

**Students Who Stay:
Stories of Northern Medical Program Graduates and Place Integration**

by

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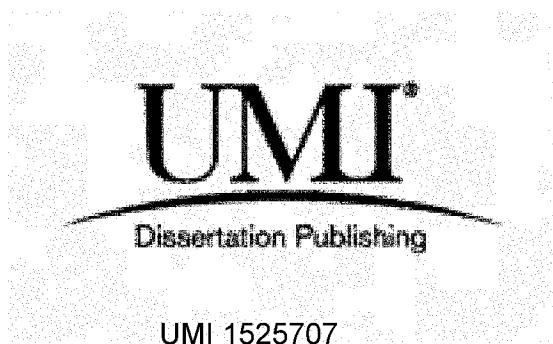
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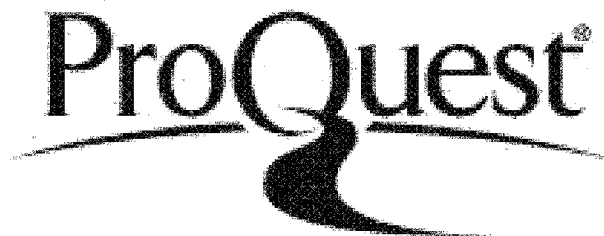
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ABSTRACT

Many sparsely populated rural, remote, and northern Canadian communities are negatively impacted affected by physician shortages. Research into physician maldistribution shows that increasing the supply of medical graduates alone will not improve the situation in Canada's smaller communities. In addition to recruitment, retention must be integrated into strategies aimed at reducing physician maldistribution. The purpose of this research is to better understand the significant, influential, and transformational experiences of northern British Columbia-trained family physicians in order to better support northern communities in retaining a sustainable physician workforce. Qualitative data from interviews with seven Northern Medical Program graduates currently practicing family medicine in and around northern BC were analyzed. Themes related to students' backgrounds, characteristics of communities, and experiences throughout their training suggest that the evolution of individuals' attitudes and decisions prior to arriving in a community influence their ongoing process of integration and retention in place.

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CHAPTER 1: INTRODUCTION

According to the Society of Rural Physicians of Canada (SRPC, 2012), 31.4% of the Canadian population lives in predominantly rural regions. While one might expect a similar proportion of the physician population to care for these rural residents, only 10.9% of Canadian physicians practice in rural settings (SRPC, 2012). As a result, in addition to geographic barriers to access to health services, many northern British Columbians, like other Canadians who reside in rural, remote, and northern regions of the country, continue to face a chronic physician shortage.

The term 'physician maldistribution' refers to a geographic mismatch of physician supply and population demand (Blumenthal, 1994). In 2004, in an attempt to address physician maldistribution within the province, the University of British Columbia (UBC) adopted a distributed model of undergraduate medical education and has since expanded to include four satellite campuses: the Vancouver-Fraser Medical Program in Vancouver, the Island Medical Program in Victoria, the Southern Medical Program in Kelowna, and the Northern Medical Program (NMP) in Prince George, British Columbia (BC) (UBC, 2013). The NMP was established with the intention that training physicians in smaller and remote centres would increase the chances that these medical graduates would choose such locations to practice after graduation.

Even with the tenth NMP cohort having begun their studies in September 2013, the impact of the NMP on local physician retention rates remains difficult to measure. Since its conception, the NMP has faced skepticism and more recently criticism about its effectiveness at producing physicians who will remain and practice in the North upon graduation (e.g., Canadian Broadcasting Corporation [CBC], 2011). Unfortunately, research into issues of physician

maldistribution has tended to focus primarily on physician recruitment, often overlooking retention and many of the complexities inherent in place-based aspects of physicians' career choices. However, retention, or the sustainability and longevity of new recruits' practices, can have an enormous impact on the maintenance of adequate numbers and appropriate geographic distribution of physicians.

A better understanding of the dynamics of physician recruitment and, more importantly retention, will support northern and other underserved communities in successfully building and keeping their health human resources capacity. This thesis will examine experiences of NMP graduates in the context of Cutchin's (1997b) place integration framework, which incorporates components of self and community as a means of understanding how rural physicians become integrated into a community, and provides the theoretical basis through which local physicians' experiences are explored within this study. Building on previous research findings, the research represented in this thesis was designed to address determinants of, and influences on, location-based decisions for physicians in the North. The following research questions guide the thesis:

- What influences the evolution of NMP students' career decisions and place preferences throughout and after their medical training?
- What impact do factors such as geographic background and medical school experience have on NMP graduates' practice decisions and location-based preferences?
- How can experiences during and following medical school (e.g., mentoring, rural placements, residency) influence an NMP graduate's sense of rural and small town affinity?

In order to answer these questions, interviews were conducted with recent NMP graduates about their place-based experiences and decision-making throughout and subsequent to medical school. Interview participants represent a variety of self-identified geographic backgrounds, and include family physicians practicing in various communities around northern BC.

My initial interest in this area of research was in response to the criticisms of the NMP in the media, and a desire to explore the issue of physician maldistribution in northern BC based on the perspectives of NMP graduates. Who better to comment on the connection between NMP experiences and career decision-making than those who had actually attended the NMP? In undertaking this study I had two main goals: (1) to contribute to the growing understanding of issues of physician retention, and (2) to learn about the experience of attending the NMP and what it means to be a doctor in the North. There were also personal interests that led me to this research. I am originally from a large urban centre in southern Ontario. I moved to Prince George to pursue my graduate studies, and have since come to see myself settling in a smaller, more remote centre to pursue my personal and professional aspirations. Ideally, I wish to pursue medicine and my preference is to attend a distributed program like the NMP. Together, these preferences and perspectives clearly influence the way in which I approach this research. Being a graduate student is an opportunity to ask questions that might not otherwise be asked, and in addition to answering my research questions, conducting this study has been an opportunity to deepen my understanding of the experience of medical education and practice, and the challenges and rewards with which rural physicians are faced.

Following this introduction, this thesis is organized into five chapters. Chapter two includes a review of the literature related to distributed medical education, geographic background, and Cutchin's (1997a; 1997b) place integration framework. Additional background and contextual information pertaining to the NMP and the northern BC medical community is also presented. Chapter three describes the objectives and research questions that have guided this study, as well as the phenomenological approach to qualitative research that influenced the study design, and the methods employed for data collection and analysis. Chapter four presents

the research results as well as a discussion of these results organized around a thematic pathway developed to answer the research questions. Chapter five summarizes the key findings of the study, and provides a discussion of the limitations and applicability of these findings, as well as potential areas for future research.

CHAPTER 2: LITERATURE REVIEW & STUDY CONTEXT

This chapter combines a review of the academic literature with key contextual details pertaining to the study of medical education and physician distribution in northern BC. The literature review is presented first and profiles research that contributes to the understanding of physician maldistribution, issues of recruitment and retention, and rural health human resources. The study context provides pertinent background information to support the reader's understanding of the history and operations of the NMP, as well as its impact on physician maldistribution in northern BC.

Literature Review

Although there is no consensus on what constitutes an 'underserved' community or region (Barer & Stoddart, 1992), it is well understood that Canada is facing a physician shortage. From Canada's largest cities to its most remote reservations, Canadians everywhere find it difficult to access a local family doctor. According to recent Statistics Canada data, 16% of Canadian adults do not have a family doctor, amounting to 3.3 million unattached Canadian patients (Nabalamba & Millar, 2007). The concentration of physicians in urban centres seen in BC (Snadden & Casiro, 2008), across Canada (Rourke, 2005), and in similarly developed countries worldwide (Laven & Wilkinson, 2003) leaves many sparsely populated rural communities with inadequate access to doctors and basic health care services. Blumenthal (1994) uses the term "physician maldistribution" (p. 109) to describe the geographic mismatch of physician supply and population demand. In Canada, where the vast majority of the population is concentrated in the southern part of the country (Statistics Canada, 2008), northern regions tend to face difficulties in delivering health services due to issues of physician recruitment and retention, regardless of whether northern communities are considered to be urban or rural.

This literature review is organized into three key sections which build on one another to address the issue of physician maldistribution in northern and rural Canada. First, the importance of students' geographic backgrounds as predictors of their eventual practice locations is introduced. Second, the role of distributed medical education in addressing physician maldistribution is explored. Finally, the application of place integration theory brings together aspects of student background and medical education to heighten our understanding of physician retention.

Geographic Background

The relationship between individuals' geographic backgrounds and where they choose to live and work as adults is well documented in the literature. The enduring demand for physicians in rural and northern regions of Canada, combined with the recognition that rural-background students are most likely to practice in rural areas (Rourke, 2005), has drawn attention to the predictive value of students' geographic backgrounds in increasing the northern physician population. Costa, Schrop, McCord, and Gillanders (1996) describe a "strong association" (p. 218) between the size of one's hometown and the size of the community in which he or she chooses to practice medicine. Based on surveys conducted with family medicine residents, Costa et al. found that "more than 50% of those growing up in moderate-size cities, small cities, and towns would pick similar-size communities, respectively, in which to practice" (p. 216). While a variety of other factors have been shown to influence physicians' location choices, 'rural upbringing' remains the "most important predictive factor" (Hancock, Steinbach, Nesbitt, Adler, & Auerswald, 2009, p. 1370) associated with successful recruitment and retention of physicians in rural areas. Each with their respective sparsely populated regions, Canada, the United States and Australia face similar health human resource challenges in remote areas.

International findings suggest that rural-background students who train closer to home are more likely than both urban-background (Rourke, 2005; Hancock et al., 2009) and urban-trained physicians (Durkin, Bascomb, Turnbull, & Marley, 2003) to practice in underserved areas. In addition, based on a comparison of rural medical education in Canada, the United States and Australia, Tesson, Curran, Rong, and Strasser (2005) and Rourke (2010) highlight the need for the social composition of medical school cohorts to match the social composition of the communities in which graduating physicians will practice. Thus, in order to provide appropriate medical care to Canada's significant rural population, an increase in the supply of physicians is necessary and will need to include a significant proportion of students from rural backgrounds. However, research into the demographic and socioeconomic characteristics of Canadian medical students reveals that nearly 90% of first-year Canadian medical students come from non-rural backgrounds (Dhalla et al., 2002). Furthermore, medical students are much less likely to have graduated from rural high schools than the Canadian population in general. Dhalla et al. (2002) reported that 10.8% of Canadian medical students versus 22.4% of the Canadian population lived in rural areas at the time of high school graduation.

Based on the strong predictive value of medical students' geographic backgrounds, and combined with the pressing need to increase the supply of rural physicians, several researchers have called for the restructuring of medical school admissions criteria. Strasser (2001) argues for "some form of 'affirmative action' [to be] built into the selection process in order to achieve a target number of rural students in the medical school year equivalent to the proportion of rural people in the population" (p. 2197). However, Strasser also warns against relying on an oversimplified "special admission scheme" (p. 2197), which may, by modifying criteria for admission, stigmatize rural students. In addition, based on research in which physicians cite

“proximity to family” (Mathews, Seguin, Chowdhury, & Card, 2012, p. 7) as one of the most important considerations in their relocation decisions, Mathews et al. (2012) argue that admission policies should “reserve seats for local students (ie [*sic*] from the province) in order to improve the local physician supply” (p. 7). Similarly, Barer and Stoddart (1992) recommend that the value placed on applicants’ “pure excellence in traditional premedical science courses” (p. 620) be decreased, while additional consideration be given to students from rural backgrounds. Barer and Stoddart suggest that preferential application screening and admissions policies targeted at increasing rural student enrolment in medical school would “see different types of students enter training [and] a different set of exposures, influences and expectations during training” (p. 620).

While many medical educators, researchers and administrators continue to promote programs that seek to attract rural students to the pursuit of medicine as a career, others recognize the likelihood that a disproportionate number of medical students and physicians will continue to come from urban areas and, instead, have proposed strategies to convert these urban-raised students into rural physicians (Rourke, 2005). Based on statistics collected from Canadian, American and Australian rural-oriented medical schools, Tesson et al. (2005) report that “rates of application by rural students were as low as half that of urban students” (p. 408). In recognition of the fact that more urban-raised students attend Australian medical schools than do non-urban-raised students, Dunbabin and Levitt (2003) recommend that all students who show an interest in rural or general practice – regardless of their geographic backgrounds – “need to be nurtured in the same way as rural students” (p. 11). Similarly, Rourke (2005) suggests that Canadian medical school administrators must look beyond where students were raised and support all students as they would foster future rural physicians:

Although having a rural background clearly influences the eventual choice of a rural area as the setting of practice, the fact remains that most medical students come from urban areas; hence, a significant portion of rural physicians do and will need to come from urban backgrounds. (pp. 62-63)

In addition, Mathews et al. (2012) warn against an “over-reliance” (p. 7) on rural background students to meet the human resources demands in underserved areas. They suggest that although “recruiting ‘home grown’ trainees” (p. 7) may address local shortages, the composition of the resultant physician community may create “an organizational culture that is unwelcoming to individuals trained at other institutions and [in] a uniformity of approach that may negatively affect education programs, institutional reputation and clinical practice” (Mathews et al., 2012, p. 7).

Though the debate continues over the applicability of geographic background as a predictor of retention, studies that argue for the relevance of students’ geographic backgrounds predominate. In general, researchers do not suggest that geographic background should be the only relevant factor for medical school admissions committees to consider when evaluating applicants. However they do draw attention to the relationship that emerges when these variables are compared retrospectively, a relationship which suggests that strong similarities tend to exist between a physician’s eventual practice location and his or her hometown.

Medical Education

Canadian medical education consists of two distinct phases: undergraduate medical training, or ‘medical school’, and postgraduate training, or ‘residency’, which amount to a minimum of five years of medical training. Overall, these years are structured to support students in the development of their understanding and clinical skills required to attain

mandatory competencies. In addition, this is a time when medical students' and residents' individual senses of identity evolve as they move towards their professional roles. Over the course of medical school and residency, future physicians move through developmental stages which shape their personal and professional concepts of 'self' and deepen their understanding of the types of roles physicians undertake in various capacities and settings (Jarvis-Selinger, Pratt, & Regehr, 2012).

This research focuses on the role of undergraduate medical training in fostering a commitment to rural and small town family practice. It is widely agreed that many of the experiences that shape professional decisions occur during medical school, and sometimes prior to this stage. Burack et al. (1997) examined important aspects of medical students' training experiences, focusing on three categories: (1) prominent positive and negative factors that influence specialty choices; (2) people who had impacted students' decisions; and (3) "particular incidents, events, or educational experiences" (p. 535) throughout medical school that had impacted subsequent career decisions. What emerged was an understanding of the distinct role of undergraduate medical education in shaping specialty choices and eventual practice location preferences. Similarly, Tesson et al. (2005) argue for opportunities during medical school that facilitate "greater exposure of students to rural health issues" (p. 408) because this exposure will "further [enhance] the likelihood of rural practice after graduation" (p. 408). Rosenblatt et al. (1992, as cited in Curran & Rourke, 2004) argue that the "organization, location and mission of medical schools have been shown to be related to the propensity for graduates to select rural practice" (pp. 265-266). Curran and Rourke (2004) summarize previous findings and describe some of the aspects of medical schools that produce rural physicians:

Medical schools which are decentralized, located in rural areas, have a rural focus, encourage admission of rural students, facilitate rural-oriented medical curriculum, and provide early and repeated undergraduate rural medicine learning experiences are most successful at graduating rural physicians who will choose rural practice as a career. (p. 266)

Curran and Rourke (2004) also provide international examples of medical schools that integrate these features into their programs, including schools in Norway, Japan, and Australia.

There are a variety of models that shape student experiences in rural settings. Tesson et al. (2005) promote what they call “an appealing non-coercive strategy” (p. 408), which combines two separate though related phases: (1) admitting students from rural backgrounds, who may matriculate with an existing attraction to rural practice, and (2) through curricular design, “shaping their educational experience in a way that builds on this affinity” (p. 408). The recognition that “students must receive early and sustained exposure to rural communities and to rural physician role models” (Curran & Rourke, 2004, p. 267), in order to develop a desire for rural practice, has resulted in more universities opening distributed and satellite campuses.

In recent years, Canadian medical schools have witnessed a shift in their organization towards distributed models. According to the Association of Faculties of Medicine of Canada (AFMC, 2010), the number of undergraduate students studying medicine at regional or satellite campuses increased from 152 students in 2005 to over 700 students in 2009. Similarly, the number of faculty teaching medicine in Canada has increased significantly since 2003, especially “in those disciplines that are commonly taught in community clinics, small hospitals and physician offices” (AFMC, 2010, p. 2).

Previous research has demonstrated the benefits for rural communities who, through regional and distributed campuses, are able to provide medical education to their residents closer to home (Rourke, 2005). Similarly, Tolhurst, Adams, and Stewart (2006) found that urban-background students who train in rural-focused medical programs are more likely than urban-background, urban-trained peers to choose rural careers. In addition, Dunbabin and Levitt (2003) and Rourke (2005) speak to the overall importance of rural exposure for all students, regardless of their backgrounds. Their findings suggest that positive educational experiences in rural settings improve the likelihood that medical students develop ties to that rural setting (Curran & Rourke, 2004), regardless of whether they were raised in a rural region (Dunbabin & Levitt, 2003), or whether their overall medical training took place at a rural-focused institution (Rourke, 2005). As discussed in the *Study Context* section of this chapter, the NMP, based in Prince George, BC, was established with exactly that goal in mind: i.e., that training more physicians closer to their homes, and providing newcomers to the North with positive rural-based training experiences, would eventually increase the chances that they would become local physicians upon graduation (Kondro, 2006; Snadden & Casiro, 2008; Hanlon, Ryser, Crain, Halseth, & Snadden, 2010).

Place Integration

Issues of physician maldistribution are commonly viewed through one of two lenses: recruitment or retention. Traditionally, physician recruitment was touted as the primary solution to a straightforward problem: that is, that communities experience physician shortages because they are simply unable to attract enough physicians. However, over the past several decades, Cutchin's (1997a, 1997b) place integration framework has shifted the focus away from recruitment and towards retention. As a geographic theory, place integration has a significant

impact on the collective understanding of how physicians and other groups develop ties and become 'attached' to a place. A metaphor that illustrates the recruitment-retention situation is that of a leaky bucket. In most cases, there are two strategies that will keep a leaky bucket full. One is to pour more and more water into the bucket, and try to keep up with the rate at which it is leaking out. This is akin to a recruitment strategy. Alternatively, the hole in the bucket can be plugged to 'support' the water to stay in the bucket, which is more akin to retention. Retention, or the sustainability and longevity of physicians' practices, can have an enormous impact on the maintenance of adequate numbers and appropriate geographic distribution of physicians, and thus an understanding of the process that leads to retention is crucial in order to achieve sustainable physician practices in currently underserved regions of Canada. Simply put, Cutchin (1997a) argues that the retention of physicians in a place is the result of successful place integration.

