looks like, like a really sick child that needs to be seen right away. [MS6-during]

Due to the high prevalence of certain chronic diseases in Northern Ontario, the following participant described developing adaptive expertise with chronic disease management as a result of the increased exposure.

Yeah so, I mean diabetes is a huge problem in Northern Ontario right so a lot of primary care clinic time is dedicated to managing diabetes long-term. And so it’s repetition of patients and repetition of seeing the same thing, going through the medications they’re on, talking to them and managing medications like that and learning the guidelines for targets

and goals for blood sugar, blood pressure, things like that and being able to apply them to the situation. So it's definitely the repetition and then going through and talking to your preceptors and seeing what they like to prescribe and things like that and you can come back and use your own ideas and they have no problem with you throwing out your own ideas and things like that. It's definitely just repetition so like I mean I'd see in a typical clinic morning, I'd see probably eight to, about eight patients or so and at least three would be diabetics, right? So it's heavy heavy repetition and through seeing chronic diseases like that you also see high blood pressure, high cholesterol, these other things that you are going to be managing chronic, long-term. And you pick up through repetition, what medications seem to work for what population and things like that. But yeah so repeat, repeat, repeat, repeat, retain, right? [MS7-during]

As it relates to deliberate practice, this participant explained the benefits of repeating procedures for skill acquisition, knowledge retention, and the development of competence in relation to longitudinal learning during the CCC.

It's gradual but it's definitely noticeable, just accumulating knowledge, really seeing patterns in actual people rather than in a book makes a huge difference. I definitely feel a lot more competent in my skills and in certain areas, especially where I've had repetition of those skills, right. It's definitely been developing over time. Like I've had the opportunity to deliver a few babies and the first one I delivered well the doctor had their hands on mine, like "do this and do this" and I had no idea. But now, you know, I've done a few and I'm a lot more competent with what I'm doing and I'm more comfortable so mom's more comfortable, the docs more comfortable. So it just, you know, it progresses for sure. [MS12-during]

“There are certain patients that break my heart” – Empathy for patients. The participants described several aspects of compassionate and patient-centred care. From the outset of Year One, there are specific curricular elements related to professionalism and personal and ethical consideration integrated throughout the NOSM curriculum. One sees in the quotation below the personal connections the participant shared with patients and families he encountered.

At the same time you're also sort of like “wow, that's pretty serious”. I remember the first code, the first person that died here was, you'd sit back and think about it for a long time. The first thing that you're involved in you actually, I don't know it's just one of those times where you think about things and you reflect and you're like “well that was tragic didn't think it would have worked out that way” or “it's too bad it worked out that way” or and you see a different aspect that you can't really get out of the textbook. But on the same token you also see the people you also see the people who come in and they get better so I think that, it's something you don't actively think about but every once in while you catch yourself thinking about what's going on and how things have worked out. So that's one of the big things that you often reflect on, I think. I don't know how you'd adjust to it, it's just sort of one of the realizations that we've all experienced death in different sort of facets of life, whether it be a family member, a relative, or a friend but then to be actively part of the system and seeing it from a different perspective and seeing tragedy that's you know you're involved in it but you're not too involved in it. You see the effect of that on the people around you it's just different feeling and it's nice as us for students because we're so close it's easy to, say back going back to the support question earlier, sort of coming home and being like “today was kind of a crazy day” you know and then sort of walking through it and then they may have seen something similar

to that two weeks ago so they can really relate to that. And talk about it and just you know it sparks some interesting conversations that are really reflective and I think that those are the sort of supports and conversations that you need to have to be able to emotionally work through those steps and you wonder how like some of these doctors here can just keep going on and see these things happen day-in day-out. It just seems like routine to them but that's something that they've had to process along the way. That's probably one of the biggest things is seeing medicine as a whole both in how it's provided and but also sort of the big picture and how it affects somebody and their family, which is something you don't even think about. Well, you think about it but you can't actually grasp it in the first two years of medical school. As we're given more responsibility in residency and what not you know those are things that are going to play a bigger role in how you manage those emotions. [MS5-during]

Many of the significant moments or events deemed to be particularly meaningful for the participants demonstrated the development personal expressions of empathy for patients. The following participant's experience was particularly emotional when she shared it with me. She expressively described her first encounter with losing a patient and the personal connection she had established with the patient.

Values or attitude, I mean you have to care about your patients. That is a big, big thing. I actually lost my first patient this week, I had my first patient die on me so she came, I wasn't working emerge, I was working internal medicine like I told you this week and so the internal medical docs will consult on all your heart attacks, all your strokes things like that. We had a 93-year old woman come to emerge with a heart attack so they called in an internal medicine for a consult and at that point we took over her care so we did some of

the standard things that you do when somebody has a heart attack but she was a DNR so extensive measures weren't to be taken. The doctor was on the phone with the daughter all the time "this is what we're going to do, what do you want us to do?" [big breath], they gave her a drug that breaks up the clot because it's a clot in your coronary artery. We gave her lots of morphine to help with the pain and things like that and when she came in she was really you know conscious and aware and she was telling me how much pain she was in and then slowly she started to go downhill and she wasn't as responsive as she was when she first came in. They were transferring her from emerge into the Special Care Unit that I was telling you about where [preceptor's name] and I were working and as the nurses were bringing her over she just stopped breathing. So, she was a DNR so, I mean we didn't resuscitate her but we did give her a medication, there's a medication called urocanic reverse the effects of narcotics. One of the side effects of morphine is respiratory depression so there was a chance she could have stopped breathing because of the morphine she got I mean that is a side effect to the medication so we gave her this urocanic to try and reverse the narcotic. I don't think that was the problem because she didn't come back after that. So [pause, big breath] that was hard and at that point you don't resuscitate her you just do the TLC sort of things so we held her hand and we talked to her and you're surrounded by people, you're not alone and. So that was the first time I ever saw somebody pass away in front of me so, I mean but, I mean she was 93 yrs old and speaking with her family she had been really healthy up until then and spent her winters in Florida so it sounded like she had a good life. I think more things like that are going to start to come up. You know the first time I have to tell parents that

their child has passed away or something like that, that is going to be a challenge. [MS6-during]

Another participant elaborated on the profound impact some of the patients she encountered had on her experience and future practice.

Oh and the other thing that I definitely noticed when I was in [community] is that there are certain patients that break my heart that I know I would take into my practice in family medicine. For example, you're working in emerge and somebody comes in and you have to let them know that they have a tumour or something, organize treatment for hepatitis or some sort of significant disease, for which having, or schizophrenia or something, and they are going to benefit a lot from having a family physician. I just know personally from seeing them and it just broke my heart when they didn't have a physician, like a family physician, other than the emergency department to help organize their care, because I felt like these people really needed that, and that's how sometimes you get family doctors, because somebody, I guess it's just sort of pity, right? Or you see the necessity or you have sympathy however you want to describe it, and you know you could help these people, and your job is to help people who are in need of help probably more so than a 25-year old younger patient in your office who doesn't come that often. So I know that I'm going to accumulate a lot of patients especially if I work emerge or you know into my practice, that also told me that I need to start with a relatively small practice then add patients in as necessary over the course of my practice, for those people I feel really need a family doctor to organize their care, so that was one lesson that I think was really important from CCC. [MS3-post]

The following participant expressed the limited avenues available when patients present repeatedly with social problems and are seeking care. This participant noted the advocacy efforts she will uphold for the marginalized patients whenever possible.

