


# A Qualitative Investigation of the Experiences of Students and Preceptors Taking Part in Remote and Rural Community Experiential Placements During Early Medical Training

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## ABSTRACT

**BACKGROUND:** Medical education can help alleviate the chronic undersupply of physicians to rural communities. Providing students with early rural clinical experiences may allow the gaining of necessary knowledge and skills to practice and live rurally, as well as the desire to do so.

**PURPOSE:** This study aims to provide a detailed understanding of Remote and Rural Community Placements (RRCPs) which occur in the second year of a Doctor of Medicine programme.

**METHODOLOGY/APPROACH:** Using a thematic analysis approach, we examined the experiences of students and preceptors in the RRCP. Data were collected using semi-structured interviews and focus groups.

**FINDINGS/CONCLUSIONS:** Students valued RRCPs as a formative clinical experience and preceptors gained professionally from participating. The RRCPs enhanced students regard for, and knowledge of, rural medicine. Yet, contrary to the stated aims of the placement, students spent very little time in activities outside of the clinic, neither learning about the community nor about the life of a physician as a community member.

**IMPLICATIONS:** Medical educators should recognise that students and preceptors will inevitably place different value on the different socio-cultural and perceptual aspects of placements, namely clinical and non-clinical. As such, the curriculum should draw clearly articulated links between each.

**KEYWORDS:** Community-based education, early clinical experiences, medical education, place-based education, rural medicine, social accountability

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## Introduction

Rural communities struggle to retain physicians which contributes to health inequities characterised by higher rates of disease morbidity and mortality.<sup>1</sup> For example, in Canada, rural residents have a shorter life expectancy than those living in urban centres.<sup>2</sup> Although this is in part due to a higher incidence of workplace accidents in rural communities, increasing access to health care services remains a key priority in rural settings.<sup>1</sup> While insufficient physical infrastructure is sometimes evident in rural locations, it is the lack of health-care practitioners that predominantly underlies the poorer health status of rural residents.<sup>3</sup> The reasons for the lack of rural physicians are many and include personal and professional factors such as geographic remoteness, lack of professional support including high workload, lack of recreational facilities, minimal or no education choice for children, and a deficit of employment opportunities for spouses.<sup>4–6</sup> These actual or perceived negative aspects of rural practice have had a detrimental impact on both recruitment and retention of physicians leading to a

mismatch between supply and demand. For example, although 31% of Canadians live in rural areas, only 17% of family physicians, and 4% of specialists live and work rurally, with this disparity being expected to increase.<sup>7–9</sup> Improving the health of rural populations is therefore, at least in part, conditional on increasing the supply of physicians practicing in rural communities. Training physicians to possess the necessary knowledge, skills, and attitudes for rural practice is a key mechanism to address this gap, with rural community-based medical education being a primary mechanism for achieving this.<sup>10</sup>

The development of community-based medical education has been driven by the desire to train doctors where they will base their future practice, a practice which occurs increasingly within communities. This is in contrast with the more traditional method of teaching students in large urban hospitals. Underlying this change is the idea that medical practice is place-dependent, and that learning in one location does not necessarily equip the student to practice somewhere else.<sup>10,11</sup> This applies both to the knowledge and skills learned, but



also to the attitude and adaptivity of the graduate to practice in contexts familiar or unfamiliar to them, as well as to develop a place-informed professional identity.<sup>12</sup> As such, the training of physicians who can, and who want to, practice in rural communities is best done experientially in rural settings.<sup>3</sup>

Informed by the wider place-based education movement,<sup>13</sup> it is this idea that has led to the development of the Remote and Rural Community Placements (RRCP) at the Northern Ontario School of Medicine (NOSM) which form the subject of this study.<sup>14</sup> The RRCPs were based upon rural elective placements at other institutions which began at Dartmouth in the 1970s, and later at the Morehouse School of Medicine and Eastern Virginia medical school in the 1980s.<sup>15–18</sup> Such placements had been shown to be effective for developing rural physician identities,<sup>8–21</sup> and nurturing positive attitudes towards rural medicine.<sup>22–25</sup> NOSM was established in 2005 with a social accountability mandate to improve the health and healthcare of those living in Northern Ontario, a large region covering approximately 800 000 square km.<sup>14</sup> Although some residents live in smaller cities of approximately 80 000–100 000 residents, many live in small rural and often remote communities, communities which have experienced difficulties recruiting and retaining physicians.<sup>14</sup> The RRCPs represent one of the main approaches for training physicians in rural communities in a manner that prepares them for their later practice in the same northern communities.

