Until recently medical education has been largely silent on those aspects of the physician’s life, both professional and unprofessional, that differ from place to place. This has contributed to health inequity through an undersupply of health care workers to many communities. A growing movement for social accountability in medical education has made consideration of place an emergent topic in the field. We describe the history of place in medical education, consider how our own institution has attempted to construct a place-based education program, and suggest how the wider place-based education literature can inform the construction of place-sensitive medical education curricula.

Key words: Social accountability, medical education, place-based education, community-based education, health.

INTRODUCTION

In 2005, the town of Geraldton announced it was losing six out of the seven physicians it employed (Canadian Broadcasting Corporation, 2005). The implications for the town’s medical service were dire and there was a fear that the local hospital would close with inevitably detrimental effects on the health of the inhabitants. This exodus occurred despite the municipality offering well above average salaries in an attempt to recruit and retain medical staff. The news report cited Geraldton’s location—a small town in the hinterlands of Northwest Ontario—as the major cause of the difficulties the town was facing. Such a story, common for those locations outside of major population centres, shows one significant way that place plays an important role in health and healthcare. As the people of Geraldton know, some places make difficult destinations for recruiting and retaining doctors. This serious truth is a familiar story in popular culture, as seen in the television series Northern Exposure and Hard Rock Medical, and in the film Seducing Doctor Lewis as well as its recent remake, The Grand Seduction. The institutions where we work—Lakehead University and the Northern Ontario School of Medicine—have an explicit mission to serve places like Geraldton. In this paper, we advance the view that medical education has to be place-based—it has to be for somewhere—and this place-based pedagogical intention has the potential to impact physician recruitment and retention, as well as the well-being of people in remote communities.
and isolated communities.

**Place in medical education**

Health has been defined in many ways including an absence of infirmity and disease as well as a state of well-being (World Health Organisation, 2006). It can be measured in many ways including in terms of personal satisfaction, longevity, or the prevalence of morbidity and mortality arising from various diseases. Whatever one’s understanding of health it is clear that there is a large variation in health between populations for varied lifestyle, social, economic and biological reasons, the so-called determinants of health (World Health Organisation, 2011). This variance led to the emergence of the concept of health inequity, defined as differences in health that are unnecessary, avoidable, unfair or unjust (Whitehead, 1992). The reduction of health inequity has been deemed a major priority by such bodies as the World Health Organisation (1978) as described in the organisation’s Health for All initiative made in response to the so-called Declaration of Alma-Ata which states “the need for urgent action by all governments, all health and development workers, and the world community to protect and promote the health of all the people of the world”. Indeed, the Global Forum for Health Research (1999), a partner of the World Health Organisation, stated in their 10/90 report on health research, which directly addressed health care deficiencies, that: “Good health is a way out of poverty. It results in a greater sense of well-being and contributes to increased social and economic productivity. The impact of ill health on productivity affects not only the poor, but societies and economies as well” (Global Forum for Health Research, 1999, p. 23). This is particularly evident in rural areas of the world, with the declaration of the Second Rural Health Congress in South Africa concluding “since the great majority of poor people of the world live in rural areas, we pledge ourselves to this global initiative to achieve health for all rural people by the year 2020” (WONCA, 2001, p. 17).

Health inequity can be related to many factors including socioeconomic status, ethnicity and age, but also to geography (country or region within a country). Where one lives is a major determinant of health. Although insufficient physical infrastructure is sometimes evident in some locations, the most important factor influencing the impact of place on health is the availability of competent healthcare practitioners (Strasser, 2003). Given that the supply of physicians, and other health practitioners is a modifiable factor, a significant effort is being put into increasing physician supply to so-called ‘underserviced’ populations as a means to decrease health inequity. The fact that such populations are predominantly defined by where they are located means that such supply issues are inextricably linked to place.