There was another ah-ha moment I had as well, a certain patient that everybody in town considers a difficult patient he's the epitome of low socio-economic status, alcoholic, lived basically in very filthy conditions by choice. He would come into the emerge and everybody would roll their eyes and, "Oh you can take him. You can take him." you know? [laughs] his body odour was enough to make me vomit, he was quite difficult to deal with but the first meeting that I had with him, I mean, even though he was drunk he did remember me the second time that I had seen him and because I treated him with a shred of dignity [laughs] basically on the first encounter, nothing but professionalism, I had never seen him before, it was a clean slate, somebody new to talk to. When he saw me for the second time it was for an embarrassing problem but I think he felt more comfortable knowing that I was again there, and again willing to listen to him, difficult though, he is. And I remember the first time we were debating with the physician I said, "Do we admit him? Or do we not?" And we got into this interesting debate of beds, and justice, and social accountability and "do we have a bed available to him?" etcetera, etcetera, we went on and on and on. We chose not to admit him. But I did feel badly because I felt that he was slipping through the cracks and then the second time I said, "Okay I know that we're not admitting him. This is not a problem that's worth admission but we have to do something for this guy. I can't in good conscience send him home just because he's difficult to deal with" so we finally did something, it was very minimal. We just dictated a letter to the health unit saying, "Are there any resources that you can, even

a social worker that you can use to, to help this individual?” So I left the community knowing that at least I did something for him. And that was you know, I felt like I left some impression or at least I did something. I guess karma makes me feel good or whatever but I did something to help. And I think that, I hope that that translates into some positive change that I could leave for him, at least him, you know one member of the community so. [MS10-post]

Primary care delivery in Ontario faces many challenges, including increased costs, shortages of health human resources, and continuous advancements of technology (Kirby & LeBreton, 2002; Romanow, 2002). As a result of the vast geographical area of the province and the unique needs of the populations it serves, the delivery of primary care services ranges from one community to another (Canadian Medical Association., 2000). Throughout their clinical training “students need to actively participate in the fundamental processes of doctoring to acquire practical expertise and to grow into their professional roles” (Ogur & Hirsh, 2009, p. 844). Lave and Wenger (1991) characterized the process as legitimate peripheral participation whereby, in the current context, the medical students eventually became “legitimate participants” in the community of practice and the medical profession. The socialization occurs when students begin to establish and understand their own way of being as a physician and determine for themselves what good or bad medicine is and apply it to their own thinking and behaviour (Beagan, 1998; Gaufberg, Batalden, Sands, & Bell, 2010; Haas & Shaffir, 1987; Treadway & Chatterjee, 2011).

As a result of increased exposure to common clinical conditions and procedures, and multiple supervised encounters, it is proposed herein that through deliberate practice the participants developed adaptive expertise, a process by which a medical student develops

competencies, proficiency with procedural skills, and mastery of applied knowledge (Mylopoulos & Regehr, 2009). Similarities might be drawn to studies conducted by Worley and colleagues (Worley, Prideaux, Strasser, Silagy, & Magarey, 2000; Worley, Strasser, & Prideaux, 2004) in relation to the development of adaptive expertise as a result of increased exposure to common clinical conditions and confidence performing procedures during the Parallel Rural Community Curriculum at Flinders University, Australia. In comparison, due to the longitudinal feature of the CCC at the NOSM, the opportunities for continuity with patients and the parallel clinical exposure meant that over time they reached a steady state in their adaptation processes whilst “mak[ing] efficient use of past knowledge and experiences and innovatively creat[ing] new knowledge and ideas in response to novel problems” (Mylopoulos & Regehr, 2009, p. 128).

Charon (2001) stated that “sick people need physicians who can understand their diseases, treat their medical problems, and accompany them through their illnesses” (p. 1897). Cruess and Cruess (1997) characterized the role of the physician as one who requires the attributes of healer and professional, or physicianship. The term physicianship is “based upon a core set of definitions of professionalism and healing and a list of desired attributes that are seen to permeate the entire educational experience” (Boudreau, Cruess, & Cruess, 2011, p. 102). The concepts of emotional hardening (Newton, Barber, Clardy, Cleveland, & O’Sullivan, 2008) and the erosion of empathy (Feudtner, Christakis & Christakis, 1994; Hojat, Vergare, Maxwell, Brainard, Herrine, Isenberg et al., 2009) during third-year clerkship were previously discussed in the review of literature (see also Dyrbye, Thomas, & Shanafelt, 2006; Neumann, Edelhäuser, Tauschel, Fischer, Wirtz, Woopen et al., 2011; Woloschuk, Harasym, & Temple, 2004). However, self-awareness during these experiences can embolden personal growth in a medical student’s adaptation to a professional role (Novack, Epstein, & Paulsen, 1999), particularly

during longitudinal training (Boudreau, Cruess, & Cruess, 2011). There is evidence to suggest that the participants in the present study did not experience an erosion of empathy, rather they shared several expressions of empathy for patients throughout their clerkship.

Summary – Transitions

In this chapter, the participants' narratives provide a snapshot into the changes and transitions they experienced during the CCC. From the participants' perspectives, this study revealed what little is known about the changes and transitions medical students experience during longitudinal integrated clerkships. The findings provide an understanding of how the CCC has the potential to shape their professional identity. Specifically, the participants described the challenges they had to manage and, in response, the strategies they employed to adapt to in terms of their anticipations and anxieties ahead of clerkship, the transition from classroom learning to clinical learning, the disorientation dilemma, and the professional socialization of becoming a physician. As a result of the longitudinal process, the participants described gaining applied knowledge and competence, as well as an increase in their confidence. Empathy for patients emerged as being an integral aspect of the participants' interactions with patients. In the next chapter, I will elaborate on the key theme, personal well-being.

CHAPTER NINE

RESULTS AND DISCUSSION:

PERSONAL WELL-BEING

The Association of Faculties of Medicine of Canada, in their report *The Future of Medical Education in Canada: A Collective Vision for MD Education*, recommended considerable efforts should be made toward improving the health of Canadians (Association of Faculties of Medicine in Canada, 2010). The report however does not make any recommendations regarding the need for well-being teaching in the formal undergraduate curriculum to address the notion that “healthy medical students are likely to become healthy doctors who can then model and promote healthy lifestyles with their patients” (Wolf, 1994, p. 8). The key aspects that were considered by the participants when they described personal well-being were (a) “I’ve started scheduling my life and it seems to work” – strategies and personal lifestyles behaviours and (b) “incorporating some wellness into some learning” – implications for services and policy development. Each sub-theme will be discussed in turn.

“I’ve started scheduling my life and it seems to work” – Strategies and personal lifestyles behaviours. The participants in the present study discussed strategies and personal lifestyle behaviours they employed to improve a greater sense of personal well-being such as physical activity and nutrition. For example, one sees in the quotation below the mental exercise the participant described in terms of planning personal lifestyle behaviours.

I’m still trying to figure out exactly what works for me, right? I’ve started scheduling my life and it seems to work. I’ve got the schedule that they give us for when we need to be in clinic, things like that and then I schedule in other times around that when I’m going to

do work, when I'm going go to the gym and things like that. And I've found that since I started doing that I'm eating better, I'm exercising more and I've found time to sit down and read a book or just watch a movie and things like that. So that's sort of my approach to it [laughs] and it's a very intellectual, like sit down, write it out sort of thing. I found that there is time to do everything whereas before when I wasn't doing that I never thought I had time. And I feel that I'm getting more accomplished as well in terms of school work, exercise, eating well and just getting that time to unwind and relax since I started doing that. [MS7-during]

Another participant reflected further on the personal well-being strategies he employed which were aimed at preventing burnout.

And then you might have a little bit of a lighter week where you can go out and play soccer or you can go out and do this, it just sort of lets you sort of tune down the clerkship a little bit and get back to your senses and then feel a bit better because I think if you were doing non-stop work then you just burn out. I know we're all looking forward to Christmas holidays, it's sort of the topic just even in our last session, "oh it's going to be nice so nice to go home for a couple weeks" and do things at our own pace, and I think if we didn't have these other outlets these social outlets that that burnout would be that much closer. I think if I have, depends on the week, depends on the on the rotation that I'm on sort of what I'm doing, if I know that I'm going to have sort of the Friday afternoon off and I know the weather's going to be nice then I'll make it a point to put in my running shoes in my car so then afterwards I can go do that. I think if you didn't actually actively include that, then you wouldn't do it, you'd just get overwhelmed because there's always something you could be doing. [MS5-during]

The following participant described a wide range of strategies she developed along the way, particularly when it came to establishing a sleep schedule, as well as packing lunches and spare clothes.