Cutchin's (1997a) place integration framework provides insight into the dynamic and longitudinal aspects of retention. The framework incorporates components of *self* and *community* as a means of understanding "domains" (Cutchin, 1997a, p. 1662) through which rural physicians become integrated into a community. In differentiating his retention theories from those of previous researchers, Cutchin (1997b) explains: "The vast majority of studies on retention attempt to identify a set of factors that cause retention or migration; as if retention were a nervous system response to a particular stimulation threshold" (p. 39). Most importantly, Cutchin's description of place integration acknowledges the ongoing reevaluation of place-based decisions, moving beyond the over-simplified cause-and-effect mechanism previously described. Cutchin's (1997b) theoretical "experiential place integration" (p. 25) perspective positions retention as an outcome of integration, which itself is described as "an active developmental

process based on the enhancement of security, freedom, identity and meaning in place” (p. 25). By focusing on the dynamic nature of integration and the recurring evaluation of one’s satisfaction with a place, Cutchin argues that each individual’s process of integration emerges from interactions between person and place, with unique encounters, events, and relationships shaping the overall experience. Building on Massey’s (1992) definition of place, which is “formed out of the particular set of social relations which interact at a particular location” (p. 12), Cutchin suggests that, because the ‘social relations’ that define places are “dynamic and changing” (p. 27), so too must be the experiences in and attitudes about a ‘place’. Through his framework, Cutchin aims to unite subjective and objective sides of experience, as well as the permanent and dynamic aspects of place. By successfully acknowledging and addressing the uniqueness of such interactions, the framework increases the potential for individuals’ experiences to inform our understanding of the collective, shared experience. Within this thesis, I employ the term ‘place’ to represent a *type of place* and rather than a specific city, town or community. When describing physicians’ place integration, I am referring to their sense of attachment to or affinity for small urban, rural and remote communities, those which are traditionally underserved by health human resources.

Recruitment vs. retention. Descriptors of recruitment and retention can be organized along a spectrum, with recruitment at one end and retention at the other. For example, where recruitment is static, retention is dynamic, where recruitment is largely based on aspects of individuals’ backgrounds, retention is affected by their present and future situations, and where recruitment is based on objective determinants or predictors, retention is based on subjective experiences.

In support of Cutchin's (1997b) argument that the focus must shift away from recruitment strategies and towards support for retention, Hancock et al. (2009) explain that factors contributing to retention are seen as modifiable, whereas those factors involved in recruitment are not: "Call schedules can be changed, upbringing cannot" (p. 1369). Similarly, Humphreys, Jones, Jones, and Mara (2002) distinguish between settings for recruitment and retention: recruitment and relocation decision-making take place *outside* of the community, while the ongoing reevaluation of personal and professional satisfaction linked to retention occurs *within* the community.

Just as experiential place integration depends on more than objective, quantifiable 'factors', Cutchin et al. (1994) explains that retention is based on more than the tangible characteristics of a particular location. Instead, he explains, "the decision to stay in or leave a rural setting is based on a different constellation of issues related to the daily realities and stresses of rural practice and rural life" (Cutchin et al., 1994, p. 276). In subsequent publications Cutchin (1997b) reinforces this concept, underscoring the importance of physicians' interactions in place – both those within and beyond their professional roles:

Physicians locate in rural places, live there, practice there or nearby, belong to communities, and become a part of local events and interactions. ... The actual process that generates the continuing basis for making the decision to stay or to leave a rural practice setting is based on the quality of human experience in place. (Cutchin, 1997b, p. 28)

As Cutchin (1997b) explains, if one were to consider retention as a singular 'decision to move', he or she would be "[imposing] a static perspective on a dynamic process" (p. 27). Retention, he explains, involves three levels of action in place: plans, commitments, and projects

(Cutchin, 1997b). This attention to temporal differences between recruitment and integration further support the theory that retention is the sustained expression of place integration.

Domains of integration. According to Cutchin (1997b), successful integration within each of three domains is necessary for retention. Self, medical community and community-at-large domains are “connected via place” (Cutchin, 1997b, p. 31) and serve as broad categories within which determinants of retention may be considered. However, the results from research into physician retention in the United States (Cutchin et al., 1994) suggest that “sociocultural integration” (p. 276), or the ‘community-at-large’ domain, outweighs the other domains in terms of its importance to physicians. This realm includes: “social relations in a rural practice setting, ... acceptance by the community, recreational opportunities, spouse’s happiness, family ties to the area, and an agreeable religious support structure” (Cutchin et al., 1994, p. 276). In addition, Cutchin et al. (1994) argue that “the role of local rural community may be more important in retention than in recruitment” (p. 273). Physician integration requires engagement and satisfaction with all three domains, and is often predicated on spouses’ and children’s own interactions within their separate and overlapping environments, contributing to their integration in place. The significance of social and familial aspects of ‘community’ and their relevance in decision-making should not be overlooked. The following sections describe factors that have been shown to influence medical students’ place-based decisions, as well as those that impact the retention of practicing physicians.

Determinants of successful place integration and retention. For several decades, researchers have been interested in identifying factors and experiences that impact where new and established physicians choose to live and practice. Aiming to identify key characteristics of physicians and communities that support physician retention, studies have employed both

qualitative and quantitative means to identify and describe such factors, and to explore the contexts in which they are relevant. Some authors have explored these relationships within large heterogeneous samples, while others have focused on similarities and differences in smaller specified subgroups of the physician population. The results of some studies reveal what appear to be universal determinants, while others explore relationships linking specific aspects of individuals' backgrounds and desired outcomes.

Determinants in the general physician population. Within the literature, there is great diversity in what researchers report to be physicians' top priorities in choosing where to practice. According to Hancock et al. (2009), rural physician retention depends on the convergence of a number of factors, including physicians' rural and non-rural experiences, and external influences such as family considerations. Similarly, Costa et al. (1996) report that "family issues were rated highest in selecting first practice location, followed by community, economics, familiarity, and teaching" (p. 216). Szafran, Crutcher, and Chaytors (2001) have found that "the most influential factors in attracting graduates to their current practice locations were spousal influence, type of practice, and proximity or extended family" (p. 2279). Mathews et al. (2012) explain that "the desire to be near family and friends was cited as the primary consideration when choosing a work location, regardless of generation, sex, specialty type or school of graduation" (p. 4). Despite differences in semantics, researchers continue to refine to the same general findings: that family and other social features of community figure prominently into physicians' location decisions.

Previous research into the place preferences of the creative class has demonstrated confounding challenges that amplify the need for physicians. Jane Jacobs (1984 as cited in Battista, 2007) describes the snowballing that draws professionals to urban areas: "cities are

better able to attract creative people, and the presence of educated, creative people plays a primary role in the economic growth of cities” (p. 6). Conversely, without likeminded peers, communities are less successful in attracting and retaining new physicians. Langwell, Drabek, Nelson, and Lenk (1987) identified a positive correlation between the attractiveness of a community to a new physician and “[the size of the] population, the supply of physicians, the proportion of white collar employment, and the presence of a college” (p. 317). In addition to familial considerations, physicians’ location decisions depend on cultural aspects of community, which incorporate both social and professional aspects, and contribute to their overall sense of affinity for a particular community.

Precursors in specific physician sub-populations. Costa et al. (1996) suggest that what is considered to be an ‘important factor’ in decision-making varies depending on the individuals’ characteristics and circumstances. The authors compared how American family practice residents ranked five groups of factors (family, community, economic, familiarity, teaching) based on respondents’ marital status, age, and the sizes of their intended communities of practice (Costa et al., 1996). Survey results show that residents who intended to practice in towns and small cities consider ‘community’ issues to be more important than those who would practice in moderate and large cities (Costa et al., 1996). Specifically, respondents who intended to practice in large cities ranked ‘family’ as most important and ‘familiarity’ as least important among the five factors, while residents who intended to practice in towns ranked ‘community’ as most important, and ‘teaching’ as least important (Costa et al., 1996). Similar to other studies that have identified geographic background as a predictor of practice location, Costa et al. found that respondents intended to practice in communities that were a similar size as those in which they grew up.

Generational and age-related differences were also identified. Costa et al. (1996) found that although the five factors were ranked consistently across the three age groups, the proportion of each age group who identified 'family' as an important factor increased with age. Not surprisingly, the authors also found that married residents rated family as most important, while single residents rated community as most important (Costa et al., 1996). Based on qualitative interviews conducted with physicians who attended Memorial University and University of Saskatchewan, Mathews et al. (2012) found marked differences between the priorities of early- and mid-career physicians. While the importance of being near family and friends was reported consistently, other priorities differed across generations. For example, early- and mid-career physicians considered "work-life balance and spouse's employment opportunities" to be more important than did late- and end-career physicians (Mathews et al., 2012). Physician participants in qualitative interviews conducted by Hanlon, Halseth et al. (2010) described a similar "generational shift underway in the work ethic and outlook of physicians" (p. 913). As one of their interview participants remarked, "Young doctors today want more balance. Older doctors were trained to work longer days, not take holidays, that kind of thing" (p. 913), suggesting that the commitments of and expectations placed on new physicians differ from previous generations.

The role of gender has also been examined with respect to differences in priorities. A survey of 442 graduates of the University of Alberta's and the University of Calgary's family medicine residency programs revealed that male and female physicians differ in what they identify as being the primary concerns governing their practice location decisions: males identified the type of practice as having the most influence on their choice, while women rank spousal influence as being most important (Szafran et al., 2001).

Preferences for aspects of communities varied depending on specialty choice. While both specialists and family practitioners described the importance they placed on being able to practice to their full scope, Mathews et al. (2012) identified differences between these two groups in relation to the “criteria” (p. 6) they used to evaluate communities. Many family physicians expressed their preferences for rural places based on perceptions that these communities would be facilitative of physicians using a full complement of skills and serving a diverse population (Mathews et al., 2012). Conversely, and not surprisingly, “highly specialized and academic physicians” (p. 6) sought out larger centres, explaining the need for a sufficiently large patient population to support their “clinical and research activities” (Mathews et al., 2012, p. 6).

In exploring the potential for Canadian return-for-service (RFS) agreements to influence medical students’ and residents’ location decisions, Neufeld and Mathews (2012) discovered strong links between trainees’ financial situation/debt load and their practice location choices. Because participation in an RFS bursary program requires physicians to practice in a designated geographic area, the decision to participate in a bursary or similar financial assistance program is tied directly to location, and results in decreased autonomy when it comes to choosing where to live. Trainees who held or planned to hold RFS bursaries at the time of the survey were more likely to have “moderate to great” current and expected financial concern than “none to slight” financial concern (Neufeld & Mathews, 2012, p. 89). Conversely, Neufeld and Mathews also found connections between the perceived importance of practice location and respondents’ likelihood of entering into a RFS agreement: “trainees who felt the location of return was the most important factor in the decision to accept an RFS bursary were ... less likely to accept an RFS bursary” (p. 91). Despite this association, Mathews et al. (2012) offer the following

comment from a physician interview: “You’re not going to keep me here by giving me money. You’re going to keep me here by providing me with an opportunity that satisfies me personally” (p. 6). This statement reinforces the argument that there is great diversity in how financial incentives impact decision-making, and underscores the influence of non-financial factors. However, some research has also identified the inverse of this relationship. According to results from a survey conducted with Memorial University medical students and residents, location was identified as one of the most important factors in their decision to accept an RFS bursary (Neudfeld & Mathews, 2012).

Regardless of the specific determinants that contribute to each physician’s unique integration experience, Cutchin (1997b) reminds us that because integration is ongoing, “retention is never absolute, certain or unproblematic” (p. 28). Place integration theories allow us to appreciate how medical students’ geographic backgrounds and educational experiences, and ongoing interactions with and connections to places come together to contribute to retention. As Cutchin summarizes:

To forego place integration is to forego our humanity, to undo our social nature, responsibility and needs. Integration facilitates retention in a location by providing significant meanings in place, thereby providing effective reasons to stay in the current setting. In other words, integration is a type of progress that builds bonds with place, that in turn encourage retention. (p. 28)

Study Context

In an effort to increase the overall population of practicing physicians and the proportion available to practice in underserved communities across Canada, federal and provincial/territorial governments, in partnership with Canadian universities, continue to gradually increase the

number of seats in Canadian medical schools. Enrollment in Canadian medical schools has more than doubled over the past forty years, increasing from 4,681 in 1968/1969 to 10,853 in 2010/11 (AFMC, 2012). Despite these significant changes, the maldistribution of physicians continues to challenge the Canadian health care system, and research clearly shows that increasing the supply of medical graduates alone will not improve the situation in rural and remote Canada (Dhalla et al., 2002).

Provincial-level strategies specifically aimed at producing more rural-minded physicians vary. Home to the province's only faculty of medicine, UBC has developed a distributed medical education program, offering the same undergraduate medical curriculum in four distinct locations: the Vancouver-Fraser Medical Program (VFMP) in Vancouver, the Island Medical Program (IMP) in Victoria, the Southern Medical Program (SMP) in Kelowna, and the NMP in Prince George (UBC, 2013) (see Figure 1). Based at the University of Northern British Columbia (UNBC), and jointly administered by UBC and UNBC, students of the NMP experience the best of both worlds: students are taught based on the UBC Faculty of Medicine's successful pedagogical model and benefit from the opportunity to learn in a small, interactive community-based setting (Hanlon, Halseth, & Snadden, 2010). Today, the NMP admits 32 students into its undergraduate program annually (UBC, 2013).

Based on a typology created by Tesson et al. (2005) to quantify and compare how Canadian, American and Australian medical schools' integrate their rural mandates with their institutions' overall mandates, the NMP is considered to be a "mixed urban/rural school" (p. 406). Tesson et al. explain that these schools are "historically urban based schools which have expanded their mandate to address the needs of specific rural and remote jurisdictions with which they have developed relationships" (Tesson et al., 2005, p. 406). In order to provide

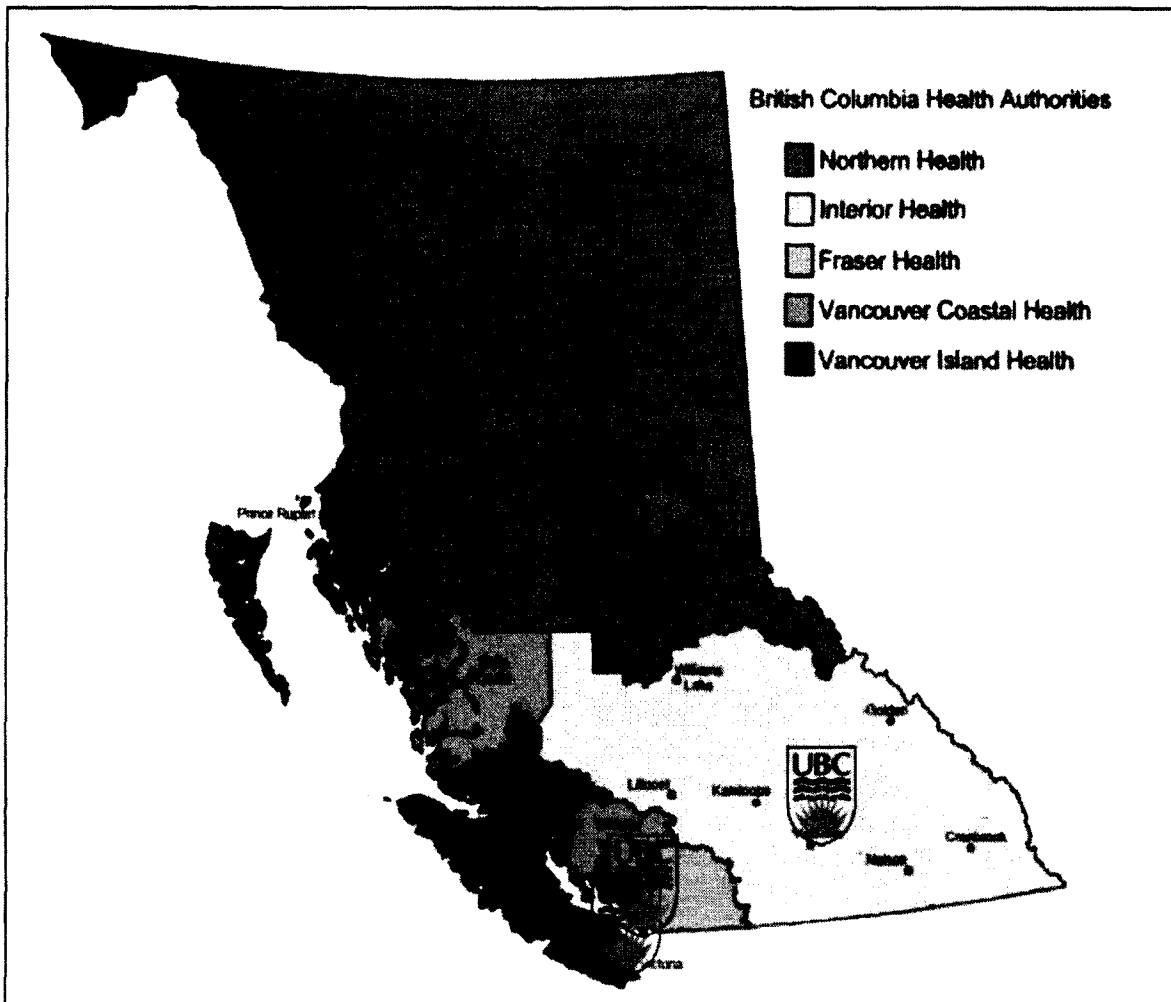


Figure 1. British Columbia's five health authorities with UBC's four undergraduate medical training sites indicated (NMP, IMP, VFMP, SMP). Adapted from "British Columbia Health Authority Regions," by the BC Association of Community Response Networks, 2013, retrieved from <http://www.bccrns.ca/generated/crnhealthauthoritymap.php>. Copyright 2013 by BCCRNS.

medical training in a variety of settings that resemble students' eventual practice locations, distributed medical education relies on combinations of classroom and clinical teaching facilities that are situated both within and outside of traditional urban teaching centres. Students admitted to the NMP and to UBC's two other distributed sites (IMP and SMP) spend their first four months in Vancouver, and then in January, continue their studies at their respective sites (UNBC, 2012b). The remainder of their four years in medical school is spent on campus and in various

communities, at “in-hospital and community-based clinical settings (including rural and remote sites)” (Tesson et al., 2005, p. 407).

As can be seen in Figure 1, Prince George is situated within the region served by the Northern Health (NH) Authority. Unlike the southern third of the province (population 3,860,079, area 333,229 km²), the North is sparsely populated with a total of 253,408 residents spread across 592,116 square kilometers, amounting to a population density of 0.4 residents per square kilometer (BC Stats, 2011). The Northern Health Authority has the highest proportion of Aboriginal people in the province (BC Stats, 2006a) (see Table 1). While many northern BC residents live close to small cities, even those urban hubs with hospitals or health centres are themselves considered to be isolated, posing significant problems for the delivery of health and other social services.