The NOSM MD programme comprises a 2-year mainly classroom-based foundational phase occurring in the two largest cities in the region, followed by a longitudinal integrated clerkship which occurs in smaller rural communities, followed by a rotation-based clerkship in the hospitals located in the two larger cities. The RRCPs are embedded within year 2 of the NOSM MD programme and are mandatory experiences which all students must complete before progressing to year 3.<sup>14,26</sup> The RRCPs occur within a 6-week teaching module with the first and last week of the module being on-campus. Both placements are 4 weeks long providing students the opportunity to live in a rural community and learn from one or more of the physician preceptors. Each RRCP placement week includes 15 hours of 'clinical time' and 3 hours spent with other health professionals in the community or healthcare-related agencies. These experiences are in addition to the academic curriculum, which is taught using either pre-recorded lectures or phone-in small group sessions while the students are away from their home campuses. The curriculum of the clinical time component of the RRCP was deliberately left only very generally defined as '(Students) will learn about what it is like to live and practice medicine in these settings'<sup>27</sup> due to a desire to allow the preceptor to teach students what they view as being relevant to the practice of medicine in their own community. This has, however, left it rather unclear as to what occurs during the

placement and how these relate to the desired outcome of preparing students for rural practice.

To address this gap this study investigated the experiences of medical students and their preceptors in the RRCPs to better understand the pedagogies that contribute to meaningful engagement and preparation. The study sought to understand what occurs during the placements, identify outcomes of the RRCPs, and guide future models for RRCPs and similar activities occurring elsewhere. Moreover, given that the RRCPs are experiential in nature they fall within the 'Perceptual' dimension of place-based education,<sup>28</sup> and we ask, 'perception of what?'

## Methods

### *Participants*

Participants were recruited by purposive and convenience sampling. Preceptors (P) who had taken part in the RRCP during at least one of the previous two academic years were invited to participate. Student participants (S) were recruited over two academic years from the Lakehead University campus of the medical school. All participants gave informed consent before taking part in the study according to a protocol approved by the Lakehead University Ethics Board (File # 1462163). In total, 13 preceptors (8 female and 5 male) and 20 students agreed to participate. The gender of the student participants was representative of the gender mix of the class. All students had grown up in Northern Ontario with 11 having grown up in smaller communities and 9 in Thunder Bay.

### *Data collection*

Preceptors were interviewed individually using a semi-structured interview<sup>29</sup> by telephone (P1 – P13); student participants took part in two focus groups (FG1 and FG2) held in-person except for one student who was individually interviewed due to scheduling reasons (S1). Interviews and focus groups lasted between approximately 30 and 90 minutes. Student focus groups took place immediately following the first RRCP of year 2. Both preceptors and students were asked to describe (1) a typical clinical learning session; (2) what experiences, both positive and negative, stood out in their minds; and (3) what they had learned (students) about rural medicine or what they thought students had learned (preceptors). In addition, students were asked specifically if and how their attitudes towards rural practice had changed after the RRCP, and preceptors were asked about why they were involved in the RRCPs and what they personally gained or lost from their participation. The semi-structured interview questions were developed based on the research question and existing knowledge about the RRCPs. Detailed field notes on body language, researcher biases, and affect detectable during the interviews and focus groups immediately following the interview, served as another important source of data in the study.

### Data analysis

All interviews and focus groups were audio-recorded, professionally transcribed, and uploaded to ATLAS.ti (Scientific Software Development GmbH, Germany). Field notes were also transcribed and uploaded to ATLAS.ti. One member of the research team performed the initial coding for the project. Thematic analysis was undertaken using reflexive memoing and successive rounds of coding. The researcher first immersed themselves in the data by reading the data twice, followed by a process of open coding the data, examining small sections of text made up of words, phrases, and sentences. This formed the basis for a preliminary and ever-evolving master 'code-book' for analysing subsequent data.<sup>30</sup> Peer debriefing with other members of the team throughout the process also added rigour and ensured validity. Open coding was followed by axial coding, which helped make connections between the emerging categories and eventually, after being sorted, compared, and contrasted until saturation, led to key themes. In the study, rigour was enhanced using the following strategies: (1) detailed fieldnotes as a form of description, (2) reflexive investigator memoing, (3) professional transcription, (4) data sources and theoretical triangulation, and (5) coders' detailed audit trails including reporting on 'code drift'.<sup>31</sup>

### Results

Preceptors and students (interviewed after the first RRCP) were asked about their experience of the RRCPs and what they found meaningful regarding their participation. In the data, four main themes emerged: (1) motivation of preceptors; (2) clinical experiences of students; (3) communication between preceptors, students and/or the institution; and (4) valuing place and community in medical education, which is described below.