I'd say sleep schedule, I've had to make adjustments there. I fall asleep at the drop of a pin, so that's never been a problem for me but sleeping at the hospital or sleeping in different environments, having to have clothes scattered, like a pair of clothes in your car just in case you end up in scrubs that have blood all over them, so you always have a pair of extra scrubs, you always have a pair of clothes. So I've had to make adjustments with like squirreling things away all over the place, having a care kit at the hospital just in case, always have a meal at the hospital. I always have a meal at the clinic that I'm working with, and I always have a meal in my car just in case. I've had to adjust that way instead of just having my little routine that I used to follow all the time, you know forget about that, that's not my reality anymore so figure out what you need to do, figure out how you're not, if you're feeling stressed you have to be introspective like "What isn't working for me? Well I didn't have time for lunch today because I didn't have it in my car. Well I'm going to have to have a lunch in my car". Like you have to be introspective and change your way of thinking so that you're more in tune with a clinical reality. That's not something that anybody can teach you, it's not something you can get out of a textbook it's just you have to find what works for you, nobody can tell you what's right or wrong so that's kind of what I do is I stash things away in like six different locations [laughs] so that I can do that. [MS10-during]

“Incorporating some wellness into some learning” – Implications for services and policy development. The need for increased awareness of mental health issues amongst medical

students was emphasized. Some of the participants felt there is still far too little attention to the need for the formal teaching of personal well-being in the curriculum. For example, this participant explained the additional consideration required for policy development regarding medical student well-being.

And I think it's, you know, we talk all about how our generation really wants to get this work-life balance but really we're not doing anything for ourselves while we're in school. Like if you look at, and I think this is something that we've talked about more on the provincial level is that really our clerkship students are not doing what they say they want to be doing. And part of it is the expectations of us by the physicians that are leading us, and part of it is our expectations of ourselves because we are all very much A type personality people and you want to excel and what to, and there is so much to learn that you can't give it up but I think they can find a way of incorporating some wellness into some learning. I don't think it would be that hard. And as I said, I don't think we can take away clinical time because I think really truthfully there's a lot of good learning. Like and as tired as I was and I said this to one of the doctors, like there were some days where all I wanted were just to have a morning off. Just let me sleep in, catch up and I will be completely refreshed. And they would say, "But then you might miss two or three really interesting cases" and I think I came to the realization that I don't really want to miss those two or three really interesting patients. I might want to stand a little bit more on the backlines on those days, and I think that might be another way of approaching it is, if you just have to go in one day every couple of weeks and, it's your opportunity to observe a little bit. I don't necessarily think that it should be scheduled in, but I think you should have the option of telling your physician "I'm completely" and not be embarrassed by it,

“I am completely burned out, do you mind if today, you know, I’ll see a couple of patients but can I kind of watch you interview today and pick up stuff from you? I just, I just feel like it’ll be more beneficial to my learning than me trying to figure things out.” Like the day after an exam is a perfect example. You’re not ready to go back in and start thinking if that makes sense, or the afternoon after an exam. But you could go in and absorb still. I actually think they should just give us the afternoon off after an exam which some communities did and some communities didn’t. That would actually be a huge thing.

[MS9-post]

Many participants discussed the relevance of mental health and wellness promotion. One sees in the quotation below the mobilization efforts by the local, provincial, and national student societies toward advocating for improved services and policy development.

I actually think a mental health day would be beyond needed at, like at a couple points. And I think with those mental health days, I could’ve come back and performed a thousand times better. Even there I wouldn’t even know who to ask to get one. I don’t necessarily think, like I think mental health has become a very recent media, like what’s the word, like the buzz words or whatever right? But they mean a lot of things for a lot of different people and I think just being tired and I think just doing those things people kind of need well, other people have done this before you can go ahead, and I think it’s true, but I don’t necessarily think it’s the healthiest of ways of looking at it. I know that within the provincial organization, actually the national student organization and our student society and stuff like that were looking at wellness and it’s actually like a big picture of what’s coming up. But I just for us, and it’s just been really unfortunate there’s been nothing there. I think the wellness part is a huge part and I think that really needs to be,

and I wouldn't have said that in the fall, but just with how tired it is and how I think I've always known it was going to be stressful but in terms of actual taking that day or figuring out how to cope with those things. I think it's really challenging and I think, or I've heard from other students that this is an ongoing challenge. So, that's a piece of the pie that, as I said it's become a buzz word, it's going to start being in everything and it won't continue to be a problem forever, but I think it's actually an important buzz word. I think it's actually just like the whole mental health stigma in general has started to become a buzz word in terms of this political provincial campaign and health accordance and stuff like that wellness in terms of medical students and mental health in terms of medical students I think is a big part and I think it doesn't bother you in first and second year because it's really just a continuation of undergrad. But come third year now all of a sudden now you're balancing being an undergrad student and being in your first year of work. [MS9-during]

The participants were generally aware of the support services available to them through the Centre for Addiction and Mental Health and access to independent clinicians. For example, this participant overviewed the services that students can access for personal health concerns.

Well last time I think I mentioned that NOSM had a mental support line in place. No experience with that so I wouldn't know how its working as a program I'm just glad that they've made it very aware that that program's there. Not sort of like, "Oh, by the way we've got mental support" like it was made very open and public so I think they are recognizing that isolation can be a factor here. Like I said, I don't know about the functionality of the program. But in the past I know that some learners have felt that Learner Affairs was not there for them in times of need. So I can feel that for them I can

feel that if they're feeling isolated in a community they feel disconnected from the school to begin with our favourite Learner Affairs person has left for another school and mental support is a touchy subject. I can see how they wouldn't want to reach out to grab a hold of that program and use it. Also you need a physician to sign off on a paper or to sign off on some sort of consult before you can get specialized help from the center in Toronto. So you have to go to some point to a clinician and when you're working in a tight sphere with clinicians here that can be embarrassing for someone and well I imagine it could be embarrassing for someone who doesn't want to admit that they're having problems adjusting and then there might be a fear of will this reflect poorly on my report, will this, who is it that I am going to be seeing? So in this community our site liaison clinician is acutely aware of that and she's, in the past there have, there has been a need for extra support in the students and she sets up appointments for us with a clinician that with don't work with throughout the year. So she has a disconnect from our clinical, our daily clinical reality. They've set that up intentionally so that if we do need medical appointments for whatever reason, at least it's not someone that we are going to be working with later on down the road. So I think they're trying to make that work. I don't know if it does but it seems like there's been effort there. [MS10-during]

How medical students learn to develop adaptive strategies may affect their health outcomes in the long-term, whilst benefiting the quality of health care with their patients, particularly with health promotion and disease prevention (Hillis, Perry, Carroll, Hibble, Davies, & Yousef, 2010; Novack, Epstein, & Paulsen, 1999; Yiu, 2005). According to Dunn, Iglewicz, and Moutier (2008), "medical student well-being, as the precursor to physician well-being, represents a critical aspect of medical training" (p. 45), whilst it is important to provide students

with teaching and learning opportunities to develop these skills. Hillis and colleagues (2010) explored the perspectives of medical students at five universities in Australia and New Zealand regarding their awareness of support services as well as their views on the well-being curriculum. Similar to the findings noted in their study, the participants in the present study were generally aware of the support services available to them through the Centre for Addiction and Mental Health and access to independent clinicians.

Summary – Personal well-being

The findings reported in this chapter contribute to our understanding of medical student well-being. Specifically, the participants discussed the adaptive strategies they developed in relation to personal lifestyle behaviours and how this may affect their health outcomes in the long-term. The participants noted that time management and learning how to organize priorities were helpful adaptive strategies. They also discussed considerations for services and policy development regarding medical student well-being. The last chapter focuses on the conclusions and limitations of this study, as well as the implications and recommendations for research on medical student adaptation emergent from the dissertation.

CHAPTER TEN

CONCLUSIONS

I will conclude this dissertation by providing an overview of the study, as well as a synopsis of its findings, and recommendations for further research. I will provide an overview of the purpose of the study, the significance of the study, and the employed research methods, and the study's limitations. The sections that follow are devoted to implications for medical students, the Northern Ontario School of Medicine (NOSM), the clerkship communities, and medical schools nationally and internationally. In following with the social constructivist research paradigm underpinning the study, the participants' perspectives are also included in relation to their suggestions and recommendations for future students, the NOSM, and advice regarding the suitability of authentic methods in medical education research. Lastly, I will discuss implications for rural and northern health and share my own personal experiences and reflections stemming from this investigation.