Table 1: *British Columbia's health authorities.*

Health Authority	Area (km ²) ¹	Population ²	Proportion of the population that identifies as Aboriginal (%) ²	UBC Medicine Undergraduate Site
Interior Health Authority	237,691.7	699,271	6.7	SMP
Fraser Health Authority	15,659.6	1,429,534	2.7	
Vancouver Coastal Health Authority	53,426.0	1,026,224	2.4	VFMP
Vancouver Island Health Authority	56,291.5	704,993	5.8	IMP
Northern Health Authority	592,115.6	253,408	17.5	NMP
British Columbia	925,344.7	4,113,487	4.8	

¹ (BC Stats, 2006b)

² (BC Stats, 2006a)

Known as “BC’s northern capital” (City of Prince George, 2011), the city of Prince George is located close to the geographic centre of the province of BC and in the southern portion of northern BC, making it a transportation, economic, cultural, and service hub, and so-called “Gateway to the North” (British Columbia Travel Guide, 2012). Additionally, Prince George is home to the University Hospital of Northern British Columbia (UHNBC), the largest acute care facility in the region (Bell, 2011). Situated nearly 800 kilometers from the next closest specialized care services in Vancouver, UHNBC cares for 90,000 ambulatory patients, 45,000 emergency room visits, and 9,100 inpatient and day surgery cases annually (Northern Health, 2013), providing medical students with ample and diverse learning opportunities.

The location of the NMP combined with the northern/rural focus of the program predisposes NMP students to criticism and assumptions that they have committed to a career in rural medicine. Even local physicians, who understand better than anyone the challenges and rewards of practicing medicine in northern BC, may assume that NMP graduates intend to remain in the North (Lovato, Bates, Hanlon, & Snadden, 2009; Hanlon, Ryser, et al., 2010).

Controversies

The history of the creation of the NMP is unique and its roots are indicative of its connection to the surrounding communities of northern BC. On June 22 2000, nearly 7,000 northern BC residents attended a rally in Prince George to protest the state of health care in the North (Trick, 2010). Among other issues, this rally highlighted the need for a northern medical training program in BC. In 2004, the first cohort of UBC medical students based in Prince George began their studies. However, the creation of the NMP has not quelled northern BC communities’ concerns about access to local health care services. Since its conception, the NMP has faced skepticism and more recently criticism in the media about its effectiveness at

producing physicians who will remain and practice in the North upon graduation. Unfortunately, the complexities inherent in place-based aspects of physicians' career choices are often underrepresented. For example, in 2011, the CBC published a story with the headline "Northern BC Program barely producing rural doctors" and in 2012, the CBC questioned the NMP's admission requirements, suggesting that NMP students are not required to meet the same criteria as other UBC medical students. In the spring of 2013, word spread that there are no graduates from the second NMP graduating class practicing in northern BC (Trumpener, 2013).

Largely overlooked in these media reports has been the fact that NMP graduates, like other brand new medical doctors in Canada, must complete another two years minimum of postgraduate residency training before they can begin practicing. In addition, it is worth noting that, like other UBC undergraduate medical students, and unlike students who attend rural focused medical programs elsewhere (e.g., National Health Service Corps in the United States; Canadian Military; Yukon residents at Memorial University), NMP students are not required to practice in northern, remote, rural or other underserved communities upon graduation. Each NMP graduate is free to take his or her degree and experience wherever suits him or her.

Having just celebrated the graduation of its fifth undergraduate class in the spring of 2013, the early impact of the NMP on local physician retention rates is difficult to measure. Researchers have begun to explore the impact of new medical students on the workload of local physicians (Hanlon, Ryser, et al., 2010), but because of the variety of postgraduate training options, it is misleading to simply count the number of NMP graduates who are currently practicing in the North and use that number, likely an oversimplified underestimate as a measure of retention. Prompted by ongoing publicity surrounding northern BC's ongoing physician

deficit, this research explores experiences of northern BC-trained physicians pertaining to their decision-making.

CHAPTER 3: METHODOLOGY

In order to learn more about recent NMP graduates' experiences and how these experiences might play a role in the retention of physicians in underserved communities, a series of individual interviews were conducted. This thesis adopts an exploratory qualitative approach informed by phenomenology. This chapter outlines the objectives and methodological considerations of the thesis, including key ethical concerns and knowledge translation activities undertaken.

Objectives

In order to build upon previous research into the recruitment and retention of recent medical graduates, and to provide information that is relevant and useful to the unique context of northern BC, this study asked NMP graduates about their experiences and influences prior to and during medical school, their current levels of satisfaction with their practices, and their future plans related to practice and location. Despite the recognition of an imbalance in supply and location of physicians (Blumenthal, 1994; Cutchin, 1997b), recent medical graduates' and new physicians' voices are largely absent from the medical education and policy literature, especially within a northern context. Through this study, the experiences of recent NMP graduates will be shared, providing insight into how new family physicians develop a sense of attachment to place, and how they might be better supported and retained in underserved communities.

Research Questions

Building on the well-documented relationship between geographic background and practice location (Laven & Wilkinson, 2003), and bringing in the understanding that medical students' preferences and intentions change throughout their training (Burack et al., 1997; Basco & Reigart, 2001; Tesson et al., 2005), the overarching question that guided this research is: *What*

influences the evolution of NMP students' career decisions and place preferences throughout and after their medical training? In order to answer this question, the following secondary questions have further focused the research:

- What impact do factors such as geographic background and medical school experience have on NMP graduates' practice decisions and location-based preferences?
- How can experiences during and following medical school (e.g., mentoring, rural placements, residency) influence an NMP graduate's sense of rural and small town affinity?

Study Design

In order to address these research questions, the research design needs to engage with the lived experiences and preferences of NMP graduates. Phenomenology is a well-established research methodology that focuses on individuals' lived experiences and how they are similar and different (Lopez & Willis, 2004). Thus, phenomenological research facilitates the in-depth understanding of individuals' personal and developmental experiences required to answer the principal research question. Broadly, phenomenology is concerned with uncovering the 'meaning' or 'sense-making' of the lived experience (Marshall & Rossman, 1995). Specifically, phenomenology examines experience based on "how [individuals] perceive it, describe it, feel about it, judge it, remember it, make sense of it, and talk about it with others" (Patton, 2002, p. 104).

Creswell (1998) explains that phenomenological approaches require that the researcher identify a phenomenon and collect data from "persons who have experienced the phenomenon, thereby developing a composite description of the essence of the experience for all of the individuals" (p. 54). The underlying epistemological intention of phenomenology is to "reduce individuals' experiences with a phenomenon to a description of a universal essence" (Creswell, 2007, p. 58) or commonality. It is worth noting that the word "reduce" in this description of

phenomenological essence should not be mistaken for a reductionist approach or philosophy. Unlike reductionism, which is traditionally associated with physical sciences and seeks to understand systems by examining their component parts, phenomenological approaches to research seek to facilitate the understanding and appreciation of the totality of the interactions of people's experiences. While it underlies phenomenon, essence is not discovered by diminishing one's experience into discrete separate components. Rather, essence is explored by acknowledging the inherent complexities and undeniable interconnectedness of experiences.

The design of this study does not adhere strictly to the tenets of traditional phenomenology. Instead, it takes a phenomenologically-informed approach to qualitative research. That is, rather than uncovering an underlying 'essence', my objective is to highlight some of the commonalities and differences in participants' experiences, as described by participants themselves, in order to contribute to a deepened understanding of lived experiences.

Data Collection

As Seidman (2006) describes, the suitability of a method of data collection and analysis is determined simply by its ability to answer the research questions being asked. Therefore, in selecting an adequate research method, it is important to consider the realities of what type of data *should* be collected and analyzed in order to answer the research questions, as well as what type of data a particular method *can* deliver. As Seidman (2006) explains:

The purpose of in-depth interviewing is not to get answers to questions, nor to test hypotheses, and not to 'evaluate' as the term is normally used. ... At the root of in-depth interviewing is an interest in understanding the lived experience of other people and the meaning they make of that experience. (p. 9)

Informed by this orientation, in-depth semi-structured individual interviews (IDSSII) were used as the sole method of data collection for this study. Guided by the primary objective of this research, to explore decision-making and key experiences among NMP graduates, the nature of this research does not require predicting outcomes or testing hypotheses, and interviews remain the most appropriate method of data collection.

Advantages and disadvantages of in-depth semi-structured individual interviews.

Semi-structured interviews encourage conversation and facilitate the sharing of anecdotes, reflections and participants' own sense-making with the interviewer/researcher. The rich data collected provide a foundation for deep understanding of complex phenomena valued by qualitative researchers because participants use their own words to describe their own experiences.

The interviews for this research followed a semi-structured guide with open-ended questions, (see Appendix A), which allowed for the focus and direction of each interview to be tailored to participants' responses while maintaining consistency across multiple interviews (Marshall & Rossman, 1995). As was anticipated, the content and flow of individual interviews varied considerably throughout the integrated process of data collection and analysis process. In keeping with an emergent approach, the interview guide was revised and adapted to suit the content of interviews. Additionally, grounding the interviews in a shared guide gave me a starting point for each interview and ensured that the conversations were focused, effective, and efficient.

The success of the one-on-one interview is dependent on interpersonal interactions, which require that the researcher "[conveys] an attitude of acceptance – that the participant's information is valuable and useful" (Marshall & Rossman, 1995, p. 80). Managing this personal

dynamic in order to collect authentic accounts of personal experiences is dependent on a prerequisite level of expertise on behalf of the interviewer: she must clearly communicate the interview objectives and help the participant in recognizing the value of his or her life history and in articulating patterns and meanings within his or her own lived experiences. Having completed fifty interviews as a research assistant on an unrelated research project, I undertook these particular interviews with prior experience in managing the social dynamics of IDSSII. However, over the course of the data collection period, I continued to refine my interviewing technique in response to the expectations and experiences of the specific study sample. Following each interview, I wrote field notes in which I reflected on challenges during the interview in order to continue to improve my technique, thereby increasing my appreciation of the richness of the stories and the overall quality of the data collected in each interview.

Audio recordings of interviews are often considered to be time-consuming to transcribe and analyze (Marshall & Rossman, 1995). However, it is widely acknowledged that there is value in preserving the depth and richness of the whole account. In addition, recording the interview can either support or hinder the interviewer-participant dynamic: in some instances having a recorder visible might make the participant nervous and self-conscious, however in other cases it might affirm that the researcher is truly interested in capturing exactly how the participant frames and structures his or her experiences. Because these interviews focus attention on the interview participant, some people can be overwhelmed by the attention and may feel undue pressure to answer questions the 'right' way, rather than focusing on the value of their own potentially unique experiences. However, in this study, recording the interviews and having them transcribed verbatim (generously funded by a UNBC Research Project Award) proved invaluable. Without recorded interviews, it would have been impossible for me to capture the

nuances of participants' stories accurately while maintaining the flow of the interview. In other words, the detailed note taking required to accurately reflect participants' rich accounts of their diverse experiences would have prevented me from listening actively and responding to participants' descriptions with appropriate follow-up questions. In addition, at best, the written notes would have been a piecemeal version of what participants had said, unlike the verbatim transcripts, to which I could return to check interpretations of the data against the original raw data. As Vygotsky (1987, as cited in Seidman, 2006) suggests, "Every word that people use in telling their stories is a microcosm of their consciousness" (p. 7).

Individual interviews have also been criticized for not being the most efficient use of resources. However this method of data collection allows for the one-on-one interactions between the sole participant and the interviewer to direct the conversation. While focus groups, group interviews, and surveys are lauded for collecting multiple perspectives in exchange for minimal investment of resources, these group formats present the potential for one person to dominate the conversation, limiting opportunities for other participants to contribute. In addition, unlike written question-and-answer data collection methods, interviewing allows for real-time follow-up and clarification with participants, as well as the option to omit or add relevant questions in the moment (Marshall & Rossman, 1995).

Despite the disadvantages associated with IDSSII, this method is most appropriate for collecting the type of data required to answer the research questions and to meet the objectives outlined above. Other methods of data collection do not afford the flexibility required of an emergent, exploratory design, and limit the richness of data collected.

Phenomenologically-based interviewing. Coined by Seidman (2006), 'phenomenologically-based interviewing' combines life-history interviewing with traditional

phenomenological interviewing techniques. Seidman's version is distinguished by its use of three separate interviews focusing on: (1) life history context, (2) details of relevant daily experiences, and (3) reflections on meanings of those experiences. Seidman justifies this lengthy process by suggesting that "People's behaviour becomes more meaningful and understandable when placed in the context of their lives" (pp. 16-17), and warns against laying the interpersonal foundation for, and exploring the complexity of, life experience in a "one-shot meeting" (p. 17). For the purpose of this research, however, the themes of each of Seidman's three interviews were combined into one three-part interview with each participant due to budgetary constraints and the availability of participants. Conducting three interviews with each participant instead of one condensed interview would have tripled the cost of transcription and would have slowed down the overall data collection-data analysis process. In addition, because of the time demands on physicians, it would have been unreasonable to ask potential interview participants to commit to three ninety-minute meetings, as is suggested in Seidman's framework. However, because of the focused nature of the interview and the similar backgrounds of participants, the goals of each of Seidman's three phases were still met without needing to conduct additional interviews with each participant.

Based on the nature of the eligibility criteria for this study (described below), all individuals who participated in interviews shared common attributes, which eliminated the need for me to spend two additional interviews learning about these pre-existing aspects of participants' circumstances. Participants' understanding of the topic and research objectives was facilitated by pre-interview information provided when they were recruited (see Appendix B). In addition, I provided a verbal overview of the interview, including a restatement of the goals of the research and the aspects of participants' experiences about which I was most interested in

hearing, and allowed participants to ask clarifying questions prior to beginning the interview. The NMP administration provided a letter of support (see Appendix D) and facilitated introductions to potential participants, which lessened the need for extensive rapport building. These circumstances allowed the participants to better understand the context of the research and helped me to focus my questions in order to collect relevant data efficiently.

Each interview allowed me to collect rich qualitative data that was then analyzed and interpreted in order to answer the research questions guiding the entire process. Consistent with Seidman's (2006) framework, the interviews focused on the 'hows' of personal experiences, and not the 'whys'. Instead of asking *why* something happened, I asked participants to explain *how* he or she came to have a certain experience, thereby inviting the participant to describe relevant contextual details they associate with meaningful experiences. By collecting descriptions of dynamic processes rather than static outcomes, the research results are potentially applicable to more diverse contexts. These experiences, described based on processes and the evolution of one's preferences rather than static snapshots or pre/post comparisons, are not only of greater interest to me, but also tend to be more readily linked to similar circumstances discussed in the literature. Again, this research differs from quantitative studies because it is not concerned with cause and effect relationships or the predictive power of certain variables. Instead, this research seeks to build on and deepen the collective understanding of NMP graduates' experiences.

By focusing on experiences and associated decision-making – both those decisions that led to and resulted from particular experiences – I gained insight into participants' lived experiences. In addition, participants were encouraged not only to share their stories from their lives, but also to reflect on how the experiences they described may have impacted subsequent decisions and events, and their overall career paths. Seidman's (2006) phenomenologically-

based interview structure is particularly well-suited to encouraging participants to reflect and to share their interpretations of what they deem to be relevant connections. By talking through the three stages characteristic of Seidman's interviews, participants seemed ready to share their reflections, including those they had both prior to and during the interview, which simplified my subsequent analysis. In many cases, when participants described their experiences, they went on to explain how they believed those experiences had influenced subsequent decisions and outcomes, making what is often implicit, explicit.

Participants

Interviews were conducted with seven individuals, representing half of the total eligible population, as defined below. Participants included males and females of various ages and academic and geographic backgrounds drawn from two of the three NMP cohorts that are currently in practice (see Table 2).

Table 2: *Distribution of participants based on gender and NMP graduating class.*

		NMP graduating class		
		2008	2009	2010
Gender	Male	3	0	0
	Female	3	0	1

Eligibility & Recruitment

Initially, the eligibility criteria limited the study population to those physicians who: (1) had attended the NMP for undergraduate medical education, and (2) are currently practicing

medicine in northern BC (as defined by the Northern Health Authority Boundaries, see Figure 1). Due to the timing of this research, the only eligible participants in this study were family physicians, as other NMP graduates who were pursuing specialties had not yet completed their postgraduate training. In recognition of the relatively small number of physicians who fall into this population, the criteria were expanded to include family physicians practicing in other 'underserved' regions of BC, as well as in neighbouring provinces and territories. In the end, fourteen family physicians were eligible to participate in the study and were contacted by myself and/or the NMP. Six of the seven interview participants were practicing in BC at the time of data collection.

Some participants were recruited based on preexisting connections I had developed (n=4), while others were contacted on behalf of Dr. Paul Winwood, Regional Associate Dean of the NMP, who generously offered to email study information to all eligible physicians. Snowballing was used as a means to gain further entry into the population, with previous participants endorsing the research and recommending names of other potential participants. Individual interviews were conducted either over the phone or in person, and audio recordings were transcribed verbatim by a professional transcriptionist.

Towards the end of the data collection phase, the NMP was publicly criticized because no physicians from the second graduating class had yet returned to northern BC to practice medicine (Trumpener, 2013). In addition, it was reported that the Northern Health Authority is currently facing a deficit of approximately 48 physicians (Trumpener, 2013). Following the publication of these stories, several interview participants asked explicit questions about how their responses would be used. It is possible that these news stories were detrimental to participant recruitment efforts, making eligible participants reluctant to participate in an interview, regardless of whether

it was for research or media purposes. As a result, clearly explaining the purpose of the research and interviews, and assuring participants of their confidentiality became even more crucial.

Throughout the integrated data collection-data analysis process, I continued to assess the content of the interviews in order to remain attuned to the delicate balance between collecting responses which reinforced emergent themes and reaching the point of data or theoretical saturation. Described by Van Den Hoonaard (2012) as the point at which “the researcher is no longer learning anything new in collecting data” (p. 198), data saturation is difficult to identify and unlikely in qualitative research with such a small sample. However, after completing six interviews, I recognized several areas where participants’ responses and experiences overlapped, with little new information emerging, and suggested that an adequate level of consistency of themes existed. Because a seventh interview had already been scheduled, it was used as an opportunity to confirm that a sufficient amount of data had been collected in order to be analyzed and discussed, to make connections to the literature, and to satisfy the requirements for a MSc thesis.

Ethical Considerations

Ethical approval was received from the UNBC Research Ethics Board (see Appendix C) and Dr. Winwood provided a letter of support and approval for this study on behalf of the NMP (see Appendix D). In order to prevent inadvertent coercion, it was important that potential participants who were contacted by the NMP understood that Dr. Winwood was not involved with the research, and that he and other NMP administrators would not know who did and did not participate. Physicians who were contacted by the NMP were encouraged to contact me directly to discuss the research and arrange their interviews, and were assured that their decisions regarding their participation in the research would be kept strictly confidential.