Although the role of place in health has been extensively studied, discussed and written about in journals such as Health and Place, the role played by professional medical education has not been given much attention. Historically, this is partly due to the Flexner Report of 1910 in which he advocated for changes he believed would result in doctors better prepared to address the health-care needs of society. This included requiring all medical schools in the US to incorporate a two year classroom based training in the sciences followed by a ‘clerkship’ taking place in a teaching hospital allied to the medical school. This occurred in response to medical schools of that time having variable quality and programs and was a largely successful attempt to standardise medical education (Flexner, 1910). A consequence, however, was that students had little experience of what medical practice was like outside of the university and the large urban hospital and, not surprisingly, had little interest in practicing in different settings. Moreover, standardization, although certainly increasing overall educational quality in teaching the core disciplines of medicine, has the effect of making training more homogenous in that it minimises the significance of local diversity and needs. Indeed, the Flexner Report followed the logic that standardizing high quality medical education would ensure high quality physicians, and that society would benefit. This logic continues to dominate how medical education is delivered on a worldwide scale. Moreover, while the connection between medical education and the improved health of society is implicitly made by Flexner; as has been pointed out frequently by advocates of socially accountable medical education, the connection between good education and good health outcomes is neither guaranteed, nor even likely in certain situations (Boelen, 2004). In essence, efforts to produce high quality physicians alone do not assure suitable or adequate health-care outcomes for all. Put simply, the assumption that good education of health professionals ultimately leads to good health of society is based on faulty logic (Boelen, 2004). Moreover, the unintended consequences of the Flexner Report may have been to isolate the institution of medical education from the living environment of patients (Boelen and Woollard, 2009). As a result, the Flexner Report led to the creation of standards, evaluation methods and measurement tools in support of producing clinically proficient physicians who did not understand the importance of practice context; in other words, they do not understand the health needs of communities. Critiquing Flexner, and in support of social accountability, Charles Boelen has said: “People’s health
needs need to be taken as a starting, and not as an end point” (Boelen, 2002, p. 593). As such, although not explicitly stated, a purely Flexnerian organisation of medical education has a very narrow conception of place implicitly embedded in it - the large hospital in the urban centre - a focus which may well cause it to perpetuate health inequities. Indeed, the expectation of homogeneity of learning experiences via a ‘tick box’ of clinical interactions set in similar settings could be viewed as being inherently anti-place being unresponsive to the situated nature of living in specific places. Moreover, a noted consequence of the Flexner tradition of medical education is the challenge of accessing medical education, and for some more than others. Competitive access, potentially biased, science-based admission standards, high costs, and an elitist association with medical schools have traditionally worked to restrict the possibility of pursuing medical school to the most affluent in society (Dhalla et al., 2002). A significant problem frequently identified with this reality is that the population demographics most needing accessible, relevant health care are not reflected in the training of health-care providers (Boelen, 2002).

The Flexner model has been challenged in recent years, due to a growing trend to treat patients in small community clinics rather than in large hospitals (Habbick and Leeder, 1996; Hays, 2007). Much of the driver for this change is that the patient base which medical students need to access as part of their education has increasingly been located outside of large hospitals in varied community settings, a trend which has been driven by a variety of factors including a desire to reduce healthcare costs and to enhance patient well-being (Hays, 2007). The gradual exodus of medical training from the large tertiary care hospitals has a long history. Early pioneers recognised that clinical training that takes place exclusively within the teaching hospital setting is inadequate to prepare the trainees for future practice. As discussed above, this is of particular importance to those locations that lack sufficient and qualified practitioners. Such a move from hospital to community for at least some of the clinical training had been instituted by a number of schools including Western Reserve University in the 1950s (Ham et al., 1962), with more programs being added over the next 3 decades (Gelhorn and Scheuer, 1978). Widespread adoption, however, has been slow. One of the first regulatory bodies to mandate a move out of the hospitals was the General Medical Council in the UK which put forth this recommendation, along with many others, in its report *Tomorrows Doctors* (General Medical Council, 1993). This change towards learning in the context of future practice has subsequently been promoted by other governing authorities including those in Canada and elsewhere (Health Canada, 2001; American Board of Internal Medicine Foundation et al., 2002; Frank et al., 1996; World Health Organisation, 1996). Whether these changes suggest any major shift in how medical students view their practice and its relation to place-based contexts, however, remains an open question.