Purpose of the Study

The purpose of this study was to gain an understanding of how third-year medical students at the NOSM described their experience of their eight-month longitudinal integrated clerkship. I elicited a rich understanding from the perspectives of 12 students from the NOSM to answer the research question: how do third-year students at the Northern Ontario School of Medicine describe their experience developing processes of adaptation during their Comprehensive Community Clerkship? The supporting questions to help answer the main research question were: How do third-year medical students at the NOSM describe challenges and/or stressors they manage during the clerkship? How do third-year medical students at the

NOSM describe their experience employing strategies in response to the demands as encountered in their placement and living context? How do third-year medical students at the NOSM describe their experience developing processes of adaptation post-clerkship?

Significance of the Study

As Lazarus and Folkman (1984) indicated, the process of adaptation comprises four aspects including appraisal of stressors, coping responses, self-regulation strategies, and consolidated adaptation response. Individuals vary in their responses to stress, beginning with how they appraise the context and its meaning to them. Once the significance of the stressor has been appraised, individuals begin developing processes toward an adaptive response. Next, strategies are employed to restore balance using approaches such as self-regulating emotions, seeking out sources of support, and attempting to alter environmental conditions. If the individual does not employ effective coping responses to counter the demands, it is also possible they can become overwhelmed and perhaps even develop maladaptive processes. The consolidated adaptation response pertains to what was learned from undertaking the process.

The findings suggest that adaptation for third-year medical students training in rural and northern settings relates to the processes they undergo to achieve adaptation during significant transitions and circumstances, and also, what challenges and stressors they must manage within these important transitions. The participants managed several contextual challenges and described several changes they went through during their clerkship. Some of these challenges included the site selection process, the adjustment to the clinical environment, and the challenges associated with longitudinal integrated learning versus in block rotations. The key transitions included the disorientation dilemma, transitioning from a classroom learner to a clinician, as well as the professional socialization to becoming a physician. The participants' adaptation processes

depended on their stressors, and varied depending on the factors affecting them such as the clinical and community settings, whether they were training in their hometown, or whether they felt isolated. As a result, the description of these responses can provide insight for students entering longitudinal integrated clerkships. The study findings are comprehensive and likely reflect the experiences of other NOSM students and potentially of other students undertaking rural family practice based longitudinal integrated clerkships (LICs). The participants were drawn from eight of the 12 clerkship communities. Therefore, there is a good cross-section of communities including some in Northeastern and Northwestern Ontario, as well as varying population distribution. In addition, there is an even distribution of quotations from all participants. Finally, I observed repetition and consistency of comments across participants, which leads me to believe that a larger sample would likely not yield new information.

There are challenges unique to living and learning in a rural area during third-year of medical school including isolation and loneliness from friends and family, poor recreation facilities, and access to resources (Adams, Dollard, Hollins, & Petkov, 2005). Often times, as was reported by some participants in this study, there are negative perceptions associated with being a medical student at a 'northern school', such as traveling difficulties, lack of quality teaching and learning opportunities, and the lack of resources. Hopefully, this study and future region-specific studies can help offset those prejudgments. Precisely, there was indication that medical training in Northern Ontario communities, particularly during the CCC, offered tight knit community support. For example, many of the participants identified the uniqueness of the community's interest in their accomplishments.

The findings suggest that aspects of the participants' experiences stand out in contrast to many widely held assumptions about medical training in the context of rural family practice such

as inferior teaching by family physicians in non-teaching hospitals. For example, the teaching opportunities with family physicians were highly regarded by the participants. The participants lauded the fact their family physician preceptors were trained in other disciplines (e.g., emergency medicine, obstetrics, etc.) and take on several additional responsibilities in the community, whilst providing high quality teaching opportunities, positive role modeling, and maintaining work-life balance.

Community-based medical education consists of learning *in* the community context and various sociocultural and clinical settings rather than learning *about* them in the classroom setting (Tesson, Hudson, Strasser, & Hunt, 2009). There is evidence to suggest that the students are training in community hospitals where collaborative care is promoted and demonstrated rather than fragmented, which is often observed in large teaching hospitals. The participants described the benefits of interprofessional education as they developed a broader understanding of healthcare service delivery by learning in a community setting rather than in a teaching hospital setting. The low numbers of students in the communities contributed to making learning more accessible. Furthermore, the camaraderie and the shared reality support amongst students contrasted the self-promoting competitiveness often observed amongst students in other medical schools.

Based on the findings, the adage “it takes a village to raise a child” can certainly be understood as “it takes a community to train a physician”. The communities’ contributions to the students’ experiences promoted feelings of being part of the community and part of the North. They also described the plentiful recreational and outdoor opportunities. There are stark differences regarding whether or not the students choose to integrate themselves in the

community. The participants emphasized the importance of being active in the community and getting out meeting people in order to get familiarized with the community and the health needs.

As mentioned, researching the hidden curriculum opens up the possibility of uncovering findings that may be critical. Exploring the hidden curriculum from the students' perspectives was important in order to better understand their experiences during the CCC. The students described going to work rather than going to study, and saw themselves as members of the whole healthcare team. There is also evidence to suggest the students developed competencies, proficiency with clinical skills, and successfully consolidated what was learned during the clerkship. They demonstrated their commitment to lifelong learning. During the post-clerkship interviews, they described the positive effects the CCC had on their attitudes and beliefs of feeling like a physician and being ready to undertake fourth year.

Research Methods

The methodological relevance of employing a social constructivist research design and utilizing mobile methods to answer the research questions certainly added elements of rigour and authenticity to the entire process. The qualitative interviews and guided walks *in situ* created the space for an in-depth understanding of participants' lived experiences during their clerkship, particularly the opportunities to interview the same participants longitudinally. One of the key theoretical tenets of social constructivism is to ensure their voices are at the forefront, and this study provided the space for participants to their share their experiences and perspectives throughout the research.

Several of the participants' provided their viewpoints of the study's research methods such as the appropriateness of the interview topics and the guided walks. Specifically, they expressed how the methods used elicited experiences they previously felt would be difficult to

describe. The findings suggest that students would likely greatly benefit from opportunities to reflect on their clerkship experiences using similar methodological approaches. There is tremendous value added for the students by creating spaces for them to share and describe their clerkship experiences.

Limitations

The limitations with the present study pertain to: (a) participant recruitment, (b) gender differences, (c) representation of the data, and (d) the transferability of the findings. Each limitation will be discussed in turn.

Participant recruitment. The response rate for the study was 21.4%, or 12 of the 56 of students enrolled in clerkship. It is possible that, due to the small class size and an even smaller number of students in the various communities, potential participants may have worried about confidentiality being maintained. Furthermore, it is possible that they either did not have the time or interest in participating, or already felt over-studied/evaluated. The participant recruitment strategies utilized for the study were purposive convenience and snowball sampling (Patton, 2002). The goal with Patton's purposive sampling technique was not to seek representation rather it was to elicit rich contributions from those who agreed to participate. Snowball sampling proved to be very useful in that initial participants helped me network with other potential participants, particularly male participants. Though unsuccessful, attempts were also made using snowball sampling to recruit more participants with children. Participant recruitment might be improved for future studies, particularly involving medical students, by constantly communicating with them throughout the recruitment stage. Medical students are extremely busy therefore researchers should be persistent with their reminders.

Gender differences. Gender differences were not examined in the interpretation of the results. As mentioned, during initial discussions with the key informants (former NOSM graduates), they shared that gender was not a major factor during their CCC. Throughout the study, gender differences were not observed by any of the participants in their interpretations of their transcripts, meaning they did not provide any comments or feedback highlighting gender-based differences. In fact, upon further probing with some participants, particularly when they were discussing the study, they expressed that gender was not a significant factor in their experience. Researchers who have explored the professionalization experience of students and residents undertaking medical training have reported similar gender attitudes and beliefs (see Beagan, 2000; Dawn, 2008; Haas & Shaffir, 1987).