Prior to beginning each interview, participants were made aware of my commitments regarding their confidentiality and the use of their data via an informed consent form (see Appendix E). It was also important to reaffirm that, despite the prospective nature of some interview questions, participants were by no means committing to a particular outcome, nor were they being judged based on their desire to work in a rural, remote, northern, or other underserved setting.

Marshall and Rossman (1995) liken qualitative in-depth interviews to conversations rather than “formal events” (p. 80). Unlike focus groups or other interviewing formats, which can be uncomfortable for some participants when discussing sensitive subject matter, individual interviews support the researcher’s commitment to confidentiality. In the one-on-one setting afforded by phone and face-to-face interviews, only the researcher and the interview participant know what has been discussed, and confidentiality can be more easily maintained. Subsequent management of the data using non-identifying codes rather than names also ensures confidentiality. However, the realities of research in small populations were discussed with participants before each interview. For example, though names and other identifying information would be removed, in such a small eligible population, other details that might not traditionally be considered to be ‘identifying’ could potentially be used to identify participants. Those who agreed to participate in an interview did so despite this risk.

Data, including audio recordings and transcripts are stored in a locked cabinet in a locked office at UNBC, and all computer files are password-protected. Raw data, including audio files, transcripts, and signed consent forms will be kept until December 2018 (five years following my successful thesis defense), and then will be destroyed by the thesis supervisor.

As a thank you to participants, each interview participant received a twenty dollar gift card, and a card expressing my appreciation for their support of and participation in the study. Participants were not promised the gift as part of the recruitment process, so this show of appreciation did not influence participation.

Data Analysis

Spencer, Ritchie and O'Connor (2003) explain a fundamental challenge inherent in qualitative research: "unlike quantitative analysis, there are no clearly agreed rules or procedures for analysing qualitative data" (p. 200). Thus, the data analysis process undertaken for this research was informed by various sources, including Seidman's (2006) framework (corresponding to the data collection methods employed), Ritchie and Lewis' (2003) general guide to qualitative data analysis, and Creswell's (1998) structured steps for uncovering meaning in phenomenological interview data.

After reading and cleaning all of the interview transcripts, the interviews were coded using NVivo 10 (QSR International, 2012). The intended use of NVivo was to store and organize the transcripts, and to highlight patterns and trends in the data. However, the software proved to be less useful for the overall analysis process than I had anticipated. After having invested considerable time working with the software, I discovered that NVivo is most helpful for content analysis, and not necessarily for a more phenomenologically-based approach that seeks to "interpret the 'texts' of life" (van Manen, 1990 as cited in Creswell, 2007, p. 59) in a more holistic way. With several options for measuring word frequencies and running comparative queries, NVivo offered no significant advantages for analyzing entire stories and experiences over traditional analysis done 'by hand'. Despite the limitations of the software, I coded transcripts in NVivo and used the program for data management throughout the study,

relying on the software's quick search functions to find key terms and quotations. In addition, Microsoft Excel (2010) was used to organize data around emerging themes, and to compare and contrast experiences within the sample.

Initial thematic codes were developed inductively, based on the content of the interviews. These categories and concepts were refined and reorganized over time as connections to the existing literature developed. Coded and annotated interview transcripts were then grouped according to participants' self-described contexts of their upbringing in order to compare and contrast the possible impact of geographical background on participants' decisions and preferences. In addition, transcripts were organized based on other similarities and were examined as a subset of the whole, highlighting commonalities and differences within and between subgroups. The identification of shared as well as unique experiences further clarified inter-participant themes, contributing to the understanding of underlying meanings sought in phenomenological approaches to research.

Guided by Patton's (2002) description of data analysis, which "[involves] making sense out of what people have said, looking for patterns, putting together what is said in one place with what is said in another place, and integrating what different people have said" (p. 380), this process sought to explore three different levels of interpretation: self-understanding, critical common sense understanding, and theoretical understanding (Kvale, 1996 as cited in Spencer, Ritchie & O'Connor, 2003, p. 201). While the levels of analysis and understanding are discussed as distinct steps, there was considerable overlap throughout the analysis process. In reflecting on the overall process, it became possible to separate and identify the stages therein.

'Self-understanding' involved interpreting and summarizing the data in order to produce a clear picture of "what the participants themselves mean and understand" (Kvale, 1996 as cited

in Spencer, Ritchie & O'Connor, 2003, p. 201). At this stage, I reviewed each interview transcript and identified areas of emphasis that represented important experiences for individuals. These foci served as preliminary ideas for themes that would be confirmed through subsequent analysis. At this stage, data was organized based on temporal aspects of participants' stories, generating three loose 'phases': pre-, during, and post-NMP influences. This categorization of the data served to highlight what seemed to be integral types of experiences during each phase of development and training, some of which were shared across phases (e.g., influence of personal and family factors on decisions). As descriptions of the research results were put into words, I reorganized the sections, moving away from chronology and restructuring the prose to reflect emerging inter-participant themes.

Next, through 'critical common sense understanding', I sought to contextualize the data by incorporating my general knowledge of the topic with the interview data, to "place them in a wider arena" (Kvale, 1996 as cited in Spencer, Ritchie & O'Connor, 2003, p. 201). At this stage, the results were reorganized once again in attempt to answer the research questions directly. During this stage of analysis I printed out the developing chapter, cut the hardcopy into pieces, and taped these sections under the research questions addressed therein (Figure 2). New sections and patterns emerged as pieces of the data were physically rearranged, which led to the development of a pathway to describe the results (as presented and discussed in chapter 4).

Finally, 'theoretical understanding' had me draw upon related academic literature to situate my data within a "broader theoretical perspective" (Kvale, 1996 as cited in Spencer, Ritchie & O'Connor, 2003, p. 201). With the emerging pathway in mind, I returned to the literature to explore what others had found in relation to the identified topics and stages. The influence of existing research findings served to re-shape my interpretations. These final steps

facilitated the transition from the description of analytical results to the discussion linking the data to established knowledge. The process of building support from the literature into the discussion of results served as a means of confirming interpretations and validating findings. Further verification of the internal consistency of the themes and overall results was provided by my supervisor and committee.

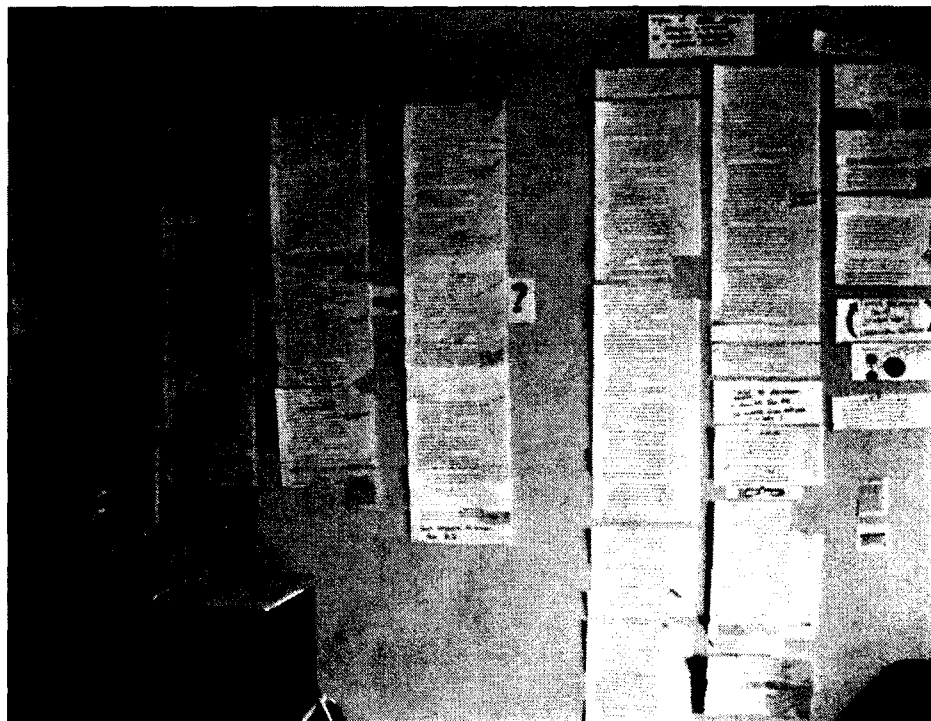


Figure 2. Photograph of the process of reorganizing and restructuring results during the ‘critical common sense understanding’ stage of data analysis. Research questions were used as headings as can be seen in the photograph. The results of this stage of analysis led to the development of the pathway discussed in chapter 4.

Unlike quantitative data, qualitative data cannot be analysed and interpreted in an objective way. Every qualitative study is shaped and coloured by the expectations and interpretations of the researcher, and as a result, qualitative research is often disparaged for its

lack of rigour. With this criticism in mind, this research was undertaken with the intention of incorporating as much rigour as possible into the research process. Beginning with the selection and wording of the research questions that framed the study, and concluding with the interpretations and presentation of the data collected, I consciously attempted to reflect on and justify my decision-making in order to be able to communicate the systematic nature by which I undertook this research. As suggested by Mays and Pope (1995), qualitative researchers must account for their decisions and interpretations throughout their reporting in order to provide the reader with sufficient detail so that another researcher may conduct the same study and arrive at the reasonably similar conclusions. In order for this to be achieved, I have included rich descriptions of my research methods, including sampling procedures and the interview guide, as well as my use of analytical framework and many of the reflections that shaped my eventual conclusions. The influence of assumptions and biases is addressed in the results and discussion sections that follow.

Knowledge Translation

A poster, which provided an overview of the study design, including frameworks for data collection and analysis, was presented at Northern Health's annual Research Days conference on November 15 & 16, 2012. This same poster was also presented at UNBC's Graduate conference on February 28, 2013. Preliminary findings were presented orally at the UNBC Graduate conference (March 1, 2013) and at the Western Division of the Canadian Association of Geographers annual conference (March 9, 2013). The final results were presented orally at the Canadian Association of Geographers conference on August 13, 2013, where I received a student presentation award. These final results, told through stories and vignettes, were also presented in poster form at Northern Health's Research Days conference, November 13-15, 2013, where I

received a student poster award. Following defense, knowledge dissemination will continue through publication of key research results.

In addition, a summary of key findings and potential recommendations will be provided to the NMP faculty in the form of an invited presentation (February 2014) and an executive summary report to follow. Based on NMP graduates' positive and negative experiences throughout their training and early practice years, this research will help to highlight what is working well and what could be improved in terms of fostering a connection to northern communities. While the research was undertaken with the aim of improving physician retention in underserved northern communities, this and other research into the NMP's strengths and weaknesses will allow program administrators to make informed, meaningful decisions about how it engages and teaches current and future medical students.

A deeper understanding of the interactions among factors such as the common backgrounds of physicians who choose rural practice and the impact of exposure to rural settings will help medical schools to support their students, and may impact the numbers of graduates who will go on to practice medicine in rural communities. As such, results from this research may also inform other Canadian and international medical programs that aim to effect physician maldistribution in other underserved areas. In addition, findings from this research may be applied to other health human resources contexts, potentially supporting the retention of other health care providers.

CHAPTER 4: RESULTS & DISCUSSION

Guided by the overarching research question, *What influences the evolution of Northern Medical Program students' career decisions and place preferences throughout their medical training?*, data analysis and interpretation sought to highlight and understand the contexts of key influential experiences and attitudes. This chapter presents a summary of important results, featuring direct quotations using participants' own words, integrated with a discussion of prominent findings that emerged during the data analysis phase of research.

The organization of this chapter is based on an heuristic pathway model developed to answer the original research questions (as discussed in chapter 3). This pathway organizes the rich data collected through interviews and serves as a framework through which results are discussed. Overall, the analysis considers how student factors and NMP and postgraduate experiences might influence NMP graduates' practice decisions.

According to Cutchin (1997b), physicians' development and decision-making related to place is dependent on "the combination of a unique personal history and self with a specific location and time" (p. 32). As introduced in chapter 3, organizing the data based on the timing and sequencing of influential events and decisions throughout participants' lives served as a starting point for understanding how participants arrived in their current practice settings. However, the chronology of these milestones offers only one perspective on the story. Subsequent stages of data analysis deepened the understanding of participants' lived experiences by integrating other key aspects, such as the evolution of their perceptions and expectations throughout their training. These analyses produced an understanding built around themes described by participants, with important temporal and sequential aspects included for context.

Details about the recruitment strategies used and the composition of the study sample are discussed in chapter 3. However, it is worth noting that the sample, and thus the results, are not representative of NMP graduates or medical students in general, nor were they intended to be. This research seeks simply to explore the experiences of the seven individuals who participated in research interviews.

One of the central questions guiding this research focused on identifying how individual student factors, together with NMP and postgraduate factors, influence practice decisions. Based on participants' responses, the following shaped their overall practice location pathways:

- How student factors influence one's preferences for the NMP;
- How NMP factors influence one's practice decisions;
- How NMP factors influence one's postgraduate choices; and
- How postgraduate choices influence one's practice decisions.

The pathway model (Figure 3) highlights key stages that have been identified as having influenced participants' decisions. The development of this pathway is based on a concept outlined by Burack et al. (1997), who describe the decision-making process as a 'black box' in which "the inputs have been catalogued and the outputs agreed upon, but what goes on inside the box remains a mystery" (p. 535). These 'inputs' include individuals' "starting points" (Burack, et al., 1997, p. 535), such as where they were raised and attended school. Students' perceived temporal and financial pressures and personal preconceptions, paradigms and biases are also considered to be component decision-making 'inputs' (Burack, et al., 1997). Similarly, the 'outputs' are easily labeled, categorized, quantified and understood as graduates' eventual specialty and location choices (Burack, et al., 1997). However, what occurs within the black box,

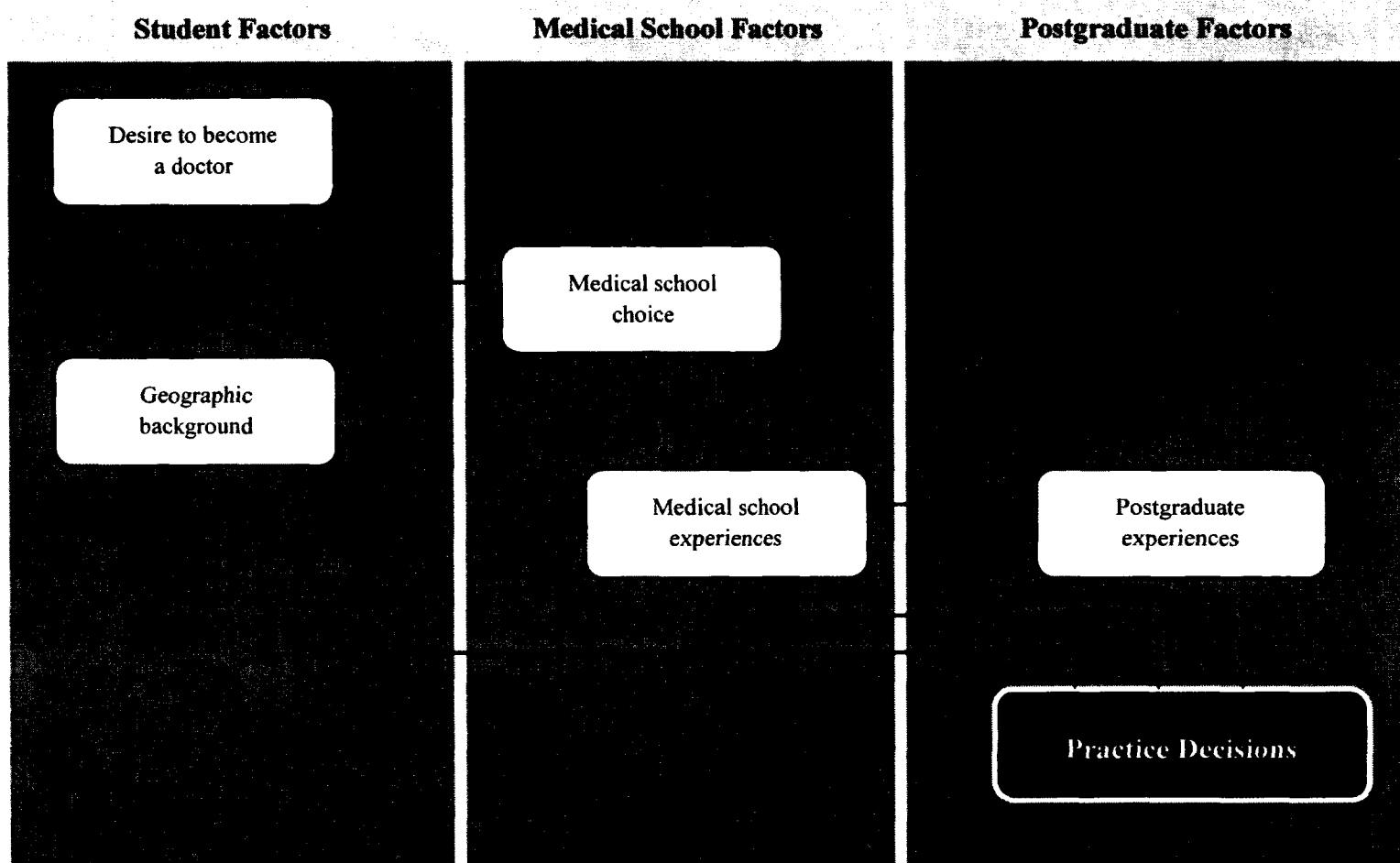


Figure 3. Proposed pathway to explain participants' eventual practice decisions, showing how events and component decisions build on one another and shape overall outcomes.

the pathways between the inputs and outputs throughout medical school, is much more challenging to describe and quantify due to the inherent “deeply personal, highly contextualized” (Burack et al., 1997, p. 535) decisions along the way. Participants’ own descriptions of these decisions and associated outcomes are discussed in the following sections.

Student Factors

The study sample included four females and three males from a variety of academic, professional and geographic backgrounds. In describing their path to attending medical school, participants mentioned having completed their undergraduate degrees in diverse academic disciplines. Two participants had completed graduate degrees prior to attending the NMP. Several participants mentioned the competitive nature of gaining entry into medicine, and explained that they had been exploring additional educational and professional opportunities immediately prior to being accepted into the NMP. By acknowledging the diversity of participants’ backgrounds, key results discussed in this chapter can be more readily contextualized.