Another movement in medical education is proving to be a major driver of change towards more place-contextualised programs: the movement for social accountability. The notion of social accountability means that the medical education program should directly aim to improve the health of the local community (Boelen and Heck, 1995; Boelen and Woollard, 2009; Global Health Education Consortium, 2010). It is formally described as “The obligation [of medical schools] to direct their education, research and service activities towards addressing the priority health concerns of the community, region, and or nation they have the mandate to serve. The priority health concerns are to be identified jointly by governments, healthcare organizations, health professionals, and the public” (Boelen and Heck, 1995, p. 3). The terms social accountability and social responsibility tend to be used interchangeably in the literature although they have been usefully defined and differentiated in the context of medical education by Boelen and Woollard (2011). Social accountability is at one end of a continuum of social action, with social responsibility being at the other, and social responsiveness being a half-way point (Boelen and Woollard, 2011). Specifically, social responsibility has been defined as social needs being described implicitly, institutional objectives being determined internally by faculty, programs being community-oriented but not necessarily based outside the school, medical graduates being good practitioners, and the program being evaluated in terms of processes with the ultimate assessors of success being internal. Social responsiveness goes further with social needs being explicitly described, curriculum being inspired by data and not just by the views of those inside the school, programs being community-based, and success being measured externally by means of achieved outcomes. Finally, social accountability anticipates societal needs, has programs which are not just community-located but fully contextualised, and is evaluated on actual impact on health and health care as determined by the broader community (Boelen and Woollard, 2011). The movement is fundamentally about change with both the graduates of the program etc. and the programs themselves being seen as transformative agents for the betterment of health and healthcare for all members of a particular community (Shor, 1980; Woolard, 2006; Gibbs, 2011; Larkins et al., 2011; Murray et al., 2012). Social accountability, therefore,
has embedded at its core the concept of community situated in a particular place; social accountability aims to decrease health inequity within that locality. This place-based movement presents a major challenge to the traditional Flexner model of medical education.

The need and benefits for the inclusion of place in medical education

One common sense rationale for ‘place-based’ medical training is that the competencies required to practice and live successfully differs from place to place and region to region depending on cultural and community context and other environmental factors (Nelson, 2008). In such a scheme, medical education becomes more than learning the knowledge and skills of medical practice in general, a way to practice medicine anywhere, but a contextualised experience which explicitly prepares the student to appreciate the significance of place and to practice medicine somewhere in particular. As such, the recruitment and retention of physicians for a particular place is benefitted by community-based training, especially when that training takes place in the future practice context. Specifically, the aim of such training is to create both a professional identity as a place-situated physician, such as a rural doctor, but also to create a specific cultural/geographic identity associated with where each program is located (Hanlon et al., 2010). In other words, such a program should aim to create a localised, place-specific professional identity. Such identity creation is key to having the students choose to practice in underserviced areas and to retain them in that location. In contrast, as in rural isolated communities like Geraldton, mentioned above, post-training economic incentives, while having some success in recruiting physicians to underserviced areas have not resulted in the longer-term commitment which is necessary for retention (Barer and Stoddart, 1999; Sempowski, 2004).