Representation of the data. In terms of the conceptual framework developed to represent the data, the themes and sub-themes that emerged were as a result of ongoing discussions with the participants. The rich descriptions were paramount in providing representative accounts of how 12 third-year medical students at the NOSM adapted during their clinical clerkship. When considering the volume of data in the form of several hundreds of pages, another limitation of the study is the constraint in selecting narratives that most appropriately conveyed the meanings of the themes and sub-themes in relation to the student experience. As previously mentioned, one of the participants reviewed the overall interpretation of the findings. In their feedback to me following their last review, they highlighted how authentic and rich the descriptions were compared to how they envisaged. They noted the contextual relevance of the themes, sub-themes, and the conceptual framework, which combined, expressively described the student experience of their clinical clerkship.

Transferability of the findings. The current study provides unique contributions to the literature. However, the strength of the study can also be regarded as its weakness. Specifically, the transferability of the findings may be a limitation. For example, a region-specific study can be perceived as unrepresentative of the challenges and adaptation processes described by medical students undertaking a longitudinal integrated clerkship (LIC) in another region. The study findings represent the experiences of 12 undergraduate medical students at one medical school who underwent their LIC in eight of the 12 communities in Northern Ontario who took part in the CCC at the time this study was conducted.

Implications of the Research and Recommendations

The dissertation explored key findings regarding medical student adaptation during a longitudinal integrated clerkship. This study has implications that extend to a broad range of groups, including: (a) medical students, (b) the NOSM, (c) community preceptors, (d) patients, (e) clerkship communities, (f) services and policy development, (g) medical schools with longitudinal integrated clerkships, and (h) rural and northern health research.

Medical students. Research projects about the student experience during LICs in rural and northern regions have the potential to uncover fascinating findings. The present study provides insight for medical students and other students about to embark on a LIC. The study's findings can help raise awareness and educate future NOSM medical students, and students undertaking similar clinical experiences, about the development of effective strategies in response to the challenges and demands of medical training. The participants in the study discussed personal lifestyle behaviours such as physical activity, nutrition, sleep management,

and resourcefulness strategies to improve a greater sense of well-being and prevent burnout for example during the disorientation dilemma.

Northern Ontario School of Medicine. It is through further understanding of the students' lived experiences of the Comprehensive Community Clerkship (CCC) that suggestions can be considered to better prepare future students undertaking similar clinical experiences. The following recommendations are by nature intended to offer ways to continuously improve the student experience of the CCC and to a greater extent the experiences of preceptors, patients, and the communities. Based on the study findings, the implications of the research can contribute to the development of formal curricula related to student adaptation and personal well-being such as stress management, coping strategies, and mental health promotion. Many medical schools have implemented courses directed at preparing students for their clerkship placements (O'Brien & Poncelet, 2010). Medical educators and faculty at the NOSM ought to consider developing educational activities designed to better orient and prepare the students for the clerkship experience they are about to embark on. Treadway and Chatterjee (2011) stated "medical schools are recognizing the need for more structured ways to teach students how to understand and cope with their third-year experiences" (p. 1192) calling to action the need for integrating formal reflection activities in the formal curriculum. Reflective practice facilitates an appreciation and understanding of each other's roles, their unique backgrounds, and the various professional perspectives on clinical decision-making (Schon, 1987). Through self- and grouped-reflective exercises such as critical incident reporting (e.g., Branch, Pels, Lawrence, & Arky, 1993; Branch, 2005), students can learn to master the skills that allow them to become reflective practitioners (D'Amour, Ferrada-Videla, San Martin Rodriguez, & Beaulieu, 2005). The study findings suggest the importance and need for reflection activities to help the students become reflective

practitioners (see Schon, 1987) who can reflect on critical incidents and meaningful moments during clerkship, review their clinical decision-making, and consolidate personal and professional dilemmas.

Community preceptors. The present study provides a better understanding of the physician-student dynamics from the students' perspectives, for example role modelling. Wright and Carrese (2002) concluded that "physician role models affect the attitudes, behaviours, and ethics of medical learners and foster professional values in trainees [...] they also influence the career choices of medical students" (p. 638). According to these authors, the critical domains related to role models generally include the preceptors' personal qualities (e.g. interpersonal skills, integrity, leadership), teaching skills (e.g. building rapport with learner, teaching philosophies and methods), and clinical competence (e.g. providing high quality and compassionate care to patients). Walters, Prideaux, Worley, and Greenhill (2011) reported that general practitioners (GPs) who participated in their study suggested that being a preceptor for students in a longitudinal clerkship added value to their roles, provided diversity in their work, and was helpful in their own self-assessment as a practitioner and teacher. The GPs also felt it helped them maintain currency and proficiency in their clinical expertise. Based on the findings highlighted in this study, the implications for the research can contribute to faculty development opportunities and continuing medical education in relation to self-assessment as a physician and teacher, as well as other aspects of preceptor-student dynamics. The study's findings also serve to increase awareness about role modelling and how it affects medical students. It would be useful to gain insights from the physician preceptors' perspectives. I would be remiss if I did not say that I would like to pursue this type of collateral interviewing to complement this study's findings.

Patients. In contrast with findings reported in previous studies, the participants in the present study alluded to empathy for patients rather than experiencing erosion of empathy and emotional hardening. As mentioned, from the outset of Year 1, students at the NOSM are exposed to patient encounters through standardized patients and case scenarios with fictional patients, health professionals, and practice settings which represent the context of rural and Northern Ontario. In relation to interactions with patients throughout their clerkship, the participants described the attainment of the knowledge, skills, and values that will enable them, as clinicians, to understand the health needs of their patients.

Clerkship communities. The community setting is intimately related to the longitudinal and integrated aspects of the students' CCC experiences. The participants in the study described the significance of the relationships and lifelong friendships they formed throughout clerkship. I met several site coordinators, physician preceptors, and other healthcare professionals during the community visits. Their commitment and dedicated passion toward NOSM learners were evident. In addition, their interest in the purpose of my study was extremely gratifying. As mentioned, early exposure to rural medicine (e.g., family practice) is demonstratively showing that medical learners are more likely to return where they trained for residency and/or eventual practice, whilst addressing workforce shortages (Frenk, Chen, Bhutta, Cohen, Crisp, Evans, Fineberg et al., 2010; Ranmuthugala, Humphreys, Solarsh, Walters, Worley, Wakerman et al. 2007; Tesson, Hudson, Strasser, & Hunt, 2009). Other factors weighing on the decision-making are regional considerations, clinical exposure, and the various roles a physician can assume in the community (personal and professional). The study's findings stand to benefit the various stakeholders in the communities by providing a better understanding of how the students perceive experiencing clerkship.

Services and policy development. Educating medical students about their vulnerability to mental health concerns can both prevent aspects of burnout and promote the use of adaptive coping strategies. Mental health promotion among medical students was one area where the participants raised particular concerns. With a better understanding of how medical students undertaking a longitudinal clinical clerkship develop adaptive coping strategies, consideration can be given, and improvements can be made, to both current and prospective personal well-being teaching in the formal curriculum, as well as to support programs.

Medical schools with LICs. Much research attention has been given to the benefits of the various LIC models internationally such as academic performance indicators and learning outcomes (Hirsh, Gaufberg, Ogur, Cohen, Krupat, Cox et al., 2012; Ogur, Hirsh, Krupat, & Bor, 2007; Worley, Esterman, & Prideaux, 2004; Worley, Prideaux, Strasser, Silagy, & Magarey, 2000). Through a sociological lens, the present study's findings are particularly unique in providing a rich understanding from the voices of one of many groups of participants in the LIC, the medical students. The present study contributes to the empirical evidence by providing insight into the lived experiences of third-year medical students undertaking LICs in rural and northern communities. Medical students undertaking similar clerkships in rural and northern communities in countries around the world can benefit from the experiences described by the 12 participants herein. Similarly, faculties of medicine nationally and internationally already engaged or thinking about introducing a LIC can benefit from understanding what clerkship was like from these students' vantage.