Barer and Stoddart (1992) suggest that, although there are common factors that tend to influence physicians’ decisions, “their relative importance will not be the same for any two physicians” (p. 619). As such, I sought not only to identify these potential ‘factors’, but also to explore how and why their relative importance differed among participants. In addition to the role of geographic background (discussed in chapter 2), Rogoff (1957) explored the influence of family members’ careers on young people’s educational and career goals. She found that children of physicians became interested in medicine as a career at earlier ages than on average (Rogoff, 1957). As such, it was important to explore how aspects of participants’ backgrounds may have predisposed them to make various life choices. Two key aspects are considered in this

section: (1) each participant's desire to become a doctor, and (2) individuals' geographic backgrounds. Interview questions (see Appendix A) were developed to encourage participants to reflect on how these aspects might have shaped decisions that lead to their current practices. Participants' descriptions of these relationships integrated with my own discussion of the interplay among various factors follow.

Desire to Become a Doctor

Within the study sample, there were three general paths that led these individuals to pursue medicine: (1) some participants described a strong desire to become a doctor from an early age; (2) others had a general interest in science and working with people and had pursued other career interests prior to applying to medicine; and (3) some described not having had a clear career path and having applied to medicine on a whim or as a back-up plan.

Lifelong desire to become a doctor. Among the first group, one participant described a nearly lifelong desire to become a doctor as well as what she believes influenced that early decision:

I wanted to be a doctor since I was six. ...Yes, there was a couple of things [that shaped that idea]: I was a pretty early reader and I remember reading books about sick kids and wanting to help sick kids and I also remember reading a Bernstein Bears book which was all about careers and for whatever reason there was a picture of a doctor bear and she was holding a hypodermic syringe and she was almost certainly doing vaccinations but I was absolutely fascinated. (Participant 6)

When asked about whether her early interest in becoming a doctor changed over time, she explained that she had considered other careers, as most young people do, but returned to her original plan: "It's always been medicine for me. I've considered teaching; I considered the

ministry, but never really seriously. The plan was always medicine. ... So that was always the plan, right from the word go” (Participant 6). Another participant echoed this early commitment to medicine, and similarly, mentioned fleeting interests in other fields: “I always wanted to sort of be a doctor. If you look back at my school book, it was teacher, teacher, doctor, doctor, doctor, doctor” (Participant 2).

Doctor as one of several career options. In contrast, other participants described a sense of uncertainty about their eventual careers and explained that they had considered several possible career paths. One participant explained that, although pursuing medicine was ‘a goal’ for him, it was not his only area of interest, and as a result he explored other scientific fields prior to attending medical school:

I was interested in medicine from an early age; in high school I was interested in going into medicine. That was a goal. I was also interested in forestry and botany. I wasn’t too sure where I would land so I did some research and some training in botany as well.
(Participant 4)

Similarly, another participant described an early interest in medicine, which morphed into another career interest, and eventually led back to pursuing medicine:

When I was quite small, I thought that I wanted to become a doctor and then ... I sort of changed this idea of being a doctor into becoming a veterinarian and that became my really primary focus for almost the rest of my teenage and early adult life. ... [When] I worked on a voluntary paramedic service in a small community ... I rediscovered this idea of human medicine and that people get really sick and with really interesting conditions and maybe I could contribute to that part of the team, being a doctor to the

paramedics and the nurses that I was working with. So then I started to go back to this idea of human medicine and applying that route. (Participant 1)

A third participant described a similar history, explaining that he worked in another area of science prior to applying to medicine:

Before I started medical school, I was unsure about what I wanted to do. In high school, I was into sort of sciences, math, physics and thought probably I would do engineering. ... Because I had thought a little bit about medicine, I specialized in biotechnology [in university] so I would have some of the prerequisites to do that. But basically before I got into medicine, I really didn't know that much about it at all and I think it was kind of a nebulous thought, a doctor is a cool thing to be, so, but mostly I thought I would be in engineering. (Participant 7)

Doctor as an alternative to other careers. A third category of participants described their routes to attending medical school as having been more heavily influenced by chance, and in two cases medicine was a 'Plan B' rather than the primary interest. For example, one participant described her satisfaction with medicine, a career she feels she has 'fallen into', as well as her self-described 'flakiness' about her decision:

I thought of going and pursuing a post-graduate degree ... and I looked into that a little bit but I just decided that medicine seems more appealing ... it seemed like it might've just been more job security almost. ... Like I honestly do think I was a bit flakey about the whole medicine thing. ... Medicine was never this thing that I knew I had to do and so I don't know that I have all the insight into that aspect of it. It just seems like I've fallen into this and it's a great, I'm so lucky to have fallen into this amazing career that has opened up these options for me. (Participant 2)

Another participant referred to the competitive nature of medical school admissions and the need for a backup plan. In response to a question about whether there were other competing educational options at the time he applied to medicine, the participant responded:

Yes and no. I mean I was realistic at that time, I knew in Canada the application success rate is about 15% for medical school and so I went in with my eyes wide open and so medicine was actually a Plan B. My Plan A was I was doing [a different] degree and piecing out what I wanted to do from there. I was thinking maybe graduate school and kind of see where it went ... medicine was just definitely a Plan B and something I was interested in but not something I was counting on. (Participant 5)

One participant who was intent on becoming a doctor also referred to a backup plan, similarly recognizing the reality that not everyone who applies gets in to medical school:

I always wanted to be a doctor and everything else I did was sort of either a plan to get there or a plan to do something that I would find equally as interesting because I had to be realistic and say not everyone who could get into medicine does, for various reasons. So what am I going to do if I don't? So I made sure I did things that interested me as a person looking forward to my future, rather than doing only things that would further me getting into medicine but had no personal interest to me outside of that goal. (Participant 3)

Interestingly, participants from all three of these broad categories of experiences mentioned knowing a physician – a family member, family friend, or other acquaintance – and being exposed to medicine by that individual. However, among the participants who talked about knowing a physician (n=6), there was great diversity in terms of their relationships to those people, and the depth of impact the physician had on each participant's decisions. For example,

one participant recounted having attended a retirement party for a family member who was a doctor in a small northern town: “The whole city was there, the mayor, the police put on a big show, you know, it was interesting to see the effect he’d had over his long career. And so I think that was a big influence” (Participant 4). Another participant remembered having met a physician’s assistant on a family trip, and though she did not understand how his role differed from that of a physician until much later in life, she described herself as having been “fascinated by his work” (Participant 6). Another participant described her experience of babysitting for a physician friend, and getting to “see firsthand what a doctor’s life was” (Participant 3).

Regardless of where the image of being a physician came from, all participants described which aspects of becoming a doctor had interested them. One participant who had explored other professions before applying to medicine explained:

I think part of it too was the, I like the idea of solving problems ... but I also liked the idea of interpersonal relationships ... And then I think also I think there’s part of me that has that, a doctor is a hard thing to be and so there’s part of wanting to be self-actualized and not sort of leave any sort of unrealized potential, would be another, I guess.
(Participant 7)

Though others did not articulate the desire for self-actualization as directly as did this participant, there was a prevalent sense that the challenges associated with pursuing medicine appealed to participants. Multiple participants explained that they were attracted to medicine because they were seeking opportunities to problem solve and work with people, acknowledging the challenges inherent in work that depends on interpersonal and inter-professional relationships. Results from Cutchin’s (1997b) study of physicians’ experiential place integration support this

finding: “If there is one common personality trait among the physician participants, it is their love of challenges and diversity inherent in rural primary care medical work” (pp. 35-36).

Participants’ reasons for wanting to become doctors, as well as the timing of their decisions, fell into three categories, each of which accounted for and lead to different component pathways. However, as diverse as their backgrounds are, each pathway was associated with the same outcomes: attending the NMP, and going on to practice medicine in a northern and/or underserved community.

Geographic Background

Demographic data about participants’ geographic backgrounds were collected in order to develop a more detailed and potentially more complete understanding of how particular experiences impact physicians’ decisions about their practice locations. As previously mentioned, a physician’s ‘geographic background’ has been identified as a strong predictor of eventual practice location (Rourke, 2005; Dunbabin & Levitt, 2003; Hancock et al., 2009). However, as with other predictors derived from demographic information, there are often complexities inherent in cause-and-effect relationships that are not accounted for. In order to avoid these gaps, participants were asked to describe the location and other contextual aspects of their upbringing. In addition, participants were invited to describe what they identified as other places that influenced their personal and professional development, attitudes and preferences.

Personal definitions. A lack of consensus in the literature around terms like ‘rural’ and ‘northern’ prompted me to ask participants to provide their own definitions of such terms. Participants’ personal definitions are diverse and reflect their perceptions related to their current geographic contexts as well as past formative experiences and attitudes. For example, in defining ‘northern’, some participants used specific locations as reference points: “I think you have to

come up as far as Chetwynd to start calling yourself ‘north’” (Participant 6). However, other participants’ descriptions were based on institutional or organizational boundaries, such as those of the Northern Health Authority: “I guess I would divide it along the lines of the health authority so those kinds of somewhat arbitrary political delineations” (Participant 5).

At the beginning of each interview, participants were asked to describe the places where they were raised. Three participants stated that they were from ‘a northern place’. In addition, two participants self-identified as being from ‘a rural place’, and two described the place where they grew up as ‘partially rural’. However, the labeling of one’s background as ‘urban’ or ‘rural’, or ‘northern’ or ‘southern’ is often an overly simplified abstract concept, which can lead to inaccurate assumptions about people’s experiences. For example, one participant shared the complex and contextual nature of describing his background:

Well I mean I’m from the North. Yeah, I grew up down in the Lower Mainland but that was half a life ago and I don’t know, if I’m down in Mexico and someone asks where I’m from I’ll say Prince George, I won’t say Vancouver, so I don’t know how to define it in more depth than that. It’s a feeling. (Participant 5)

On several occasions, participants’ responses to these questions explained that a particular term was most meaningful when used to describe a place relative to another place. For example, one participant discussed the meaning of ‘northern’ by explaining the relative and flexible nature of the term: “It’s a relative term, I mean, if we were having this discussion in California people from Seattle are northern and you know for me right now I still think of Prince George as northern I guess” (Participant 5). Similarly, another participant made comparisons across Canada to explain what ‘northern’ can mean in different contexts:

I mean Kenora is northern Ontario and that's not really that north at all, right. And even other places in Ontario [that] are much further south than Kenora are considered northern Ontario. So I think it's just like north of the biggest cities. ... Places like Edmonton, I don't think is necessarily considered northern even though it is definitely north, but I think anything north of Edmonton is considered northern because it's more remote in Alberta. (Participant 7)

The opportunity for participants to provide contextual definitions of their terms while describing their experiences in detail is an important consideration when taking a phenomenological approach to qualitative research. The words participants use to conceptualize and communicate their experiences are important details, indicative of their attitudes towards their experiences. The language and personal definitions used in interviews contribute richness to the data.

Rural and northern exposure. The NMP is the only of UBC's four satellite campuses that assesses applicants' "Rural and Remote Suitability Score" (RRSS) (UNBC, 2012a). In addition to the application information collected by the UBC's other undergraduate medical training sites (VFMP, IMP and SMP; see Figure 1), the NMP asks each applicant for information to assess his or her aptness for attending the NMP. Among other factors, this evaluation is based on the "applicant's experience in rural/remote/northern/Aboriginal communities, activities relevant to rural/remote/northern living ... and ties to rural/remote/northern locations" (UNBC, 2012a, para. 2). Based on the NMP's inclusion of this additional admissions criterion, there is an assumption that all NMP students have at least some exposure to the settings described above. In reality, however, there is great variability in terms of the types of experiences and ways in

which participants have been impacted by the places they have visited, worked, studied, and lived.

During the interviews, along with questions about where they were raised, participants were asked about other opportunities they had had to learn about and/or live in northern or rural settings. As previously mentioned, some participants were familiar with such places based on where they grew up, while others had very limited or no exposure to these settings prior to attending the NMP. The collection of this data reflects the reality that ‘geographic background’ does not necessarily capture the entirety of significant and influential experiences in a particular place, as it tends to represent a limited time period in one’s life. Participants mentioned experiences later in life that had an influence on their place attachment and decision-making. One participant, in explaining why she likes where she currently lives, described the first time she moved to a smaller community: “I was [working] in a small town ... and I liked it, I liked the town and I liked the people” (Participant 2). Two participants from urban backgrounds mentioned summer jobs that had brought them north and exposed them to a different environment from where they were raised. In explaining why she thought she had been placed in the NMP (as opposed to other UBC sites), one participant described herself as “a tree planter who canoed up north” (Participant 2), suggesting that her placement in the NMP was a natural fit.

Early interactions with local healthcare system. After naming the community where he or she grew up, each participant was prompted to elaborate on some of the aspects of the place that I thought might impact the development of one’s sense of connection to that community and/or may have fostered each participant’s interest in pursuing medicine. There was a distinct split in how participants responded to these questions. Some participants clearly

described their interactions with their family doctors, or mentioned the specific services that were available in their communities (e.g., proximity to a hospital). One participant described her experience: “We had one doctor in town, Dr. [Name], and she did basically everything. There was no ambulance service and trips in to [the city], to the closest hospital were... It was a significant undertaking to go to the city very often” (Participant 1). Another participant provided a similar account of her familiarity with available health care services:

At that time I wouldn't say healthcare was complete, Joanna, but pretty darn good. You know, I mean we had a surgeon there, he was a GP surgeon, but still very skilled. We had, our GP is there, babies were born daily in [the town], yeah, it was really quite complete really. I mean really high end specialist stuff, high end internal medicine, a cardiogram, some of the specialty imaging and things like that we couldn't do there, but otherwise we really had very good healthcare. (Participant 6)

Other participants had more trouble describing healthcare in their ‘background’ communities, often having difficulty in remembering their limited interactions with the healthcare system:

I don't know, I think when I grew up there ... as far as access to healthcare, you know, [we had] pretty much anything. I didn't have a lot of sort of medical needs or anything growing up but from what I understand, I'm pretty sure there's access to pretty much any specialty and most of subspecialties. (Participant 7)

Another participant shared a similar experience of not having had profoundly influential interactions with the healthcare system, and thus not having a detailed recollection of the services available where he grew up: “In terms of access to healthcare, you know, I can't really

comment, I don't know. My mom always set up my doctor's appointments when I was little and I never had very many of them" (Participant 5).

Based on what has been published in the literature about influences on medical students' perceptions of the profession, this study sought to explore how early interactions with the local healthcare system might have influenced attitudes and decision-making within this sample. One might expect that early interactions with the healthcare system may influence young patients' eventual educational and career decisions, however this finding was not accounted for in this small sample. Participants in this study did not describe transformative interactions with the healthcare system that swayed their professional decisions one way or the other.

Preference for the NMP

How and when participants decided to become physicians, combined with influences of their hometowns on their attitudes towards northern and underserved communities, shaped students' preferences for attending the NMP. Of the participants who were interviewed, some explained that they wanted to attend the NMP specifically, while others were focused solely on being accepted into medical school, regardless of the location. Participants who declared a preference for the NMP had various reasons for doing so. For some, Prince George was home, and attending the NMP meant a considerably lower cost of living than they would have encountered in Vancouver or Victoria. This finding is supported by previous research by Mathews et al. (2012), who also found that, within their sample, "many physicians who chose to remain in their smaller 'home' provinces noted the lower cost of living in these provinces" (p. 2). Others explained that attending medical school in another location was undesirable because of spousal and familial ties to Prince George. For example, moving would have meant that their spouses had to find new jobs, or that grandparents would have no longer been able to provide

child care, disrupting the lives they had established and presenting financial pressures over and above the high cost of medical school tuition.

Several participants described a clear desire to learn about northern medicine specifically, and in a northern setting specifically. For example, one participant who said she listed the NMP as her first choice explained that she chose the program because of UBC's reputation for having a "really good Aboriginal program" (Participant 6) and because attending the NMP would support her overall career goals:

With the NMP it just sort of seemed like a sort of a natural fit to me, that my intention is now and has always been to work in the North. ... So for me the opportunity to train in the North was just a very natural progression of what I wanted to do with my life.
(Participant 6)

As was previously mentioned, competition to gain entry into medicine is steep and students often apply to several schools and are willing to go to whichever medical school accepts them. One participant explained that, while the NMP was indeed her first choice, she would not have turned down the opportunity to study medicine elsewhere:

It was medical school that I wanted. It wasn't the NMP. [Being accepted into the NMP] was a nice bonus 'cause I got to be home and in my home community, but medical school was what mattered. I would have gone to any accredited school that would have given me a spot. (Participant 3)

Another participant explained that, although her preference was to study medicine in a northern setting, she decided to apply to several schools in case she was not accepted to her first two choices:

I wanted something with a northern focus ... So I looked at northern programs in particular, the Northern Ontario School of Medicine and NMP but I applied panoramically to as many programs as I could. (Participant 1)

Interestingly, one participant mentioned that, in addition to her lifelong goal of attending medical school, when she heard about the opening of the NMP and learned that she could attend medical school so close to home, it served as additional motivation to complete her prerequisites and apply. The fact that the NMP allowed this physician to be trained in “northern medicine” (Participant 1) close to home and where she would one day return to practice, is a credit to the NMP and aligns with the program’s *raison d’être*.

Participants who expressed a preference for the NMP had either grown up in a northern community or were living in the North at the time of their applications. However, other participants explained that they applied to medicine at UBC without ever really thinking about where they would study. One participant explained that he had not even heard of the NMP until after he had applied to UBC:

When I applied to medicine I didn’t even know the NMP existed and ... I don’t know when I found out. Maybe when I got to the interview and they gave you this piece of paper saying rank your first, second and third choice? And at that point, it was just about getting into medical school. (Participant 7)

Another participant stated, “It wasn’t really a decision, I just applied to UBC and they put me in the NMP program” (Participant 2). When asked about her level of familiarity with the UBC’s different sites, and the NMP in particular, she explained, “No, I don’t think I did knew a lot about it, no. I don’t think I knew anything about medical education in general so I don’t think I would know enough to compare Prince George to Vancouver” (Participant 2).

While they were not represented in this sample, perhaps because they did not choose to practice in the North and thus were not recruited for this study, some NMP students who did not choose the NMP as their preferred site were reportedly very unhappy with their placement. One participant mentioned a peer's dissatisfaction with being assigned to the NMP:

I know in my class there were a few people who were deeply unhappy that they got into the Northern Medical Program and they spent the better part of their first and second year crying in the counseling office that they wanted to be transferred down South.
(Participant 1)

Unfortunately, the small size of this study sample provides only a limited collection of students' reflections on their experiences. These mixed results are an indication of the diversity of students' experiences, both prior to and while attending the NMP.