#### *Theme 1: motivation of preceptors*

The interviews with the preceptors revealed why they had chosen to be involved in the RRCPs. Preceptors identified four main motivations.

##### (i) Enhancement of regional healthcare

The involvement of preceptors in the RRCPs flowed from a desire to be part of the mission of the school to enhance the provision of healthcare to the region: 'when I heard about (the medical school) I wanted to be involved ... teaching students so they could actually work here in the future was really exciting, a medical school that actually might help' (P4).

##### (ii) Enhancing clinical capacity

The community preceptors also hoped that their involvement with the school would benefit their clinical practice,

although this was not generally realised: 'it would be good to also have some residents here at the same time to help with the load' (P5) and 'I am happy to take these young students but I was hoping there would be some new docs here by now or even post-graduate learners but that's not happened' (P2). Rather, preceptors articulated how the teaching of novice learners takes time: 'my students have been generally good to teach but it does slow me down clinically but that's to be expected and we are prepared for that' (P9). Such comments reinforce the mission of NOSM—to enhance the supply of rural physicians—while signalling the need to assess the burden of RRCP placements on preceptor workload.

##### (iii) Teaching students about rural medicine

Preceptors also wanted to teach students about the work of a rural physician: 'I get to be the one to show (students) what it is like to be working in a small town, some like it, some probably don't, but they all gain something useful from this' (P2) and 'when I was at medical school I never met a single rural physician and (at NOSM) we are the first (physicians) they get to experience clinical work with' (P13).

##### (iv) Professional development as teachers

Finally preceptors also viewed the RRCPs to have enhanced their development as teachers, particular the mentoring of such novice learners: 'I had only taught residents before and it took a bit of discussion with the student to plan out the time, and even after that I was learning about what their needs were as we went along' (P1) and 'with these students I can't assume much, and I had to learn to break things down for them and really think about what I do and why' (P10). As such, the RRCP structure enabled preceptors to reflect on their own practice and how best to share their situated knowledge with medical students.

#### *Theme 2: clinical experiences of students*

The clinical experiences of the students represented the majority of what was said during their focus groups and can be separated into three subthemes: clinical confidence, formative clinical experiences, and learning about rural medicine.

##### (i) Building clinical confidence

The student participants expressed how much they had enjoyed their first substantial clinical experience in medical school and how it had increased their confidence compared to purely classroom-based learning: 'on the first day I was terrified, I thought I was going to be in the way but by the end I was really enjoying it, I grew a lot' (FG2). The students also referred to how the RRCP helped them feel prepared for their

longitudinal integrated clerkship the following year: 'I was really worried about going away for so long next year but I found (the RRCP) helped me see what that might be like and that it would be okay' (FG2).

### (ii) Formative clinical experiences

The students and preceptors both highlighted the advantages of having formative experiences in a rural practice. They spoke about the opportunity to apply the knowledge gained in the classroom: 'It was good to try out what I had learned in (clinical skills classes) with actual patients, I felt I got a lot better at communicating with patients' (S1) and 'I realise that this is the first clinical experience these students have had and that is a big deal for me, I am glad they had it here' (P2). Second, the need to integrate knowledge gained in the body-systems based curriculum was found to be both challenging and useful: 'the range of patients and things we were doing surprised me, I was struggling to keep up but I learned a lot' (S1) which was echoed by another who talked about a need to integrate clinical knowledge saying 'in (clinical skills classes) I knew what sort of case we would have but in (the RRCP) I had to put a lot of different things together' (FG1). Finally, the variety of clinical experiences was seen as an advantage of the RRCP: 'In one week I was at a birth, saw chemotherapy administered, and had a shift in ER' (FG2) and 'I can't imagine a better place than a small community to learn the basics of medicine. You need to do a lot yourself and I think that leads to a better understanding' (P8).

### (iii) Learning about rural medicine

Student participants recalled many experiences that were specific to rural medicine: 'one patient was really upset when they were told that they would have to go to (larger urban centre) for treatment' (FG1) and 'I learned about how (rural physicians) worked with the physicians in (larger urban centre) to do things they could not do in (the rural community)' (FG1). Interprofessional team work was also identified by student participants: 'working with (Nurse Practitioner) was really interesting, I really felt I was part of a team' (FG2). Student preceptors shared their growing understanding and appreciation for rural medicine: 'I liked the variety of things I did and how everyone worked together' (FG1) and 'I am glad I got to see what being a physician in a small town is like and I really admire those who do it but, to be honest, it's not for me' (FG2).