Rural and northern health research. The key to purposeful rural and northern health research is how the context in which it is conducted is included in the analysis. As mentioned, Northern Ontario represents 90% of the province's landmass, and is sparsely populated with

approximately 10% of the population depending on the definition of northern used, and there are many (Pitblado, 2005; Weller, 1988). The study findings provide potential NOSM applicants considering a future in medicine with a rich description of what it is like to train in Northern Ontario. Often times, as was reported by some participants in the study, there are negative perceptions associated with rural and northern training, such as traveling difficulties and the lack of resources. Hopefully, this study and future region specific studies can help offset those prejudgments.

Context is paramount to gaining a better understanding. It is one thing to think you know something, but you really do not know what you do not know. I was born and raised in Northern Ontario and the guided walks were very transformative learning experiences for me. I gained knowledge which could not have been acquired any other way than by experiencing the context. Therein lies the benefit and suitability of the methods used in the present study. The mobile method, the guided walk, created the space to better understand how medical students experienced third-year clerkship *in situ*. While doing so, I inadvertently learned about the woman who worked at the front desk at one of the hotels I stayed who does not have a family physician. She thanked me for doing this research. She also shared her positive views of the NOSM's social accountability mandate of training people from the North, in the North, for the North. The community visits, such as the ones I experienced to conduct the guided walks, are what community-engaged medical education research ought to include - context.

As mentioned from the outset, the key informants stressed that going to the communities to conduct the interviews would be the best approach. I travelled over 6,000 kilometers across Northern Ontario to eight different clerkship communities. As a result, I was able to gain an understanding of the medical students' lived experiences in the context where they were

encountering them. I would like to continue conducting this and other research beginning with trajectory interviewing with the participants once they graduate from the MD Program and undertake residency, as well as longitudinally when they eventually establish their practice to continue to explore, along with them, their lifelong learning.

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Appendix A

Map of Northern Ontario



CCC Communities

- Parry Sound
- Bracebridge*
- Hunstville*
- Sault Ste Marie
- Temiskaming Shores*
- North Bay / Sturgeon Falls
- Timmins
- Fort Frances
- Dryden
- Kenora
- Kapuskasing
- Sioux Lookout

*Identified on the map by ■

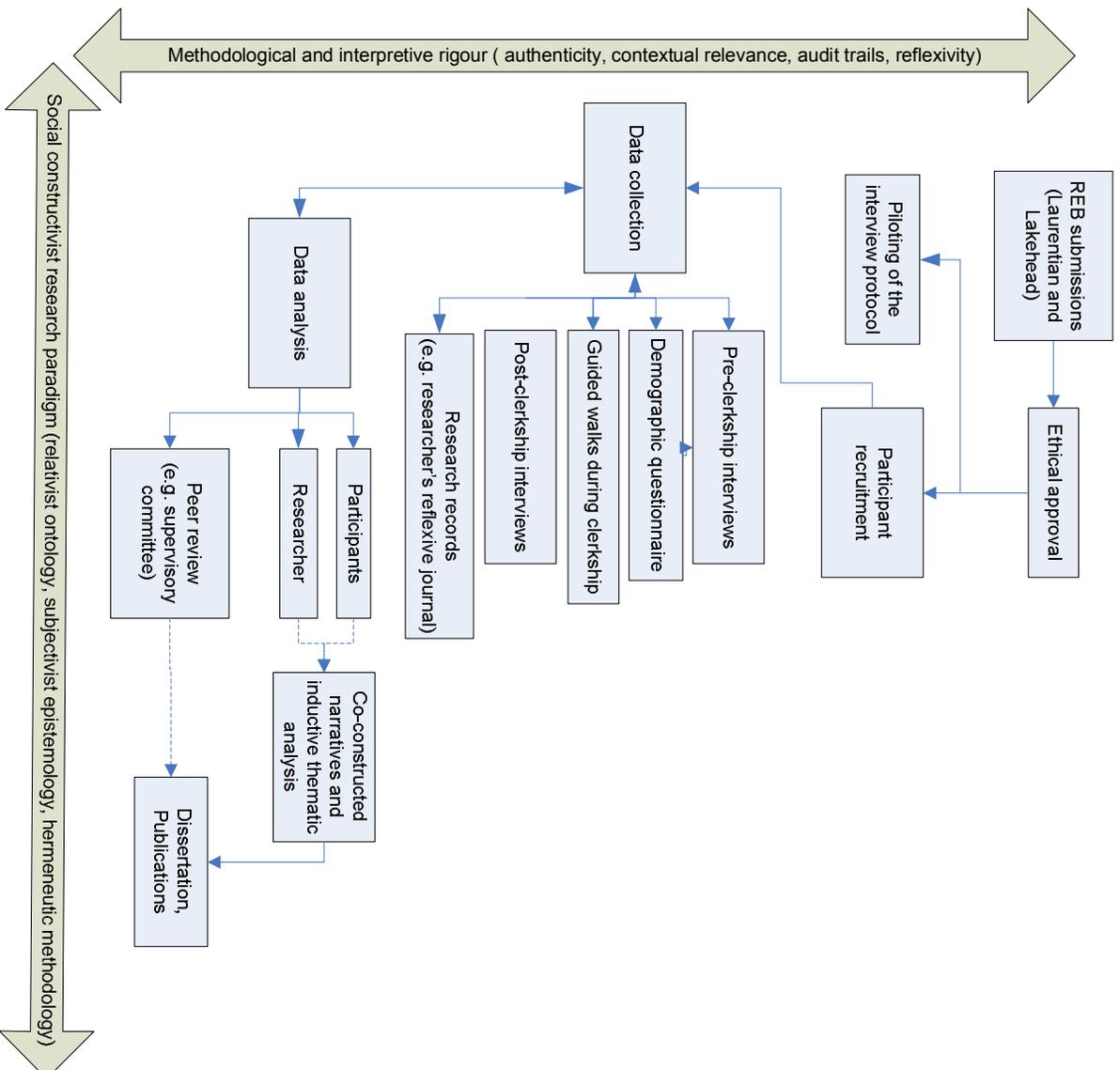
Appendix B

NOSM's MD Program

Phase in the MD Program	Key Features
1 Year 1: Case-Based Modules (CBMs) 101-106 Year 2: 5 CBMs (107-111)	-Each CBM has a system focus (ex. MSK, endocrine, end of life, etc.) -5 themes interwoven throughout small and large group and community and interprofessional learning sessions -3 four-week integrated community experience CBMs (CBM 106 Aboriginal community, CBM 108 & 110 remote/rural communities)
2 Year 3: Comprehensive Community Clerkship	-Parallel exposure across each phase of the life cycle -New emphasis on 6 clinical disciplines: <ul style="list-style-type: none"> • Family Medicine • Child Health • Mental Health • Internal Medicine • Surgery • Women's Health
3 Year 4	-Core rotations -Electives and selectives -Preparation for CARMS interviews

Appendix C

Diagram of Methodology



Appendix D

Lakehead

UNIVERSITY

Office of Research

Tel 807-343-8934
Fax 807-346-7749

January 20, 2011

Principal/Student Investigator: Tim Dubé
Supervisor: Dr. Robert Schinke
c/o School of Rural and Northern Health
Laurentian University
935 Ramsey Lake Road
Sudbury ON P3E 2C6

Dear Mr. Dubé and Dr. Schinke:

Re: REB Project #: 044 10-11 / Romeo File No: 1461610
Granting Agency: N/A
Granting Agency Project #: N/A

On behalf of the Research Ethics Board, I am pleased to grant ethical approval to your research project entitled, "A Narrative Study of the Lived Experiences of Third-Year Medical Students at the Northern Ontario School of Medicine".

Ethics approval is valid until January 20, 2012. Please submit a Request for Renewal form to the Office of Research by December 20, 2011 if your research involving human subjects will continue for longer than one year. A Final Report must be submitted promptly upon completion of the project. Research Ethics Board forms are available at:

http://research.lakeheadu.ca/ethics_resources.html

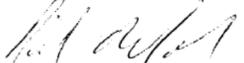
During the course of the study, any modifications to the protocol or forms must not be initiated without prior written approval from the REB. You must promptly notify the REB of any adverse events that may occur.