Preconceptions about the NMP. Several participants explained that they knew nothing about the NMP prior to applying because, as one participant put it, "...it [the NMP] didn't really formally exist. It just did in an administrative capacity only" (Participant 5). Others explained that they were aware of the existence of the NMP, but were unfamiliar with principles of distributed medical education or details of how the NMP would differ from the IMP, which opened at the same time, or the VFMP. One participant explained that, prior to the opening of the NMP, he had received "almost no information at all" (Participant 4) about the campus or distributed curriculum itself, further explaining:

I wasn't sure if it was even going to happen. ... When we had our interviews, at that point after applying, there was a little bit of a slideshow and we met with Dave Snadden¹

¹ At the time, Dr. David Snadden was the Regional Associate Dean for the NMP, within the Faculty of Medicine at UBC, and Vice-Provost of Medicine of UNBC (Snadden & Casiro, 2008). He has since been appointed Executive Associate Dean Education for the UBC Faculty of Medicine (UBC Department of Family Practice, 2012).

but still very little specifics were known. There were no buildings built. There was no curriculum. (Participant 4)

When asked whether the lack of specific details about the NMP was off-putting, the participant explained that, for him, “the personal benefits of going home outweighed it. ... I kind of knew the medical community already, so there were those factors” (Participant 4). Interestingly, some members of the first NMP class stated that, despite not having been able to walk through the buildings or meet students from previous years’ classes, the NMP remained their first choice for medical school.

It would be misleading to suggest that the attitudes and opinions of this sample of individuals represent those of NMP graduates who have moved elsewhere, or even that the opinions expressed by participants reflect those of other NMP graduates working in the North. Subsequent NMP cohorts now have access to much more information about the NMP and may base their decisions about UBC’s four sites on different factors than did the original cohort. The opinions collected through this research are not representative of all NMP students, or even all members of the first NMP class. It would be worth conducting further research with individuals who were not keen to attend the NMP and with those who attended the NMP but have since chosen to practice in non-northern communities, either as a result of their experiences in the program, or not. It is worth noting that the overall presentation of the results from this study might suggest a more straightforward decision-making pathway than exists in reality. It is important to remember that each participant’s account is based on one individual interview in which participants explored their decision-making retrospectively. As such, participants’ reflections on their personal and academic histories may be lacking the intermediate, and perhaps less efficient, steps in the overall process.

NMP Factors

Regardless of whether they declared a preference for, or were simply assigned to the NMP, all participants described aspects of the NMP itself that had impacted their learning and perspectives. The following sections aim to explain how experiences during the NMP play a role in shaping graduates' practice decisions and location-based preferences.

It is possible that the predominantly positive attitudes captured in this study are due to the selection of participants; that is, graduates who were satisfied with their NMP experiences may have been more likely to volunteer to participate in this research, while those graduates who were less satisfied with their time in the NMP may have been less eager to reflect on and discuss their experiences and may have chosen not to participate. With this potential for selection bias in mind, there were several key strengths associated with the NMP that were identified by participants.

Community

'Community' was discussed by several participants and meant different things to different people. As described by Lovato et al. (2009), in addition to new local medical training opportunities, the NMP has brought positive changes to its host community in the form of "an increase in pride and status; partnership development; community self-efficacy, and community development" (p. 457). Because it was the community that rallied for the creation of a medical program *in* the North and *for* the North, members of the Prince George and surrounding communities have been engaged in supporting the NMP even before its first students arrived. As a result, NMP students, including those individuals new to the North, experienced a sense of belonging within the greater northern community.

Two participants explained that the NMP is in a unique position due to its history and how it came to exist, and that the grassroots origins of the program positively impact students' experiences. One participant discussed how the appreciation, excitement and pride expressed by the surrounding Prince George community impacted her time in the NMP:

The buy-in from the community of Prince George and the surrounding communities ... there's something very special about the environment that you get [in the NMP] more than if you were sitting in a humungous class in Edmonton or Vancouver or Toronto. There isn't that same, I don't know, community support I think that you have in Prince George. ... I think the opportunity we had in the NMP was just amazing because of that support from the overall community. It just can't be matched with other programs. It's totally rare. (Participant 1)

At the end of her interview, the same participant wanted to elaborate on her positive perception of the NMP. She explained that the NMP's connection to the community is a significant part of what made her medical training so beneficial, and mentioned the need to support this relationship so that future students can experience the same circumstances:

I really feel that the NMP is, like I said, probably the best program in the country. I say that because I have talked with so many other people who've trained in different parts of Canada and down in the US and overseas, and I think it really is a special program. I hope it can continue to have those elements that made it so good for me. I hope that there can be some way to prevent preceptor burnout and community burnout and to try to keep it fresh and just, yeah, that community buy-in that was really so tremendous when I was there. (Participant 1)

Another meaning of ‘community’ that participants discussed was the strong sense of collegiality within Prince George’s medical community. In fact, several participants used the term ‘collegiality’ when they described the interactions they observed during their training in the NMP. As has been previously reported (Hanlon, Ryser, et al., 2010; Hanlon, Halseth, et al., 2010), the establishment of the NMP has had a largely positive impact on the established medical community within northern BC: the continued growth and increased diversity of the medical community in Prince George are attributed in large part to the establishment of the NMP. A strong sense of ‘collegiality’ was cited as one of the most important reasons for wanting to practice in the North. As one participant explained:

Prince George is a relatively collegial and kind city to work in, so that generally you can stop someone and say ... ‘What would you do for this?’ Or if I’m working in an office, I can walk down the hallway to the specialist’s office and say ‘Where do you think I should go with this?’ or ‘Where would you go with this?’ And they’ll give me an answer, they won’t be just like ‘Whatever’. (Participant 3)

Several groups have reported that, prior to the establishment of the NMP, the Prince George medical community was a cohesive group of physicians (Hanlon, Ryser et al., 2010; Hanlon, Halseth et al., 2010; Toomey, Hanlon, Bates, Poole, & Lovato, 2011), united by their “common goals, routines of social interaction, and various expressions of trust and cooperation” (Hanlon, Ryser et al., 2010, p. 260). However, for some local physicians, the opening of the NMP has changed their perceptions of community cohesion (Hanlon, Ryser et al., 2010). Nevertheless, opinions of newcomers and outsiders suggest that the Prince George medical community is still seen as a strong, cohesive and collegial group of professionals. One participant, when asked about particular experiences that stood out in relation to the NMP said: “The collegiality of most

of the physicians that were [associated with the NMP], and just how much of a team it was was really nice to see” (Participant 2). Previous research suggests that as important as a *good* community is the impact of a *bad* community. Conte et al. (1992 as cited in Cutchin, 1997b) suggest that “a fractured and non-cooperative medical environment” (p. 26) has a “major” impact on a physician’s sense of satisfaction in a community and, in some cases, his or her decision to leave. No participants in this study discussed detrimental professional interactions. In fact, several participants mentioned a strong sense of professional collegiality, which seemed to foster an environment that would be supportive of mentor-mentee relationships. However, within this sample, mentors did not seem to play the important, transformational role that I had anticipated. While each participant was asked about his or her experiences with mentorship, only a couple of participants responded that they had had a mentor before getting into medicine, and a couple of others identified mentors later, after having enrolled in medicine. One participant described her ongoing relationship with her mentors, now as a practicing physician:

I still now have mentors that are very senior physicians in our community that have seen enough and done enough and been persistent enough in their insistence in finding a diagnosis and advocating for their patients to be seen by the specialists that can make special diagnosis of how to cope and how to treat those illnesses and whatever else. Yeah, I think I have lots of mentors that have really shown me what it is and what it means to be a doctor. (Participant 6)

When asked about their mentors, several participants referred to pre-existing ‘friends’ who were physicians and with whom they would consult, rather than teachers and senior colleagues. As described by participants, the influence of a ‘friend’ differed from that of what might be

considered to be a more traditional mentor. In response to the question “Did you have any mentors prior to or during your time in the NMP?”, one participant responded:

Not really. I mean prior to getting into medical school, I had a friend who was a [physician] here in town and he was quite supportive of my application. I don't know if I'd call him a professional mentor. He was a good friend and a resource when needed for questions and such. (Participant 5)

When asked whether the participant thought that that individual had an impact or an influence on his career decisions, the participant said ‘no’, suggesting perhaps that in the absence of mentors, physician friends might support medical students, but do not have the same perceived influence in shaping the mentee's career as a formal mentor would.

Conversely, other participants mentioned senior physicians who were involved as preceptors in participants' training, and who became colleagues after graduation. One participant described his experience with his mentors as follows: “You knew you always had someone watching your back and that felt very reassuring. Rarely is it needed, you know, but every time you had kind of a funny case or challenging situation, you could bounce it off somebody” (Participant 4). Another participant explained the impact of her mentor, who played an informal supervisory role in their shared practice:

For the first while if she saw things that I had done wrong or she would do differently, she brought them to my attention. You know, if you're doing ‘x’, you might want to think about ‘y’ ... So that was really helpful that she did that. (Participant 3)

Cutchin (1997b) uses the term ‘anchormentor’ rather than mentor in his discussion of key individuals who support physicians' integration in place. He describes an anchormentor as someone who:

[Offers] new doctors a vision of what a good rural doctor should be inside and outside of the office, [opens] social avenues for physicians and spouses in the community, and [teaches] them how to take a wider perspective upon and deal with community affairs. (p. 36)

This definition of an anchorperson differs from what most participants described when they spoke about their mentors. Someone who has an influence *outside of the office* and on the social aspects of the integration process was described by only one participant who explained the impact that one physician in particular had on her career:

He was probably the first doc that I ever met that I wanted to be. ... I mean, you look at that person, you go that's it, 'That's what I want to do, that's how I want to be, that's how I want to interact with my patients, that's the way that my life would look.' ... So when you meet somebody doing something that you think personifies medicine and what you want to do with your life, then that's the person that you follow and you kind of model your career after theirs and see what they do and you do it too. (Participant 6)

It was interesting that, within this sample, most of the friends and mentors mentioned were people that participants knew prior to entering medical school. While several participants did talk about changing their minds about specialties throughout the course of their training, they did not attribute these decisions to interactions with mentors.

The variety of sub-themes that participants identified which relate to the importance of community aligns with the significance and diversity of what Cutchin (1997b) termed "socio-cultural themes" (p. 26). Based on Cutchin's conclusions, "that the role of the rural community may be more important than the professional community in retention" (p. 26), it is not surprising

that ‘community’ factors were so prominent and were described by so many participants in this study.

Curricular Components

Some participants, especially those who expressed a preference for attending the NMP, discussed aspects of the curriculum that they saw as unique and beneficial to students. Based on the large population of Aboriginal people who reside in northern BC (see Table 1), social awareness and cultural competency are seen as fundamental principles taught by the NMP. As mentioned earlier, one participant remarked that UBC is known for its “really good Aboriginal program” (Participant 2), and another participant stated that curriculum focused on First Nations people’s health specifically was an important component of the NMP. In reflecting on differences between her first semester in Vancouver and the rest of her time in the NMP, one participant explained that, within the NMP, there was a different attitude towards First Nations people, which allowed for different learning opportunities about healthcare for Aboriginal patients specifically. She explained:

[In our] DPAS (Doctor, Patient And Society) class, they tried to do something on the residential schools or the First Nation experience in the country, and so many people in the Vancouver class ... I don’t think had any clue. Some people hadn’t even heard about residential school and so how do you really get across to those students what went on there and the impact that it has on First Nations and Inuit people and what impact that really has for this country? It’s massive. Anyways, that’s one thing that I definitely came to appreciate more through that experience that was not an actual structured learning point. (Participant 1)

Variety of experiences. Some participants commented on having participated in the care of a very diverse patient population with varying types and levels of severity of health issues. Based on the realities of accessing healthcare services in the North, the severity of cases seen in northern regions is often greater due to a lack of readily accessible preventative care or early interventions in some places. One participant described how this disadvantage for patients might be seen as an advantage for medical students who, as a result, become involved in a great variety of diagnoses and treatments:

I think also in the North you see more advanced pathology because geographically it just takes patients longer to come in to a health centre so you see things at all stages of development as opposed to say the tertiary centre where it's already been worked up umpteen times and you're seeing it at quite a, at a stage that has already been treated numerous times or seen numerous times. (Participant 1)

Responsibility and autonomy. Several participants explained that they felt well-prepared for their respective residencies following the NMP, and some participants attributed this to their access to hands-on training during medical school. In describing the transition between medical school and residency training, one participant compared his NMP experience to those of his residency peers. He explained that adjusting to the steep increase in autonomy and responsibility was difficult for all new residents, but explained that the NMP prepared him for the challenge:

I think probably because of the amount of experience that I got here, the amount of clinical experience and responsibility that I was given here, I think probably I was better prepared for that than some of the other residents. So I think for anybody it's a difficult

transition to go from medical school to residency but I think for me it was maybe a little bit easier than it would've been if I hadn't been here [in the NMP]. (Participant 7)

Interestingly, the sentiment above is in contrast to NMP physician-educators' concerns about the program's heavy focus on team- and problem-based learning, and the fear that such a program would produce graduates who would not be comfortable working independently (Hanlon, Halseth et al., 2010), another participant described her confidence in navigating her postgraduate training, crediting the NMP for her preparedness:

I didn't actually find that transition hard because I think we had been given a lot of autonomy here in the North when we were training, so to move from med school to residency wasn't that big except you knew that you had a few more responsibilities. (Participant 3)

Other participants explained that the training they received through the NMP was particularly beneficial for them because it had also prepared them for their current practices. One participant explained how "northern medicine" (Participant 1) differs from the practice of medicine in other places: "I think there is a difference with northern medicine and the extreme conditions and the personalities that tend to go here and First Nations people and yeah, it's a unique setting" (Participant 1). Although many did not state it explicitly, participants seemed satisfied with their training in preparation for the unique demands of northern practices.

Size of Program

Participants described several positive qualities of the NMP that can be seen as outcomes of the size of the program. Unlike the VFMP, which admits 192 students per year, the NMP, IMP and SMP each admit only 32 students per year (UBC, 2013). Participants mentioned

perceived benefits associated with the smaller class sizes of the NMP and more direct access to instructors and learning opportunities.

Hands-on training. Building on the image of the collegial local medical community, participants also described the opportunities for hands-on learning as a strength of the NMP. Some interview participants who were part of the first NMP class explained that they had the advantage of being the only medical students in their learning environments, and thus, not having to compete or wait in line to participate in procedures. One participant said:

My training was a lot more hands-on here, smaller groups, a lot more clinical opportunity, a lot more clinical exposure here, those types of things that I think were a benefit to a unique experience. Especially since I was a first wave so there was not a lot of other learners nearby. (Participant 4)

However, other participants mentioned that a lack of upper year students might be seen as a drawback to being part of the first NMP cohort. Some participants mentioned minor shortcomings associated with not having the opportunity to learn formally and informally from other students, or not having access to class notes passed down from previous years, but overall it seemed that the positive experiences attributed to the lower ratio of students to instructors outweighed the negatives. One participant described his take on the situation:

Here you don't have the hierarchy ... And by that I mean in a bigger center, you would have a senior surgery resident, you'd have a junior surgery resident and then you'd be the medical student and you're involved in that team. It is good in a way because there is sort of a lot of teaching that goes on between the levels of trainees but also here you have much more direct contact with the surgeon or the internist in whatever service you're working in, who is sort of in charge of everything. So that could be a plus or a minus. I

think for me I feel that that was more of a plus, that I was not in that situation with the hierarchy of residents, but I think there [are] benefits to it. (Participant 7)

Longitudinal learning and patient care. In addition, participants described a preference for training and working in smaller communities through the NMP because they had a stronger connection to patients, which ensured that patients benefited from continuity of care and students were able to observe and often times participate in a patient's care from start to finish. One participant, who participated in an integrated clerkship in her third year of medical school, compared her experience in a small community with training in a larger centre. She explained that, outside of the NMP, there is often a perception that training in small communities is unsatisfactory as compared to larger, busier urban centres. However, she explained:

I think in fact the experiences you get there [in a small community] are richer because you spend more time with a patient, you see them at admission and all the way through. ... You see the overall health experience of a patient more clearly from start to finish in the smaller program than you do in larger places and because of that, you have a better understanding of what happens for that patient, and that serves you well whether you are in family medicine or whether you're in internal medicine or general surgery or whatever it is you choose to be in. (Participant 1)

This sentiment was echoed when participants described their reasons for wanting to pursue family medicine: participants saw value in developing longitudinal relationships with their patients, rather than only seeing them at critical moments. One participant, in explaining how she has incorporated variety into her practice while building and maintaining relationships with her patients, explained:

It's never boring. I do enough in the same place that I get to know people and form longitudinal relationships and see them again and follow them up, but I have enough variety that I'm not just in the same four walls all the time dealing with stuffy noses.

(Participant 3)

Another participant explained the link she sees between family medicine and relationship-building with patients: "Family medicine really does, it really does rest on that relationship and if you have a good relationship with your patients, things are way, way better" (Participant 2). She also mentioned the importance of relationship-building within the context of locuming. She explained that while "usually you're serving a pretty good need" (Participant 2), there are challenges to the vital physician-patient interaction: "You do kind of miss out on that relationship with your patients which is really what it's supposed to be all about" (Participant 2).

Based on these participants' comments about their opportunities for meaningful involvement in patient care, it is reasonable to expect that these experiences and subsequent positive perceptions play a role in NMP graduates' sense of attachment to the communities in which they learn. In addition, it is not surprising that these participants chose family medicine, as the opportunity to care for patients throughout their lives is a key feature of family practice. As will be discussed in the following sections, the practice of family medicine is well aligned with the needs of northern settings, which increases the likelihood that these family medicine-oriented NMP graduates will stay in smaller communities.

Support for Family Medicine

Participants discussed what they perceived as another valuable attribute of the NMP: "There is really great support for people that want to be family doctors" (Participant 6). As described by one participant and echoed by several others, the members of the medical

community who instruct in the NMP, whether they are family doctors or specialists, all see value in training family doctors in the North and are perceived to be exceptional in their attitudes toward family medicine in general. One participant explained:

Family medicine is never ‘pooh-poohed’ upon by any of the doctors in Prince George. The family docs have a really good relationship with all specialists and when you tell a specialist that you’re probably going to be a family doc, they say ‘Oh good, then let me teach you how to be a really good family doc and make really good referrals to the surgeon, the internist, the pediatrician...’ whatever. ... I’m not sure that I would’ve got that good of a response in the city. Because in the city they all think you should do the same as them, you know, whereas I guess that the docs, when you work as closely with full-service family physicians as the guys in Prince George do and all the specialists in Prince George do, I think you probably have a bit better understanding of what family medicine can offer to you as a specialist and your patients. (Participant 6)

Other participants mentioned how this overwhelmingly positive attitude towards family medicine played a role in shaping their own decisions. For example, when asked how he thought attending the NMP specifically influenced him, one participant explained that, although his intention was always to pursue family medicine, he believed that, if he had attended a different program that was not as supportive of family medicine as was the NMP, he would have been drawn towards a different specialty altogether:

I think it would’ve been quite different [if I had attended a different medical program]. When I was going through the program here, even though I had entered and wanted to be a family doctor, I felt like, you know, a lot of draw towards specialties ... I found that tempting throughout the training process. I think that would’ve been much more

competitive, much more temptation if you will, to pursue specialty if I was at another site. (Participant 4)

Overall, participants described more of the NMP's strengths than they did its weaknesses. The importance of factors such as the community and support for family medicine seemed to have impacted these physicians' experiences throughout their training, and may have played a role in their decisions leading to their current practices.