So what are the effects on medical education when training is moved from the hospital to the clinic? This has certainly been extensively studied from the point of view of developing a range of clinical skills. Training medical students in community settings has been suggested to have a number of pedagogical advantages over that located within the traditional teaching hospital. These include creating more appropriate knowledge, skills and attitudes relevant to the actual future practice context, deepening the understanding of health needs and services, creating a more patient-centred perspective, enhancing inter-professionalism (i.e. collaborative practice with other health professionals), broadening the range of learning opportunities available, spreading the teaching load over a larger number of teachers, developing cultural competency, and gaining an increased recognition of the social causes of illness (Habbick and Leeder, 1996; Hays, 2007). Moreover, students taught in community settings report that they spend less time waiting for teachers and teaching opportunities, while at the same time being taught by a small faculty group whom they get to know well (Johnston and Boohan, 2000). In the early years of training, students who engage in community experiences also become more confident in using their classroom gained clinical skills while developing greater empathy for their patients (Dornan et al., 2006). It is notable when reading such literature, however, the one aspect of the educational experience that is not considered is the actual community in which the placement takes place. While there is mention of patients in community, attitudes required to practice in that context (such as rural), and relationships with other professionals and hence the health care system in the community, these relate to professional activities and socialisation (Dornan et al., 2006). Such findings therefore concern themselves with one of the two aspects of identity identified as important for the development of a rural physician’s professional identity. The other aspect, geographic identity (Hanlon et al., 2010), has been largely ignored along with the knowledge, skills, relationships and attitudes required to live successfully in place as physicians. Given that in under-serviced areas, as has been discussed, the very goal of social accountability in medical education is to enhance the health of the community predominantly through increasing the recruitment and retention to certain areas; this may be viewed as something of a deficiency (Strasser and Neusy, 2010). Indeed, if one considers the taxonomy of Boelen and Woolard (2011), medical education devoid of an understanding of place may well be socially responsible, or even socially responsive, but without being fully contextualised, can it ever be socially accountable? A lack of research on the subject does not mean that the contextualisation does not occur, but it does suggest it forms part of the ‘hidden curriculum’ (Eisner, 1985) and is largely ignored by medical educators.

That is not to say that the topic has not been considered at all, particularly with regard to rural medical practice and education. For example, in a report on the development of the Northern Medical Program, a rural medical program situated at the University of Northern British Columbia in Prince George, the efforts of the physicians involved were suggested to be drawn from a high level of place-based social capital present in the geographic area of the program (Hanlon et al., 2010). A strong sense of community had formed in two ways, firstly within the profession, but also with the wider...
population and with the place itself. Such a physician group therefore provides a good example of the desired endpoint of the medical program itself; namely, physicians having a strong identity as rural practitioners situated within a particular place. The authors concluded, however, that this social network had formed under prolonged periods of adversity caused by a scarcity of healthcare resources, both funding and physical infrastructure, but chiefly a lack of healthcare workers (Hanlon et al., 2010). From an educational standpoint, it is unclear how, or even if, similar results can be achieved by other medical education programs. The example of the Northern Medical Program does, however, illustrate that professional identity building and socialisation in a generic manner is unlikely etc. to be sufficient to enhance rural recruitment and retention; there must also be a place-related component.

The Northern Ontario School of Medicine as an example of emphasising place in medical education