### *Theme 3: communication between preceptors, students and/or the institution*

The nature and quality of the interaction between students, teacher and the institution emerged as a key theme in the data. First, the relationship between preceptors and the medical school was viewed as lacking: 'I did not hear much from (NOSM) except when they wanted me to take a student, but I

figured it out' (P1). The poor communication impacted two different aspects of the curriculum, the first related to student well-being such as a preceptor's experience with a disengaged learner stating, 'I think they were missing home, they did not seem to really want to be there but I was not sure what was going on with them' (P6). When asked if they knew how to obtain support from the institution for such a scenario, they replied that they did not and commented, 'there are a few of us who do this here, we basically help each other'. Second, a lack of clarity regarding the curriculum was expressed: 'I gave (the student) lots of feedback but (NOSM) doesn't seem interested in knowing what (their students) are achieving except that they showed up' (P10), 'my preceptor was not clear about what we should be doing' (FG2), although this was not always viewed negatively: 'I was glad there were not too many set objectives which gave us a lot of freedom to create something with the student' (P4).

### *Theme 4: valuing place and community in medical education*

One of the main aims of the RRCP is for students to explore their host community and what life is like for a rural physician outside of the clinic. The importance placed on this objective of the placement was starkly different between teachers and students. Preceptors valued this aspect particularly as it related to professionalism: 'I spoke to (the students) about what to do when they met patients outside (the clinic)' (P2) and 'It's important to know that they have to behave really well in public, so I tell them things like I am never seen with a drink in my hand because patients might think that I am revealing all their secrets' (P1). They also noted, however, that students were not so interested in this aspect of the placement 'the (community events) that go on around here are usually on the weekend and students don't have to be here then so they miss them' (P2), while another commented, 'I find it hard to interest students in anything outside the clinic' (P7).

When the students were questioned about what they did when they were not in the clinical environment or 'in class' one student laughed and said, 'sleep and eat' (FG1), and when they were outside of the clinic they spent time mainly with their own peers. The lack of community involvement was not seen as a major deficiency by students: 'I just wanted to spend time learning about medicine' (FG1), 'I was not really interested in the community to be honest because I will never practice there so what's the point?' (FG2) and 'I grew up in (the same community as the placement) so I know all about it already' (FG1). In addition, students commented on feeling overwhelmed during the RRCP as the clinical time with their preceptors was in addition to the regular curriculum: 'I found going to the (regular curriculum sessions) and working with my preceptor exhausting ... (the preceptor) did not seem to know I had other things to do' (FG2) and 'I was asked to come in on the weekend, I just did not want to do it, but I said yes because I wanted

to keep my preceptor happy' (FG1). That this could lead to conflict within the teaching relationship was evident from both preceptors and students: '(My preceptor) was inviting me to additional things over my 15 hours and I had to just say no, they were kind of upset about that' (FG1) and 'I had setup some additional experiences in line with what the student said they were interested in but they refused to come' (P12).

## Discussion and Conclusion

Our data suggests that both students and preceptors view the RRCPs as valuable and as a formative clinical experience. The RRCPs gave the students an opportunity to apply and improve their classroom acquired knowledge in an authentic clinical setting (see Theme 2). The findings suggest the RRCPs contribute to increased clinical confidence, a similar outcome to that of other early clinical experiences in medical school.<sup>32</sup> There was also evidence, in the data collected from students, that the RRCPs may be viewed in part as an 'orientation' for clerkship and we suggest that programmes which seek to include community-based clerkships also include shorter 'in residence' placements in earlier years of their undergraduate programmes for this reason (see Theme 2.i). In addition, it is notable that the RRCPs and community-based clerkship occur in different places. This may allow the student to develop an understanding of how place effects practice and, in doing so, improve their ability to adapt to new practice contexts. As such, an explicitly sequenced curriculum in which students build on that learned in previous placements, perhaps using a combination of articulated learning objectives in concert with a process of self-reflection, may be warranted.