Along with the strengths of the NMP, participants also described what they perceived to be some of the limitations of the NMP. However, what some participants listed as disadvantages were considered to be advantages by others. In some cases, participants even explained how they had personally addressed and compensated for the shortcomings of the NMP. For example, some participants described inadequate exposure to some specialties. Though he did not speculate on how these limitations might have impacted his training, one participant explained:

I think in the scope of medicine that is practiced here is limited in, just in small ways.

Like I've never seen any brain surgery, I've never seen any neurosurgery and I've never seen any cardiac surgery and those are things that we just don't have here. (Participant 7)

However, this participant also explained that he recognized these limitations and decided, with the support of the NMP, to explore opportunities that would meet his educational needs: "In fourth year, I left Prince George altogether to do electives in other parts of Canada and I was able to get that, so in that way it was, I was able to get that, but just not in Prince George" (Participant 7). Similarly, another participant stated that the NMP met his needs and expectations, but for some of his peers who were keen to go into more specialized fields of medicine, the NMP's "exposure to a lot of the specialties was, I would say, weak" (Participant 5). He went on to explain that some NMP graduates saw themselves as being at a disadvantage: "In terms of

meeting people that are involved in the residency programs in the bigger centers and [starting] that networking process, that was lacking” (Participant 5). However, it is worth noting that none of the participants in this study felt disadvantaged by the focus on family medicine they described. Rather, participants described their classmates’ dissatisfaction with the deficiencies they perceived.

Some participants also mentioned a gap in the curriculum where some of the political and business aspects of practicing medicine could have been addressed. However, as described by one participant, these valuable lessons are absent from all medical schools’ curricula: “You’re not really taught about billing. You’re not really taught about time management. ... I mean things that you’re never really taught in medical school or in residency are certainly a weakness of every program that I know of” (Participant 6). Another participant explained the challenges he faced and how he ended up learning about some of the logistical elements of practicing medicine:

When I went through med school and through residency, there really wasn’t a lot of talk through all of that training about what your practice options really are, so whether you want to do locum work or if you want to join a practice or start a practice or what it’s like to run a practice and do billings so the whole business side of medicine was not covered whatsoever. And you know when you get out and you start working, yeah, you’ve got the medical side but the business piece of it is actually pretty big and that was something that was noticeably absent. ... I just learned on my own. I didn’t jump into anything, I did locum work and so you do locum work in different spots with different people and you see all these different ways of doing things and that’s the best way to learn it I guess.

(Participant 5)

Finally, one participant mentioned how other people's perceptions of the limitations of the NMP negatively impacted the decisions she made about her training:

I was told at one point by some preceptors that a problem as they perceived it with [the NMP] was that it was focused on family medicine, which I don't believe, and that it was in really small communities and that you wouldn't see the breadth of presentations or the vast number of patients that you supposedly see in larger urban centers. And so I was encouraged to seek out learning opportunities in big centers. (Participant 1)

She went on to explain that training in a larger urban centre, which she pursued based on the advice of individuals she referred to as "a number of who's who with UBC in Vancouver" (Participant 1), was not only uncomfortable for her, but did not support her career goals. She described outsiders' inaccurate and uninformed attitudes towards the limitations of the NMP as having been detrimental to her experience, and said: "I guess the shortcomings of the NMP are probably perceptually [*sic*] only by those who have been trained or have the expectations of larger centers but I actually see things as being strengths" (Participant 1).

While some participants were more enthusiastic about their experiences than others, each of the interview participants touched upon multiple aspects of the NMP that they saw as strengths. One participant in particular expressed her passion for the NMP and explained that she was eager to share her positive experiences to contribute to what she hoped would become ongoing support and recognition for the NMP:

I'm obviously a fan, you might not hear that from everybody but I think that overall people will probably be very happy and have very positive things to say about this program and that should get out to other people and UBC as well, so that they know how special this program is. (Participant 1)

Postgraduate Factors

Some participants mentioned coming into medical school with an idea of what type of practice he or she desired, including both type of specialty and type of setting. In some cases, however, students discovered unanticipated areas of interest and felt torn about what to pursue. Exposure throughout their undergraduate medical training to their potential practice settings seemed to be an important precursor to decision making.

As was previously mentioned, the only eligible participants in this study were family physicians. Despite this limitation, or perhaps in light of the similarities within the sample, strong connections emerged that linked family medicine or general practice with northern settings. Many of the aspects of family medicine that attracted students to the specialty are better supported in northern and other small communities than in larger urban centres. Similarly, due to their small populations, many small communities can support only family physicians, and not specialists (Mathews et al., 2012). As Barer and Stoddart (1992) explain, “the required patient population generally increases with the degree of subspecialization” (p. 618). Thus, attractors to family medicine and attractors to northern settings are discussed together in order to foster and strengthen the links, thereby potentially improving physician retention in such settings.

Choosing Family Medicine

In their interviews, several participants mentioned feeling attracted to more than one field and, as a result, chose not to specialize. The choice to train in family medicine allowed these physicians to offer a broader scope of practice, and to not have to exclude specific patient populations (defined based on age, sex or medical condition) or types of work from their practices. Offering ‘full-service family medicine’ was identified as important by the majority of participants.

As described in the literature and in participants' accounts, there is great diversity in how family medicine practices operate and in the work done by family physicians (Scott & Chami, 2013; Canadian Medical Association, 2013). Several participants mentioned that they had a sense that the practice of family medicine in a small community differs significantly from such a practice in a metropolitan centre. Participants described a shared understanding that practicing family medicine in a small northern community would be the more desirable option. One participant clearly explained:

Thinking back on it, we all had this perception that doing family medicine is great but doing family medicine in a city would be terrible. And I think that that is something that is said explicitly and also implicitly in everything, in the training that goes on up here and I think that is a big, was a big push for a lot of us. Because I remember I actually really had a difficult time choosing [a specialty], and in all of those discussions, doing family medicine in a city was sort of a non-starter, right? I would hate doing that because you don't get to do, you know, broad-based full-service family medicine like you can in a small community. (Participant 7)

The perception that family medicine in a smaller community differs from family medicine in a larger centre is not unique to NMP graduates. Previous research by Mathews et al. (2012) confirm that it is common for family physicians to decide to practice in a rural setting based on their desire for a full scope of practice. In the words of one of Mathews' et al.' interview participants: "I guess I wanted to go to a rural community ... I just thought it would be interesting as a family physician in terms of using all the skills I had been trained to do" (p. 6).

In some academic and clinical settings, the field of family medicine and the training of general practitioners and family doctors have been looked down upon by those who chose other

specialties, but many participants said that they believed the NMP provided them with the support they needed to become excellent family physicians. One participant described her experience of the ‘pro’ family medicine attitudes of NMP faculty members: “A lot of family doctors [who taught] in the NMP that we met were really passionate about the variety of work that family medicine allowed them to pursue and the different interests they could get involved with” (Participant 2). Yet another participant compared her experiences as a student in a family practice office in a metropolitan centre with those in the North:

Working in the offices there [in Vancouver], just seeing the different scopes of what family doctors did ... [it was] much narrower. They were mainly based in their offices and things like that. And then to come here [to Prince George] and knowing through the grapevine what was out there, but then to meet the physicians here and to find out what sort of practices they had, it was ‘Okay, that’s cool we can do all of these things as a family doctor’. (Participant 3)

The importance physicians place on being able to practice to the full scope of their skills has been previously documented (Mathews et al., 2012; Scott & Chami, 2013). However, the limitations on where different specialties can practice based on the population and resources available are often overlooked. Mathews et al. (2012) explain that specialty choice can have a “limiting effect on alumni who are willing and able to work in rural or small urban centre [*sic*]” (p. 8) but cannot do so for reasons beyond their control. As a result, many physicians who would like to practice in a small rural or northern community cannot because they are limited by the small population base or lack of access to infrastructure they require. In describing what she would look for if she were to relocate to a new community, one participant explained:

I need to have a big enough community that I can do the amount of obstetrics that I want to. ... So for example, I love [small northern town]. I love it there! I've done some locums there, doing mostly emergency work on the weekends or whatever like that for them. Love it there, would happily go there, except that I can't deliver babies, and that's just not okay for me. I need to be able to deliver babies. So I need to have the surgical support to deliver babies or the anesthesia support to do the surgery myself, and I need to have the nursing support. You know what? That's pretty much my rules right there: I have to be able to do deliveries. (Participant 6)

As this quotation clearly illustrates, physicians often have more limited options for where they can practice than it would appear.

'Pressure' to practice family medicine. Although some students might have perceived the NMP's support for family medicine as 'pressure' to choose that particular path, several participants explained that, for students with an interest in eventually practicing in a full-service clinical setting, the experiences to which they were exposed throughout the NMP not only prepared them for subsequent post-graduate residency training, but also contributed to their enthusiasm for an otherwise often overlooked field of medicine. Strasser (2001) describes some misconceptions associated with rural family medicine, chief among them being the notion that "rural practice is somehow of a lesser standard or 'second class'" (p. 2196). However, based on the opinions shared by this sample, it would seem that the message articulated within the NMP is that choosing family medicine leads to exciting, meaningful, rewarding careers.

Within this small, non-representative sample of the NMP graduate population, interview participants all considered the NMP's overwhelmingly positive attitude towards family medicine to be appropriate, and did not see it as having limited or otherwise negatively impacted their

decisions. However, some participants referred to classmates who were committed to pursuing a specialty and may have felt like they were lacking the support and opportunities necessary to follow their desired paths.

In discussing potential sources of pressure on their decision-making, some participants said that they did not feel ‘pressure’ per se, but did recognize clear encouragement from NMP faculty and administration for students to pursue family medicine. One participant explained that the NMP did not discourage any type of practice or specialty, but certainly promoted what they saw as the positive aspects of family medicine:

In the Northern Medical program, I think that they really do try and push us towards family medicine and I think a lot of the conversations that we would have with the, you know, people like Dave Snadden were very sort of, ‘Family medicine is a great career, you should do that.’ And not just him, but it seems like everybody involved in the program ... really are encouraging you to do family medicine and even better to do family medicine in a rural place. (Participant 7)

This participant went on to explain that he believed the dominant attitudes of NMP faculty and administrators were unique to the setting: “I think if I trained in a larger center I wouldn’t, I don’t think I would have that perception [about the appeal of family medicine]. ... Then probably that sort of pervasive opinion wouldn’t have been bred in me” (Participant 7).

As Barer and Stoddart (1992) explain, “the factors influencing decisions about location of practice are intertwined with those about choice of specialty” (p. 618). As a result, it is of little value to examine specialty choice or location choice in isolation. The following section addresses how choosing to practice family medicine and choosing to practice in the North complement one another.

Choosing to Practice in the North

After settling on what type of medical specialty to pursue, students had to decide where they would practice following the completion of their training. Some participants described having made this decision prior to attending medical school. For others, location is a priority over specialization (Costa et al., 1996). Costa et al. (1996) suggest that in some cases, physicians choose a location first and must base their choice of specialty on where they will end up practicing. According to Costa et al., there is a clear link between the size of a physician's desired community and the factors he or she identifies as important, which means that "residents who wanted to practice in towns rate community issues more important than those who want to practice in large or moderate-size cities" (p. 217). This is to say that physicians who want to practice in small towns consider community factors to be a priority over specialty choice or proximity to a teaching hospital, for example.

As might be expected, those participants who had grown up or lived in small or remote communities and who had been exposed to northern family physicians' diverse scope of practice were keen to follow the same path. One participant explained what influenced her understanding of what it means to be a physician: "I thought to myself, 'What is it that I know about being a doctor?' and what I know about being a doctor is what the doctors in [my hometown] do, which is full-service family medicine" (Participant 6).

Participants also discussed how family and other non-professional factors impacted their postgraduate decisions. One participant explained that she always intended to return to her 'home' community to live and practice medicine. Though she had to leave her home to attend the NMP, she was eager to return to the life she had established prior to starting medical school: "I have a house, I have a husband, I have pets and I have a nucleus of friends and extended,

acquired family members in my community” (Participant 1). Similarly, another participant explained the strong role that his family had on his decisions, and that “a big part of [the decision to stay in the North] was pre-determined before training” (Participant 4), supporting the well-documented trend in the literature that, as he described, “people from the North are more likely to stay in the North” (Participant 4).

Other participants explained that they had not considered where they wanted to live and practice until much later in their training. The demand for family physicians is widespread, affording these individuals many options for the location and type of practice they choose. The population distribution and healthcare needs of smaller, more isolated communities make the practice of family medicine an exciting, challenging, and rewarding career the North. One participant said:

I think I had an idea that I wanted to practice medicine in a smaller town. ... [but] I don't think I thought of it in terms of northern/southern. I just thought more in terms of I guess the people in the town and the amenities in the town, you know, more than the actual I guess, you know, latitude of the town. (Participant 2)

In discussing their satisfaction with their career decisions and current practices, several participants explained that they did not believe they would have been as happy as family physicians in ‘the South’ or in larger urban centres. The image of a family physician in a small northern community is vastly different from one in a large city, where family doctors are perceived by participants to be less involved in hands-on care, and are quicker to refer their patients to specialists.

Due to the eligibility criteria used, family medicine is the only medical specialty represented by participants of this study. In the spring of 2013, the first NMP graduates who

entered other postgraduate specialties finished their postgraduate training and can now begin practicing wherever they choose. Perhaps future research will capture their experiences and continue to explore how medical students and graduates make decisions about their careers, however this study offers only the experiences of current family physicians. In addition, because the majority of participants in this study were members of the NMP's first graduating class, their expectations and perceptions of the NMP may differ from those of subsequent cohorts.

Based on the data collected through interviews, it would seem that the practice of family medicine and northern communities as settings for such practices are not only compatible, but mutually supportive. As described by interview participants, the practice of family medicine is seen as more attractive in smaller communities found in northern settings than it would be in larger metropolitan, southern settings. In addition, full-service family medicine is often the only type of medical practice that is sustainable in northern settings due to the healthcare demands of the relatively small catchment population.

Conclusions

Though the intention of this research is not to make direct comparisons or to identify causal factors associated with 'desirable' outcomes (i.e., retention of NMP graduates in the North), there are certainly perceptions that are shared by interview participants that might indicate common underlying attitudes about practicing medicine in northern communities. Based on this research, there is a clear impression that, within the NMP, family medicine is promoted as a field that allows for flexibility and is accommodating to physicians with more than one specific area of interest. Coupled with this portrayal is the predominant opinion that while family medicine in smaller northern communities is great, such a practice in a larger urban centre would not be so desirable. As a result, it would seem that key aspects of family medicine, such

as the desire to be able to practice to one's full scope, to serve a diverse population and to offer a variety of services, best match the healthcare needs of smaller communities, and should prove helpful in achieving the goals of recruitment and retention in smaller centres.

The pathway that has provided the structure and organization of these findings (see Figure 3) is provisional and is based on a small sample of NMP graduates with similar outcomes. While the results from this research are not widely applicable, they do contribute to a clear understanding of participants' experiences prior to, during, and following their time in the NMP. Finally, place integration appears to be an appropriate theory to be applied to physicians' experiences and is useful in explaining their evolving sense of attachment to place. There are several ways to foster this sense of connection, and several factors that contribute to successful integration. Perhaps the most important finding confirms Cutchin's (1997b) own assertion: that although there are similarities in participants' experiences, "each physician's path to integration is different because of the unique blend of dimensions in each story—the result of varied physician-place combinations and interactions" (p. 39).

CHAPTER 5: CONCLUSION

This thesis examines the role of recent NMP graduates' experiences in developing their connections to current practice settings. The research was undertaken with the intention of providing insight into how new family physicians develop a sense of attachment to place, and how they might be better supported and retained in underserved communities. By interviewing graduates of the NMP, I was able to compare and contrast aspects of participants' histories in order to develop an understanding of their shared and diverse experiences. The findings highlight some important influences on medical students' and new family physicians' decisions about practice location. In addition, the research produced unanticipated findings related to medical trainees' practice type decisions, which are intricately connected with their eventual practice location decisions. As will be discussed, this study does indeed provide some results pertaining to the issue of local retention, which are supported by findings from previous research in other contexts.

This final chapter highlights the key findings of this study, organized based on the three research questions that have guided the overall research process. In addition, this chapter includes a discussion of the applicability of these findings due to methodological and logistical limitations. Finally, areas of future research related to this topic are presented.

Key Findings

One primary and two secondary research questions guided this research. The main question that governed the overall scope of this research asks: *What influences the evolution of NMP students' career decisions and place preferences throughout and after their medical training?* Findings suggest that specific 'influences' on participants' career decisions and place preferences begin prior to attending medical school. Some participants explained that their

interest in becoming physicians began prior to or during high school, and was often influenced by physicians that they knew. In many cases, these individuals described a lifelong desire to become a physician. By contrast, others explained that, although they had considered pursuing medicine, they were not prepared to focus on medicine exclusively, and several participants described the idea of becoming a doctor as one of several options. These results support the assertion that programs developed to increase interest in medicine as a career should be aimed at adolescents initially and should continue to support university students. More specifically, popular programs targeted at increasing rural students' interest in rural medicine should continue to reach out to students early in high school so that they are supported as they choose their high school electives, apply to university, and eventually, apply to medical school.

There was also diversity in participants' attitudes towards the NMP at the time of their applications to medical school. Some participants described a strong preference for the NMP, while others were more concerned with being admitted to any medical school, and were not aware of, or interested in, the NMP specifically. However, it is interesting that even those students who had not set out to study in a northern environment ended up practicing in the North upon the completion of their training. This outcome suggests that these participants' experiences throughout their training were largely positive and served to foster an unexpected sense of connection to northern and/or rural settings, despite their initial ambivalence toward the NMP.

Participants also described the influence of postgraduate training on their practice decisions. The dissatisfaction with training in large urban centres expressed by one participant and familiarity and fulfillment associated with rural-focused programs described by other participants produced the same result: confirmation of one's affinity for rural and/or small town family practice. Though these findings pertain to post-NMP experiences, they are still relevant

to this study because they support the assertion that place integration is an ongoing process, with individuals' attitudes, perspectives and priorities developing over time and with experience.