Within Canada (the country where we work and live), the idea of social accountability has been proposed as a guiding principle for Canadian medical schools (Health Canada, 2001) and is viewed as a key progressive driving force by those leading the development of medical education (Association of Faculties of Medicine of Canada, 2010). Along with a small number of other medical schools situated outside of Canada (Training for Health Equity Network, 2014), the Northern Ontario School of Medicine (NOSM) is recognised as being at the leading edge of this movement (Strasser et al., 2009). Opening its doors in 2005, NOSM is Canada’s newest medical school in over 35 years, and it is the first medical school in Canada to be established with an explicit social accountability mandate (Strasser et al., 2009). It is the medical school of two universities, Laurentian and Lakehead, both located in the Northern region of the province of Ontario, in Sudbury and Thunder Bay respectively—over 1000 kilometres apart. Northern Ontario is a vast region covering approximately 800,000 square kilometers. It is mostly sparsely populated and comprises two larger centres with populations in the 100,000 range, small rural towns, and remote, isolated and ‘fly in’ small communities, many of which are inhabited by mainly Aboriginal Canadians. The health of Northern Ontarians is generally worse than people in the rest of the province and in Canada as a whole, having a decreased life expectancy, increased infant mortality, and higher prevalence of mortality and morbidity resulting from of a variety of conditions and situations including diabetes, cardiovascular disease, addiction, mental illness suicide, and workplace accidents (Ministry of Health and Long Term Care, 2011). Moreover, compared to the average for the region, the health of Aboriginal and Francophone persons are, on most measures, worse that the regional average (Canadian Institute for Health Information, 2006). It is such statistics along with a ‘grassroots’ political movement arising from within Northern Ontario that convinced the provincial government that a medical school was required that specifically addressed the healthcare needs of the disparate peoples of the region with an aim of improving their health (Strasser and Lanphear, 2008). Indeed, the mandate of social accountability forms the ideological core of NOSM and is written into the Letters Patent, which provides the legal basis for the establishment of the school (Strasser and Lanphear, 2008). Put simply NOSM, as stated in its visioning statement, is about ‘Education and Research for a Healthier North,’ with a mission of ‘increasing the number of physicians and health professionals with the leadership, knowledge and skills to practice in Northern Ontario’ (Northern Ontario School of Medicine, 2010). These statements clearly articulate that the school aims to develop and deliver medical education for a particular locale, Northern Ontario, and that, by implication, social accountability is closely, and perhaps inextricably, linked with responsiveness to place.

Once founded, NOSM’s purpose has been focused on achieving its deceptively simple aim of better health for a region. The nature of the region in which the school is located naturally led to a focus on rurality; indeed, the originally proposed name for the institution was the Northern Rural Medical School (NORMS Liaison Council, 2000). The strategies employed by the school (summarised in Table 1) therefore fell in line with rural medical education in general, these being (i) to select students who have grown up and/or lived in a rural community, (ii) ensure learners have a positive educational experiences in rural communities during their undergraduate medical education, and (iii) receive clinical training in rural communities during their post-graduate training as residents. These general aims are only meaningful when considered in the context of place, in this case rural places, but are likely generalizable to other types of communities. NOSM addresses all three factors in its various programs (Tesson et al., 2009), these being Undergraduate Medical Education (UME), the MD degree program, and Postgraduate Medical Education (the training of ‘residents’ in family medicine or one of many medical specialties and sub-specialties), Continuing Medical Education which includes professional development for existing physicians, and allied health professional training such as the Physician Assistant Program and the Dietetic Internship Program. As mentioned above, NOSM was founded with an explicit social accountability mandate