Completed reports and correspondence may be directed to:

Research Ethics Board
c/o Office of Research
Lakehead University
955 Oliver Road
Thunder Bay, ON P7B 5E1
Fax: (807) 346-7749

Best wishes for a successful research project.

Sincerely,



Dr. Richard Maundrell
Chair, Research Ethics Board

cc. Office of Research

Lakehead Research...CREATING THE FUTURE NOW

955 Oliver Road Thunder Bay Ontario Canada P7B 5E1 www.lakeheadu.ca

Appendix E



Laurentian University
Université Laurentienne

Research, Development &
Creativity Office
Bureau de la recherche,
du développement et de la créativité
Tel/Tél.: 705-675-1151, 3944
Fax/Télé.: 705-671-3850

APPROVAL FOR CONDUCTING RESEARCH INVOLVING HUMAN SUBJECTS

Research Ethics Board – Laurentian University

This letter confirms that the research project identified below has successfully passed the ethics review by the Laurentian University Research Ethics Board (REB). Your ethics approval date, other milestone dates, and any special conditions for your project are indicated below.

TYPE OF APPROVAL	New	X	Modifications to project	Time extension
Name of Principal Investigator and school/department	Tim Dube (Dr. Robert Schinke; supervisor) — School of Rural and Northern Health			
Title of Project	<i>A Narrative Study of the Lived Experiences of Third-Year Medical Students at the Northern Ontario School of Medicine</i>			
REB file number	2011-01-13			
Date of original approval of project	February 1 st 2011			
Date of approval of project modifications or extension (if applicable)				
Final/Interim report due on	February 1 st 2012			
Conditions placed on project	Final or interim report on February 1 st 2012			

During the course of your research, no deviations or changes to the protocol, recruitment or consent forms may be initiated without prior written approval from the REB. If you wish to modify your research project, please complete the appropriate [REB form](#).

All projects must submit a report to REB at least once per year. If involvement with human participants continues for longer than one year (e.g. you have not completed the objectives of the study and have not yet terminated contact with the participants, except for feedback of final results to participants), you must request an extension using the appropriate [REB FORM](#).

In all cases, please ensure that your research complies with the [Tri-Council Policy Statement \(TCPS\)](#). Also please quote your REB file number on all future correspondence with the REB office.

Congratulations, and best of luck in conducting your research.

Daniel Côté, Ph.D.
Chair of the *Laurentian University Research Ethics Board*
Laurentian University

Appendix F

Participant Recruitment Package



Dear Potential Participant,

I (Tim Dubé, PhD candidate, School of Rural and Northern Health, Laurentian University) invite you to become a participant in my PhD thesis project, *'A Narrative Study of the Lived Experiences of Third-Year Medical Students at the Northern Ontario School of Medicine'*. The aim of the study is to explore medical student responses to changes in life circumstances that students will experience as a result of their physical relocation and transition to living and working in northern Ontario communities during the Comprehensive Community Clerkship (CCC). Specifically, the purpose of this research is to understand the adaptation processes third-year medical students at the Northern Ontario School of Medicine undergo throughout the clerkship. You have been asked to participate in this research because you are a third-year student directly involved in the CCC.

I have a personal interest in researching the social worlds created by those at transitional points in their professional careers. And, according to researchers, the most influential transitional stage in undergraduate medical education may occur during the third-year clinical clerkship when medical students transition from classroom learners to clinicians. The goal of the present research will be to learn from your lived experiences. The value-added from your participation in the study will help shape the continuous development of the CCC. The study will be useful to educate medical students about their vulnerability to stress, promote the effective use of adaptive strategies such as the promotion of coping and social support, as well as promote the prevention of psychological responses such as burnout, depression, and anxiety. By advancing our understanding about pre-, during, and post-placement attitudes related to clerkship in rural and northern communities, we can learn from the students' lived experiences and make future orientation and placement experiences better as a result.

The study will run from July 2011 to May 2012. Participation is voluntary and you can withdraw from the study at any time without consequence by notifying the principal researcher. There will be three instances for data collection. They include: two one-on-one interviews, a demographic questionnaire, and a mobile method in the form of 'guided walks'. Your name and location will be kept confidential throughout the project and onward. Any identifiable information will not appear on any documents. In addition, it is important that you know that I am a curriculum instructional designer at the NOSM. However, in consideration of my role as a professional academic staff member, my position at the NOSM has no involvement in assessment of student performance or decisions about student progress through the MD Program.

The research project required ethics approval by both Laurentian University and Lakehead University research ethics boards. Ethical approval was received from Lakehead University on January 20, 2011, and Laurentian University on February 1, 2011. Project reports detailing the findings of the study will be generated for peer-reviewed journal publications and conference presentations. Results will be provided to all participants at the end of the project.

It would be greatly appreciated if you would consent to taking part in this important project.

Yours sincerely,
 Tim Dubé, BA (Hons.), MA
 PhD Candidate
 School of Rural and Northern Health
 (705) 698-2296
tv_dube@laurentian.ca

Informed Consent Letter



Study Title: A Narrative Study of the Lived Experiences of Third-Year Medical Students at the Northern Ontario School of Medicine

Principal Investigator:

Tim Dubé, PhD candidate, School of Rural and Northern Health, Laurentian University

Dear potential participant,

The journey of a physician-in-training entails transitions which lead to the attainment of the knowledge, skills, and values that will enable them to understand the health needs of their patients. The present study will explore how NOSM students describe adaptation processes during the Comprehensive Community Clerkship (CCC). The study's findings will provide a glimpse of how students describe their lived experiences and their responses to life circumstances through personal and social means.

The data collection for the present study includes unstructured/semi-structured interviews, a demographic questionnaire, and a mobile method in the form of 'guided walks'. After informed consent will be obtained, you will be asked to take part in a one-on-one conversational interview on two occasions (August/September 2011 and in April 2012) either face-to-face or via Skype, which will take approximately 45-60 minutes each time. You will also be asked to complete a demographic questionnaire immediately following the pre-clerkship interview, which will take approximately 5-10 minutes. In the month of November (following assessment), I will ask participants to lead me through 'guided walks' through the locales of significance to you in your respective CCC community based on your choice of routes taken. The unstructured and flexible format will encourage free-flowing conversation relevant to the details you wish to share. The everyday conversational style of communication (e.g. hallway conversations) is intended to learn about the daily interactions and to learn about the naturally occurring phenomenon.

Following data collection, I will co-construct narratives with you to tell the stories about your journey. I will send you your interview transcripts and you will be asked to engage in the interpretation of the data. Reactions to the analyses will then be incorporated into the interpretation.

As a participant, you understand that:

- Participation is voluntary and that you can withdraw from the study at any time without consequence by notifying the principal researcher.
- You agree to be audio recorded during all interviews. The interview data will be audio recorded for subsequent verbatim transcription. The researcher will transcribe each interview verbatim and will label each interview by using a participant-based method (ex. MS1, MS2...) in order to adhere to principles of confidentiality and anonymity.
- Your name and location will be kept confidential throughout the project and onward. Any identifiable information will not appear on any documents.
- All information collected will be entered into a secure database accessed only by the principal researcher and two members of the researcher's supervisory committee, Dr. Schinke and Dr. Lightfoot. The database, reports generated by the data, consent forms, and other information collected for analysis will be securely stored in a locked cabinet in the researcher's private office behind a locked door. All electronic files will be password protected. At no time will other parties have access to this information. All archive will be stored securely for a period of five years from project completion. The data will subsequently be destroyed by shredding (i.e. printed material) and through a deletion program (i.e., electronic data).
- There are two copies of this consent form. You will keep one copy and provide the signed copy to the principal researcher.

Project reports detailing the findings of the study will be generated for peer-reviewed journal publications and conference presentations.