Two additional secondary questions served to further refine the scope of the research, each one focusing on a different aspect of how experiences influence place preferences. The first question asked: *What impact do factors such as geographic background and medical school experience have on NMP graduates' practice decisions and location-based preferences?* Findings from this study, combined with those of previous studies, suggest that geographic background remains a strong predictor of where physicians will establish their practices. However, defining and operationalizing one's 'geographic background' was challenging. In addition to naming their hometowns, participants offered their own personal definitions of geographic terms such as 'rural', 'remote', and 'northern' in order to describe their backgrounds. This process highlights the subjective and relative nature of geographic descriptors, and draws attention to many medical schools' use of inaccurate and superficial labels for 'rural' students. For example, relying on an applicant's postal code at the time of high school graduation as a proxy for geographic background not only overly simplifies the complex relationship between person and place, but also overlooks the realities of frequent relocation, evolving attitudes towards a place, and key interactions and events later in life that transform individuals in place.

Participants in this research discussed pivotal experiences that contributed to their affinity for rural practice, and that occurred outside of their hometowns or after they had completed high school. These accounts support the NMP's use of the *Rural and Remote Suitability Score* to assess the evolution and accumulation of students' experiences over their lifetimes, rather than just at the time of high school graduation. This focus on recent and continuing rural/remote/northern experiences is supported by Rourke's (2005) argument that Canadian

medical schools, in an effort to produce more rural-minded physicians, must support and train all students as they would future rural physicians, looking beyond where students grew up and focusing instead on the characteristics they want to see in their graduates. However, as Curran and Rourke (2004) explain, distinguishing between preexisting attitudes and preferences, and those fostered during medical school, remains a challenge:

Most rural undergraduate medical school programs and postgraduate rural family medicine training tracks actively select or encourage rural-oriented students. This makes it difficult to distinguish between the confounding variables of rural background and rural undergraduate and postgraduate effects, otherwise known as the ‘nature versus nurture’ phenomenon (Bland et al., 1995; Pathman, 1996). (p. 266)

Regardless of medical students’ specific geographic backgrounds, the NMP must continue to support its students’ interests in rural and/or northern medicine. First-hand rural experiences interspersed with time spent in Prince George learning in a supportive acute care facility and in collegial primary care settings combine to provide students with well-balanced and diverse learning opportunities.

Finally, the question of *How experiences during and following medical school (e.g., mentoring, rural placements, residency) can influence an NMP graduate’s sense of rural and small town affinity* further refined and directed the research. Participants’ descriptions of their time in the NMP are largely positive. Aspects of the NMP that were seen as strengths include: the established relationship between the NMP and the surrounding community, the sense of collegiality within the Prince George medical community, the small class sizes, the variety and availability of high quality (i.e., hands-on) learning experiences, and the NMP’s program-wide support for family medicine. One of the most important and relevant findings of this research is

the NMP's success at promoting family medicine as an attractive and desirable career. The NMP experiences described by participants are in stark contrast with what Curran and Rourke (2004) describe as the prevalent Canadian medical school experience:

Medical school is a prolonged urban-oriented social and cultural experience. As well, attitudes towards rural practice by specialist medical school faculty can have a significant impact on an impressionable young practitioner in training. It is believed that medical students are discouraged in both subtle and overt ways from entering primary care specialties and from practicing in underserved areas (Young, 1990). (p. 267)

By contrast, the NMP graduates whose opinions are included here described the NMP as an environment that is universally supportive of students who are interested in family medicine. The congruency of a full-scope family medicine practice with a small northern community was described by most participants. The practice of family medicine in a northern community was seen as an attractive, exciting, and worthwhile career. Participants noted that this sentiment was shared by administrators and instructors alike, including both family physicians and specialists affiliated with the NMP.

Limitations

The findings presented are based on interviews with a small sample (n=7) of the population of NMP graduates who are currently practicing family medicine. The diversity of experiences expressed by this small group suggests that research conducted with a larger sample and when other residency programs are completed would yield an even richer, more developed understanding of the themes that emerged.

Overall findings suggest that family physicians' eventual practice location decisions are the result of a culmination of prior exposures, experiences and decisions that put students on a

particular path. A pathway model was developed to organize participants' histories (see Figure 3), but this diagram represents the evolution of participants' experiences only, ignoring other factors that may play a role in other people's preferences and choices. It is also important to note that, although the various aspects depicted in the pathway are common to several participants, they shape individuals' decisions and experiences to varying degrees.

Due to the eligibility criteria of this study (see chapter 3), the number and types of NMP graduates who were eligible to participate were limited. At the time of data collection, only physicians who had completed family medicine residencies were in practice. Northern Medical Program graduates who chose longer specialty training after graduation and who had not yet set up practices were not included in this sample. Similarly, NMP graduates who were practicing in large urban centres were not eligible for participation. The exclusion of these groups limits the applicability of the research findings. However, it is important to remember that the goal of phenomenologically-based research is not to provide generalizable findings, but rather to provide insight into the experiences of a group with some shared characteristic(s).

These findings are further limited by the timing of this research. At most, participants had been practicing family medicine in their current locations for three years. While it is certainly interesting to study where and how physicians' decide to set up their first practices, it may be too early to consider these local family physicians to be 'retained.' As Cutchin (1997a) explains,

Physician retention is difficult to objectively define. For instance, should physicians be considered retained if they remain five years after location or 10? Physician relocation tends to diminish through time, but some rural physicians with longer tenure do leave

their practice locations. The concept remains a relative one, and the geographic status of 'retained' physicians is always potentially more tenuous than the term implies. (p. 1661)

Nevertheless, these family physicians may go on to spend their entire careers in their current communities, in which case this research will provide a unique snapshot of their early career experiences. It is also important to remember that the process of place integration is dynamic and continuous. As Cutchin (199b) describes, dimensions of integration build over time, and as with retention, it may be too early to assess the degree to which these participants' have integrated in their communities.

Future Research

One of the main objectives of this research was to provide information that is relevant and useful to northern BC's unique context. Previous Canadian and international studies have explored the process through which medical students develop a sense of rural affinity. However, because the NMP has existed for less than ten years, it has not been studied as extensively as other longer-established undergraduate medical programs. Thus, this relatively early research provides what may one day be used as 'baseline' findings on which subsequent studies will build.

Future research could include a follow-up study with these participants that would continue to explore the evolution of their integration within their respective communities and their ongoing satisfaction with their practices and locations. Findings from this current research, combined future research may provide a more longitudinal perspective on NMP graduates' experiences, with the potential for patterns to be identified. Returning to this sample in several years would allow for a different conceptualization of retention to be used to explore the themes developed herein. Alternatively, the repetition of this research with subsequent NMP cohorts, or

with graduates of the same NMP cohorts who chose to pursue specialties, could provide insight into similarities and differences in student experiences beyond its first ten years.

In order to address one of the main gaps within this research, future studies should include the perspectives of NMP graduates who chose not to set up their practices in northern BC. While the current study asked participants about what influenced their decisions to stay in or return to northern BC, future research should ask participants what influenced their decisions to leave. The selection bias inherent in this study could be overcome by selecting research participants with different outcomes (i.e. NMP graduates who are not practicing in northern BC) who might share very different evaluations of their time in the NMP. Conversely, they may have had similarly positive experiences, but could explain what other factors shaped their location decisions.

Ideally, future research will build upon and complement this thesis. The opportunity to scale the research up by including medical students and graduates from other rural-focused Canadian medical schools, from the other UBC sites, or from more traditional urban-centric programs for comparison, and from family medicine and specialty residencies will serve to strengthen the findings and extend the relevance of subsequent findings. The expansion of the study population to include such participants will broaden our understanding of the interactions among influential factors and transformative experiences that could inform how Canadian and other rural focused medical schools engage and teach medical students, which may impact the numbers of graduates who will go on to practice medicine in rural communities.

Closing Remarks

Distributed undergraduate medical programs such as the NMP allow students to be exposed to a variety of educational settings that have the potential to shape and transform

students' opinions and preferences in a positive way. The type of training NMP students receive, which emphasizes community-based and full-service family medicine, provides a meaningful and realistic grounding in rural medical practice. More than this, students are also exposed to the attractiveness of this type of practice. Continuing reevaluation of goals and priorities may result in medical students becoming 'attached' to those particular settings, thereby leading to more stability in recruitment and retention practices for underserved communities.

Using in-depth stories helps us to understand the complex connection between place and practice. Through this exploratory research, I have highlighted and reinforced the potential value of matching medical students' training locations with their personal and professional aspirations. Successful place integration is the result of a complex and often long-term process, but clearly there are critical periods during which place attachments develop. One such period is undergraduate medical training, where students begin to form preferences for both type of medicine they wish to practice, and the type of place where they see this occurring.

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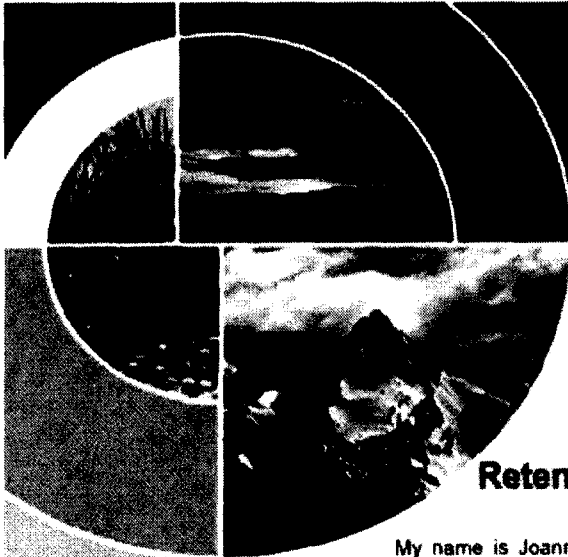
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Appendix A: Interview Guide

	Primary Question	Clarifying / Prompts	Follow-up Questions
Background Context	What is your background?	How would you describe where you grew up? (population size, demographics, services)	Did you spend your entire childhood and adolescence in the same place? When did you move away?
Part I Training to be a Physician	Please think back to before you began medical school and tell me what you wanted for your future.	What did you want to be when you grew up? • Career • Lifestyle (location?)	Where did these ideas come from?
	Please tell me when/how you decided to become a physician?	Who was involved in this decision? Were there other competing educational / career options?	Please tell me about some of the factors that contributed to that decision.
	Please tell me about the decision to attend the NMP. What factors contributed to that decision?	How did you choose the NMP? Was it your first choice?	What did you know about... • the program? • Prince George / northern BC?
	How did your understanding of what it means to be a physician change throughout your time in the NMP?		What experiences impacted your understanding?
	How would you say the NMP impacted you?	How did it impact your... • career decisions? • self as a physician?	Can you please tell me about a memorable experience from your time in the NMP?

Part II Reflecting on being a Physician	Please tell me about your current practice.	<ul style="list-style-type: none"> • specialization • patient population 	What do you like about it? What would you change if you could?
	Please tell me about the transition from medical school to residency. Please tell me about the transition from residency to practice.	What experiences stand out in your memory? How did these experiences impact you?	Were there particular challenges that you remember? How might future individuals in your position be better supported?
	How do you see yourself today?	(Trying to get at idea of rural affinity)	As a “northerner”, “rural physician” or something along these lines?
	What have you learned experientially that you would not have learned otherwise (e.g., in a classroom)?	Why does this experience stand out? Why could this learning not have been taught in the classroom?	
	How have your views of medicine in northern BC changed over time?	Changes to opinions about: <ul style="list-style-type: none"> • life in northern BC • healthcare in northern BC 	What key moments / experiences stand out as being pivotal in forming those views?
Part III Looking to the future	How has your understanding of what it means to be a physician changed since graduating from the NMP?		What experiences have impacted your understanding?
	What do you look for in a community for your practice?	What are the bare minimums? What are the bonuses / perks?	What would make a northern BC community more attractive?
	Where do you see yourself professionally in 5 years?	Where will you be working?	What kind of practice? ...patients?
	Where do you see yourself personally in 5 years?		How do you think personal / family life will impact your professional goals?
Wrap-Up	Is there anything I should have asked you but haven't?		

Appendix B: Information Sheet

Experiences of Northern Medical Program Graduates and Strategies for their Retention in Rural Communities

My name is Joanna Paterson and I am MSc student studying Community Health Sciences at UNBC in Prince George, BC. My supervisor is Dr. Neil Hanlon, Chair of the Geography Program at UNBC.

My undergraduate studies (BASC in Nutrition, Ryerson University) introduced me to a social determinants of health approach to understanding health status disparities, and since then I have been committed to better understanding the health statuses of vulnerable groups. Recently, I have become increasingly interested in accessibility and availability of health care services in the north.


Through my MSc thesis, I will examine retention-related experiences for northern-trained physicians. Specifically, my research focuses on the significant, influential, and transformational place-based experiences of Northern Medical Program (NMP) graduates in order to better support northern communities in retaining a sustainable physician workforce. In order to address this multi-faceted question, I will explore the following sub-questions:

1. What influences the evolution of NMP students' career directions and place preferences throughout their medical training?
2. How can experiences during and following medical school (e.g., mentoring, rural placements, residency) have an influence on NMP students' sense of rural affinity?

I am committed to sharing my findings with interested parties in hopes that my work will contribute to continuous improvements to health services access for northern BC residents. This research is supported and funded in part by the NMP Impacts Research Team, and by a UNBC Research Project Award.


Please feel free to contact me if you would like to participate in this research or if you have any questions.

Joanna Paterson
BASC,
MSc student



patersj@unbc.ca
250-960-8267

School of Health Sciences,
Community Health Science Program



Appendix C: UNBC Research Ethics Board Approval

UNIVERSITY OF NORTHERN BRITISH COLUMBIA**RESEARCH ETHICS BOARD**

MEMORANDUM

To: Joanna Paterson
CC: Neil Hanlon

From: Michael Murphy, Chair
Research Ethics Board

Date: December 14, 2012

Re: **E2012.1121.155.00**
Experience of Northern Medical Program Graduates and Strategies
for the Retention in Rural Communities

Thank you for submitting the above-noted proposal to the Research Ethics Board (REB). Your proposal has been approved pending the receipt of a new project start date.

Once this has been received, we will be pleased to issue approval for the above named study for a period of 12 months. Continuation beyond that date will require further review and renewal of REB approval. Any changes or amendments to the protocol or consent form must be approved by the Research Ethics Board.

Good luck with your research.

Sincerely,



Dr. Michael Murphy
Chair, Research Ethics Board

Appendix D: NMP Letter of Support



November 6th, 2012

Joanna Paterson
MSc Candidate, Community Health Sciences
University of Northern British Columbia
3333 University Way
Prince George, BC
V2N 4Z9

RE: Experiences of Northern Medical Program graduates and strategies for their retention in rural communities

Dear Joanna,

I am writing to confirm my support for your MSc research project studying factors which influence retention of Northern BC trained medical students in rural and northern practices. This is central to the mission of the NMP and I am very much looking forward to seeing the outcome of your studies.

I am happy to help facilitate connection with our graduates and to help in any way that I can to make your project successful.

I wish you success in your endeavors and look forward to seeing the results.

Sincerely,

Dr. Paul Winwood BSc, MBBC, DM FRCP, FRCPC
Regional Associate Dean Northern British Columbia, UBC
Vice Provost Medicine, UNBC

CC Neil Hanlon

Northern Medical
Program

The University of
Northern British Columbia
Faculty of Medicine
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www.unbc.ca/nmp

Appendix E: Informed Consent Form

Participant ID#: _____

Interview Consent Form

Project Title: Experiences of Northern Medical Program graduates and strategies for their retention in rural communities

Purpose: The purpose of this research is to explore determinants of and influences on locational decisions for physicians trained in northern British Columbia (BC). The goals of this research are to learn from Northern Medical Program (NMP) graduates' experiences throughout and subsequent to their medical training in Prince George, and to build on previous research findings in order to address: what influences northern BC physicians' decision-making process, how physicians' place preferences and career directions evolve, and how geographic background might impact medical students' eventual practice settings. This research is being undertaken in partial fulfillment of MSc degree requirements.

How Respondents Were Chosen: You were selected based on two eligibility criteria:

- (1) you attended the NMP for your undergraduate medical education, and
- (2) you are currently practicing or completing postgraduate training in northern BC.

Initial participant recruiting will be done through the researcher's existing connections with NMP graduates in northern BC. Additional interview participants may be suggested by existing contacts ("snowball sampling"), or may be recruited from the College of Physicians and Surgeons of BC's online contact database.

Participation: Participation in this research study will involve one individual in-depth interview take will take a maximum of 90 minutes to complete. Interviews will be conducted by the researcher and will be digitally recorded and transcribed in order to facilitate data analysis. These individual interviews support the researcher's commitment to anonymity: in a private one-on-one setting only the interviewer and the interview participant know what has been discussed and confidentiality can be more easily maintained. Raw data, including audio files, transcripts, and signed consent forms will be kept for 5 years following the researcher's successful thesis defense, and then will be destroyed.

Anonymity and Confidentiality: Your name will not be used in any reporting nor will any information that may be used to identify you. All of the information shared with the researcher will be kept in a locked research office at UNBC, and held within strict confidence of the researcher, Joanna Paterson, and her supervisor Dr. Neil Hanlon. Supervisory committee members (Drs. David Snadden and Margot Parkes) will only see the data in aggregate form, with individuals' identifying information removed. The only other person who will have access to the raw data is a transcriptionist who, before viewing any of your information, will be asked to sign a Confidentiality Agreement. Computer files will be password protected, and code numbers will be used instead of participant names. Individuals will not be identifiable in the analysis of data, nor in any research reports or other dissemination activities.

Voluntary participation: Participation in this research is entirely voluntary. You have the right to withdraw from the research at any time and all information you have provided will be removed from the study and destroyed.

Potential Benefits: Participating in this research will give you the opportunity to reflect on and share your experiences prior to and during medical school, in order to contribute to a deeper and more thorough overall understanding of NMP graduates' positive and negative experiences throughout their training and early practice years. By expressing your thoughts and impressions, you will be providing valuable insights. Keeping in mind the overall goal of improving physician retention in underserved northern communities, this and other research into the NMP's strengths and weaknesses will allow program administrators to make informed, meaningful decisions about how it engages and teaches current and future medical students.

Potential Risks: This project has been assessed by the Research Ethics Board of UNBC. The researcher and her supervisory committee consider this project to be of no known risks to participants. Potential participants can reasonably expect that possible harms from participating in this research will be no greater than those encountered in their everyday life.

Contact for information about the study: If you have any questions about this research please feel free to contact researcher and MSc candidate Joanna Paterson at (250) 552-0114 or paters8@unbc.ca. Final results of this research will be provided as requested.

Contacts for complaints or information about the rights of research participants: If you have any complaints or concerns about this study, please contact either Joanna's thesis supervisor, Dr. Neil Hanlon at (250) 960-5881 or neil.hanlon@unbc.ca or UNBC's Office of Research at (250) 960-5820 or reb@unbc.ca.

I have read the above description of the study and I understand the conditions of my participation. My signature indicates that I agree to participate in this study.

(Name – please print)

(Signature)

(Date)

I have received a copy of the signed Informed Consent Form.

(Name – please print)

(Signature)

(Date)