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<th>Element</th>
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<tr>
<td>Governance structures</td>
<td>The school is founded on an explicit social-accountability mandate, which dictates that the goal of the school is to enhance health for all the peoples of northern Ontario. The governance structures implement this mandate by including community representatives within its administrative and academic governance structures.</td>
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<tr>
<td>Community engagement</td>
<td>Regular community visits along with formalized processes for community feedback are key accountability mechanisms</td>
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<tr>
<td>Admissions</td>
<td>A demographic scoring system selects students who were raised and have family in the region or in rural locations elsewhere in Canada. This results in enrolment of students having existing desired place-identities.</td>
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<td>Orientation</td>
<td>At intake learners take part in a week long orientation during which they visit many of the communities which the school serves to demonstrate experientially the school’s mission.</td>
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<tr>
<td>Case Based Learning (CBL)</td>
<td>Place-contextualised case-based small group session concerning professionalism, population and social health, and northern and rural health occurring in years 1 and 2. The first CBL of each teaching module in year 2 involves a community exploration using statistical data available online.</td>
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<tr>
<td>Topic oriented session (TOS)</td>
<td>Place-contextualised problem-based small group session which examines a medical problem in a realistic community setting primarily aimed at learning about the medical sciences occurring in years 1 and 2.</td>
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<tr>
<td>Community and Interprofessional Learning (CIL)</td>
<td>A weekly afternoon community placement occurring during the first two years of the program taking place in both physician offices and in other settings related to healthcare. The aim is to allow students to the experience the continuum of the health care system.</td>
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<tr>
<td>Integrated community experience (ICE)</td>
<td>Month long placements occurring in years 1 and 2 during which students live and learn in Aboriginal or small rural communities. The regular academic curriculum, organised around body systems, continues uninterrupted but is supplemented by cultural and clinical learning blocks as well as the learners own explorations as temporary members of each community.</td>
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<tr>
<td>Comprehensive community clerkship (CCC)</td>
<td>A nine-month long placement taking place during year 3 in a small town setting during which students are assigned to a family medicine practice. In this context they learn about both primary care and the specialities. This is in contrast to the 'rotations' in teaching hospitals which comprise year 3 of most other medical programs.</td>
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<tr>
<td>Service learning</td>
<td>Predominantly student-initiated projects involving working with community agencies involved in providing services related to health. The student learns both about the community body but also how to go about forming and working in partnerships for the purposes of community betterment. Students are asked to reflect on the project and present a progress report to faculty advisors and to the community agency.</td>
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<tr>
<td>Northern and rural health assignment</td>
<td>In the first two years students write essays on various medical topic and competencies using a lens of healthcare as it occur in northern Ontario with the aim of developing place-contextualized medical knowledge complementing that obtained while engaged in placements.</td>
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Table 1. Place-related aspects of the NOSM MD program.
to serve the peoples of Northern Ontario. The importance and uniqueness of such an institutional underpinning cannot be over-emphasised, since such a mission mandated that medical education must be about meeting the needs of a particular place in terms of health. Furthermore, its mission contained within it an implicit democratization of the institution to include those outside of NOSM in decision making, to turn the institution’s focus outward rather than inward, and ultimately to transfer power from the established professional power structures to those in the wider community. In our opinion, this neither happened by decanal decree nor by a few senate motions, but was instead deliberately embedded within the school’s entire governance and decision-making structures.

Like most university-level educational institutions, NOSM employs a ‘bicameral’ governance structure with academic and administrative arms led by the university senates and the NOSM board of directors respectively. Both the faculty council of NOSM and its board seeks to represent and embody the views of the ethnic, cultural, linguistic and geographic diversity of the region. For example, NOSM has a requirement to have both Aboriginal and Francophone academics amongst its members and to represent the wide breadth of constituencies which make up Northern Ontario. Additionally, the Board, via the Dean, convenes a regular series of formal meetings with citizen-staffed groups including the Aboriginal and Francophones reference groups which are populated by members of these minority communities who hold leadership positions. As such, the desires of the community are both articulated in the mission and given voice within the governance of NOSM, thereby ensuring that resources are allocated in an appropriate manner and programs focus on community need rather than that of those within NOSM’s boardrooms and classrooms.

From these place-responsive foundations the operational aspects of the school were articulated in a manner consistent with the school’s mission. The student selection process utilises the ‘Multiple Mini Interview’, argued to be a more equitable means to assess incoming students from a variety of cultural and socio-economic backgrounds (Moreau et al., 2006), uses interviewers and reviewers drawn from within the communities served while demographic weighting heavily favours learners who have grown up in Northern Ontario and whose immediate family also lives close by (Northern Ontario School of Medicine, 2013). These attributes are thought to enhance the prospects of graduates staying to practice medicine in the served area. Those accepting offers of admission then take part in an orientation week that occurs in small communities throughout the region as well as the main campuses in Thunder Bay in Sudbury. This is done to demonstrate experientially that the mission of the school lies in places outside the classroom, but also to solidify partnerships with the communities that are essential to delivering the teaching model, with both admissions and orientation being part of a continuous process of community engagement. Indeed, without such engagement the goal of the school to have learners move through a holistic progression of place-contextualised educational experiences would not be possible.