If you have any questions or concerns about the study or about being a subject, you may contact the principal researcher (Tim Dubé) or his supervisor (Dr. Robert Schinke) for information:

Tim Dubé, BA (Hons.), MA
PhD Candidate
School of Rural and Northern Health
(705) 698-2296
tv_dube@laurentian.ca

or

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(705) 675-1151 ext. 1045
rschinke@laurentian.ca

This research project has been approved by both Laurentian University and Lakehead University research ethics boards. The research project required ethics approval by both Laurentian University and Lakehead University research ethics boards. Ethics approval was received from Lakehead University on January 20, 2011, and Laurentian University on February 1, 2011.

For concerns or questions regarding the ethical conduct of the study, you may also contact the Laurentian University Research Officer at (705) 675-1151, ext. 3213 or email at jdragon@laurentian.ca; or the Lakehead University Research Ethics Officer Susan Wright at (807) 343-8201, ext. 8283 or email at susan.wright@lakeheadu.ca.

I agree to participate in this study, and I have received a copy of this consent form.

Signature (Participant): _____ Date: _____

Copies of the research project results will be made available to all participants.

I would like to receive a copy of the final report of the study:

Yes No

If yes, please provide your contact information:

Email address: _____

Mailing address: _____

Letter of Support

Associate Dean, Undergraduate Medical Education



Northern Ontario
School of Medicine
École de médecine
du Nord de l'Ontario
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May 3, 2011

Dear Phase 2 Students:

Throughout the next months as you move through Phase 2 you will become more and more familiar with evidence-based medicine. As clinicians you will look to the literature to inform care of your patients. Some of you will participate in and others of you will direct research projects that will change clinical care.

Medical educators use the same method to determine and evaluate medical education. You will be asked during your medical education now and in the future to assist in the evaluation of aspects of your education.

Tim Dubé, a PhD Candidate in the Interdisciplinary Rural and Northern Health Program, is interested in exploring how third-year medical students describe the challenges they must manage during the CCC, and in response, the strategies they employ as they seek to adapt throughout the clerkship. Informed by a social constructivist research paradigm, 12 to 15 students will be elicited from NOSM to answer the research question: *How do NOSM students describe adaptation processes during the CCC?* There will be several instances for data collection. They include two one-on-one interviews (pre- and post-clerkship), a brief demographic questionnaire, and an innovative method in the form of 'guided walks'. Names and locations will be kept confidential throughout the project, and any identifiable information will not appear on any documents.

I would encourage all of you to consider active involvement in this and other projects that seek to improve medical education and patient care.

Sincerely,

Lisa Graves, M.D.
Associate Dean, UME

LG/amb

Appendix G

Demographic Questionnaire

ID#: _____

Please note that the content of this questionnaire will be used strictly for research purposes. Ensure that the consent form has been completed and signed before proceeding with the questionnaire. All information will be kept confidential and at no time will your personal data be shared. Thank you for your time and participation. For questions, please contact the researcher at the telephone number provided.

BACKGROUND INFORMATION

1. Name: _____
2. Mailing Address: _____

3. Email: _____
4. Telephone: _____
5. Age: _____
6. Gender:
Female Male
7. Marital Status: _____
8. Any Children?
Yes No
9. Your Current Hometown: _____
 a. How would you describe your hometown?
Remote Regional Rural Urban Northern
10. Current Level of Education (check all that apply):
BA BSc MA MSc PhD
Other (specify): _____
11. Do you self-identify with any of the following?
Aboriginal Francophone Other (specify): _____

Additional Comments:

ACADEMIC INFORMATION

12. Host Campus: Laurentian Lakehead
13. CCC community: _____
 a. How would you describe the community?
Remote Regional Rural Urban Northern

Additional Comments:

ADDITIONAL INFORMATION

14. How do you think your previous exposure to rural and remote placements (i.e. CBM 106, 108, and 110) have prepared you for the CCC?:

1=not at all; 3=not sure; 5=very much so

1 2 3 4 5

15. Where were your previous placement experiences?:

CBM106: _____

CBM108: _____

CBM110: _____

Additional Comments:

Appendix H

Interview Protocol

Pre-Clerkship Interview Topics

- Introduction and explanation of the study purpose.
- Ask whether the participant is still interested in proceeding
- Explanation of the recording process.
- Starting of tape-recorder.
- Verbal consent obtained from the participant. Explain that any identifiable information disclosed in any of the answers will not be included in the final results. Inform participant that he/she will be assigned a tag (e.g., MS1, MS2, etc.) for the purposes of data analyses as well as maintaining anonymity.

Key Topics

- Changes you needed to adjust to as a medical student at NOSM
 - a. Early years? during placement experiences? leading up to CCC?
 - i. How did you respond?
- Preparation for the clerkship – aspects that comes to mind
 - a. Looking back on your ICE placements...what sort of preparation do you have for what you are about to experience?
 - b. How have others been helpful and/or supportive for you?
 - i. Family, friends, classmates, faculty, school administration, etc.
 - c. What would help you more in preparation for the clerkship?
 - d. Were there any barriers?
- Anticipated experiences in relation to the clerkship –challenges come to mind
 - a. Challenges: e.g. isolation, physical relocation, learning, etc.
 - b. Transitions: e.g. professional socialization, career path, etc.
 - c. What have you heard anecdotally from peers (junior/senior)?

Debriefing

- As you are about to embark on your clerkship, are there any other questions or topics that I should have asked about?
- I would like to do a few more interviews with as wide a range of students as possible. Can you think of any of your classmates that might be interested in participating in my study?

Guided Walks Interview Topics

- Reminder of the research questions and the study purpose
- Described method (e.g. as we walk around, think about what these places mean to you, etc.); and confidentiality
- Reminder of the recording process

Key Topics

- What goes into becoming a clerk?
 - Adjustments?
- The CCC provides for experiences with simultaneous exposure to various stages of disease across the life span, what goes into becoming a clerk at NOSM?
 - Changes you needed to adjust to – *what comes to mind? How did you respond?*
 - If returning to hometown, describe experiences associated with this?
 - i. Clinical dimension (e.g. familiar faces, contextual relationships, identity)
- Experiences in relation to the clerkship – challenges that come to mind
 - Academic (e.g. exams, learning expectations, etc.)
 - Campus learning vs CCC
 - Living and learning away from home?

How did you respond?

- Support
 - Academic & Clinical (becoming a clinician)
 - Relationship with peers, preceptors, patients, etc.
 - SLCs, SACs
 - Community
 - Social & personal relationships
 - a. How have others been supportive? (e.g. family, friends, peers, faculty, school administration, etc.)
 - b. Relationship with peers, preceptors, patients, etc.
 - c. Social activities
 - d. Service providers (e.g. CAMH, EAPs)
- Transitions that come to mind (e.g. classroom to clinic? professional socialization? career path? etc.)

How did you respond?

- Suggestions for future students with regards to adjusting to CCC
 - Orientation?
 - Coordination?

Debriefing

- Are there any other questions or topics that I should have asked about, but didn't regarding your experiences?
- What did you think about the method?

Post-Clerkship Interview Topics

- Reminder of the study and its purpose. Reminder of the recording process. Consent confirmed.
- Describe your CCC experience
- Critical moments ('a-ha moments'); Challenges
 - a. What comes to mind?
 - b. How did you respond?
 - c. What strategies did you employ to manage?
- Changes / transitions you needed to adjust to (e.g. clinical skills, shift professionally, accountability, confidence, knowledge acquisition, becoming a physician, developing competence, etc.)
 - a. How did you respond?
 - b. What strategies did you employ to manage?
- Relationships with family, peers, preceptors, the community, etc.
 - a. How would you describe how each of those individuals was supportive for you?
 - i. Being away from home, or closer to home for 8 months
- Career path
 - a. Has the CCC had any influence one way or another?
 - a. Exposure to specialities; clinical encounters
 - b. Setting
- Continuing with medical education
 - a. As you are about to embark on fourth year?
 - b. Becoming a doctor?
- Suggestions
 - a. for NOSM students with regards to the CCC
 - b. for NOSM
 - c. Students applying to schools with a community-engaged model
 - d. Schools thinking about adopting a longitudinal clerkship model

Debriefing

- Are there any other questions or topics that I should have asked about, but didn't regarding your experiences?
- Are you interested in participating in small-group discussions for inductive analyses of the data? If so, how would you suggest these occur?