Our study (see Theme 2.iii) also indicates that the RRCPs allowed students to discern experientially important features of rural healthcare such as interprofessionalism, health-care teams, and generalism, both widely accepted as key components of rural medical practice.<sup>33-36</sup> Students also learned about the limits of rural community-based care, and how urban and rural physicians interact to deliver healthcare. There was evidence of students developing a positive regard for rural medicine which may act to enhance the reputation of rural medicine within the profession, as well as to allow students to build their identity as rural physicians, in agreement with previous studies.<sup>18-21,37</sup> As such, experiencing rural medicine early in training may be effective in forming such an identity, as opposed to experiencing rural practice later in training when a, presumably non-rural, identity has already formed.<sup>3</sup>

What can be clearly concluded from the data, however, is that the RRCPs allow students to learn about rural medicine and discern whether, or not, they see themselves as rural physicians in training. The impact of poor learning experiences such as (as suggested by our data and that of others),<sup>38,39</sup> feeling overwhelmed, not being able to gain desired clinical experiences, or having conflict between student and teacher, may reduce the desire to practice rurally as they relate to the

personal and professional aspects of community life that are known to effect physician recruitment and retention.<sup>40,41</sup> Indeed, the suitability of such an exposure model, promoted by both NOSM and elsewhere,<sup>42,43</sup> as an aid to physician recruitment is unclear. This is a key question as it is an important motivator of physician involvement (see Theme 1.ii). While NOSM and others have reported that rural-based training enhances the likelihood of future rural practice,<sup>18,20,22,44,45</sup> it is unknown how the RRCPs effect physician recruitment to these communities. Indeed, preceptors voiced concerns that clinical capacity had not been increased in their community, this being compounded by a lack of senior learners, for example, residents, being placed there that could offset the drag on clinical practice that novice learners represent. Having various stages of learners in the same community at the same time, termed integrated clinical learning, can reduce this effect as more senior learners can add to clinical capacity, but this clearly had not occurred at all placement sites.<sup>46</sup> Such comments also suggest a *quid pro quo* of preceptors taking junior learners with the understanding they would also be able to share their clinical and teaching load with more senior learners or fully qualified physicians, although this also requires further investigation. In the meantime, we would recommend that those designing similar placements pay close attention to the overall student experience if enhanced recruitment to rural communities is desired given that the affective outcome of the placement likely plays an important role.

Our data also indicated that in addition to a desire to teach students about rural medicine and build clinical capacity, the RRCPs also contribute to the development of the professional identity of preceptors as academic physicians, something that is the norm in large centres but is much less a part of rural medicine. Viewed in this way the RRCPs may play an important role in the development of rural academic medicine in that they represent an important initial step towards increasing clinical teaching capacity in small communities that previously had very little. Further movement along such a developmental trajectory is dependent on ongoing and effective communication with the placement communities, something our data suggest can be difficult, perhaps due to geographic isolation. While improved communication in the distributed learning environment may be advantageous for the enhancement of collaborative partnerships with community, using this to exert too much control over the learning experience may not be universally welcomed (Theme 3). While broad curricular aims should be articulated and made mandatory, we would suggest that more detailed curricular materials should be made optional to be utilised by those who need more assistance in structuring their own teaching, particularly those who have had little experience teaching novice learners.

One aspect of our data that we found surprising was the different value of students and preceptors placed on learning outside of the clinic. Given that developing a place-based

professional and social identity is key to recruitment of physicians to rural communities, this is, in this study, a significant finding,<sup>11</sup> and highlights that curriculum intent and actual student experience can markedly differ. Viewed through the lens of place-based educational theory this is fundamentally a difference of how students and preceptors relate to the socio-cultural aspects of the placement location, as short-term residents students would not be expected to value the learning about the wider community context compared to the permanently residing preceptors.<sup>28</sup> In other words, to answer the question about perception asked in the introduction to this paper, what is desired to be perceived and, to a large extent what is perceived, differs between students and their teachers. It is therefore likely that including mandatory community exploration experiences to the curriculum would not result in students valuing such learning unless there is a well articulated connection to clinical work. It is advisable that those contemplating inclusion of such placements in early clinical learning consider making this aspect of curriculum visible in the form of conveying more precise placement learning objectives and facilitating the better communication between students and preceptors, perhaps in the form of formalised learning agreements which include a plan to learn outside of the clinical environment.

In summary, this study highlights that the RRCPs were valued by both students and teachers alike and are effective vehicles to learn about the rural medicine and places. Our study shows, however, that students and their teachers may place different value on experiences gained inside and outside of the clinical environment, something that we would advise needs to be explicitly addressed in the curriculum within the overall context of rural medical education. We also would recommend that those contemplating the inclusion of rural placements during early clinical education play close attention to the overall student experience and the quality of communication with the placement sites, particularly if the placements are intended to aid in recruitment of rural physicians.

### Author Contributions

DG and BMR participated in the design of this study. All authors participated in data analysis and the writing of the manuscript.

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