Traditionally the first two years of undergraduate medical education are spent in classroom learning and this is partially true of NOSM. However, even when in the classroom the use of problem- and case-based learning allows the use of ‘paper’ scenarios set in Northern communities with characters typical of those to be found therein. In addition, various parts of the pro-grams are spent in community settings around the region. The first of these, Community and Inter-professional Learning (CIL), begins in the first few weeks of year 1. Occurring one afternoon per week, students learn in a variety of healthcare-related settings in the community organised around themes such as mental health or children’s health. This includes visits to physicians’ offices, social and health-related community-based agencies, and political and advocacy groups. Through CIL, students become familiar with the healthcare system in the region, understand what happens to patients when they leave the doctor’s office, and are encouraged to reflect on how the various competencies required by a physician are utilised to work with members of the wider community to provide optimal patient care. Furthermore, students have the opportunity from the beginning of their medical education to build the relationships and support networks essential to working effectively and sustainably in the wider regional healthcare system (Hanlon et al., 2011).

Also within the first two years of the MD program all NOSM learners take part in three off-campus community placements, which last four weeks each. The number of communities taking part in these placements numbers over 90 and the school commits significant resources to building the partnerships required to successfully implement such a highly distributed program. The first of the three placements takes place at the end of first year and is located in an Aboriginal community. The communities are located across the region and range from those within towns and cities to extremely remote ‘fly in’ communities. The primary objective of the placement is one of a cultural familiarisation and dialogue that aims to teach, extend and reinforce knowledge about the history, geography, culture, beliefs and underlying epistemology of the community. This is accomplished by inviting the
community to schedule cultural events and interactions for students, rather than arranging them from within the institution. In this way each community determines what it is learners need to learn and necessarily results in rather different experiences for each learner. From a medical education perspective, the placement gives learners an appreciation of what life is like for those who live in these places with a view to understanding the factors which determine community health, as well as to develop the skills required to be effective providers of healthcare in such contexts and, it is hoped, the desire to practice in such places. In addition, students can also gain knowledge of traditional medical practices about which they may have limited or no experience of, and that are largely absent from within medical education curricula—but which may be important practices in the lives of many of their future patients. In the second year of the MD program, there are two off-campus placements that take place in small communities situated outside the main centres of Thunder Bay and Sudbury. These placements are mainly concerned with providing students with clinical experiences that help learners discern the nature of small town and rural medical practice under the tutelage of teachers who embody the mission of the school. It is hoped that these early clinical experiences in a small town settings will assist in the development of the cognitive, contative and affective attributes necessary for medical students to later return to alleviate the physician shortage in these underserviced communities. It is not by accident that the first taste of actual clinical work that learners have is in the type of community that it is desired that they subsequently work in; this is part of the process of identity formation. Indeed, medical students are not located in large tertiary-care teaching hospitals until the final stage of their education, the fourth year, with the intent that the students see rural practice as normal and large hospital practice as the alternative. This is the opposite of what the traditional Flexnerian model dictates. The second year placements are built upon in the program’s third year during which learners are placed in a family physicians’ office located in a smaller rural town. Such a placement is not unique to NOSM, having been pioneered by Flinders University in Australia (Worley et al., 2006), although at NOSM it is not an optional stream for interested students, but rather a compulsory component of the course. The nine month longitudinal experience, termed the comprehensive community clerkship (CCC), is a means to teach students how to be effective physicians in a rural context. This offers advantages over traditional rotations. The CCC, while set in a primary care setting, is actually a means to learn about the medical specialities such as psychiatry and obstetrics as per the traditional discipline-focussed rotations, but which offers benefits to learners such as getting to know their teachers well, meeting patients multiple times as time progresses, establishing a continuity of care, and seeing themselves as part of the team—the latter also being an important part of identity formation. In short, NOSM provides an example of medical education that infuses place-consciousness and social accountability into its foundational structures and processes.

**Place-based education as a wider educational movement**

What is occurring in medical education can be viewed as part of a wider educational movement concerning place. Experiences with place in the broader field of education (Gruenewald, 2003a, 2003b) may well be applicable to medical education and helpful as the medical schools struggle to change a century old tradition of “placelessness” (Relph, 1976) in their educational practices using what is, for them, a new ideological framework involving unfamiliar teaching methods. For example, medicine is not the only profession that seeks to prepare its practitioners for work in rural isolated communities. Teacher education, specifically, indigenous teacher education, may provide a helpful model, as this field has for decades attempted to describe and practice pedagogies that would prepare culturally-responsive teachers ready to work with Indigenous learners and communities. The Guidelines for Preparing Culturally Responsive Teachers for Alaska’s Schools is one resource guide that has influenced not only the literature of place-based education, but that has also been adopted by the State of Alaska (and other states) as part of the accountability framework for all of its teachers (Barnhardt, 2008). These comprehensive guidelines include standards for philosophy, learning theory, diversity, content, instruction and assessment, learning environments, family and community involvement, and professional growth. To provide a relevant example, teachers need to demonstrate that they can ‘engage in extended experiences that involve the development of observation and listening skills associated with the traditional learning ways of native people’ and ‘understand the significance of the role of cultural identity in providing a strong foundation for all social, emotional, intellectual and spiritual development and demonstrate the ability to build on that understanding in their teaching’ among a long list of outcomes associated with culturally responsive teaching (Alaska Native Knowledge Network, 2014). The power of such guidelines is that they legitimize immersive experiences in culture and place as an essential component of
professional training. While such place-conscious teacher education models could benefit the further development of place-conscious medical training, the emergence of social accountability models in medical education potentially offers a powerful challenge to all fields of professional training to become more place-based. In the remainder of this section we will explore aspects of place-conscious theory and practice from a broader literature and consider its relevance to medical education for somewhere.

One’s relationship with place has been termed a ‘sense of place’ (Jorgensen and Stedman, 2001), comprising an important part of personal identity and having cognitive, affective and contative components (Canter, 1991). Anthropologists Feld and Basso (1996) prefer the plural “senses” of place to signify the diversity of the person-place relationship, and Basso (1996) proposes the transitive construction of “sensing” places, emphasizing that developing sense(s) of place is an active and changing process. Sense of place has been described in a variety of ways including rootedness, attachment, topophilia, insideness and place identity (Altman and Low, 1992; Proshansky et al., 1983; Relph, 1976; Rowles, 1983; Tuan, 1974, 1977, 1980; Twigger-Ross and Uzzell, 1996). Some degree of relatedness between ways of describing relationships to place is likely although, in the opinion of some authors, this is rather poorly understood (Kaltenborn, 1998). Quantitative studies using instruments designed to measure different aspects of a sense of place suggest the usefulness of delineating place relationships into subcategories as an aid to analysis (Jorgensen and Stedman, 2001, 2006). One such schema separates the sense of place into three components: identity, attachment and dependence (Bonnes and Secchiarioli, 1995; Jorgensen and Stedman, 2006), key themes in NOSM’s goal of enhancing recruitment and retention. Place identity is symbolic (Harmon et al., 2005) and involves “personal identity in relation to the physical environment by means of a complex pattern of conscious and unconscious ideas, beliefs, preferences, feelings, values, goals and behavioural tendencies and skill relevant to this environment” (Proshansky, 1978, p. 155). Place attachment, on the other hand, is an affective relationship which describes the positive bond between the person and place which can go beyond cognition and preference (Kyle et al., 2003; Riley, 1992). This can involve functional and emotional attachment to a particular place (Williams and Vaske, 2003), and can involve more than the environmental habitat, but also socio-cultural factors involving the history, culture and language of a place (Stokowski, 2002). Finally, place dependence (Stokols and Shumaker, 1981) has been defined as “the opportunities a setting provides for goal and activity needs” (Harmon et al., 2005, p. 149), the strength of dependence being assessed by comparison to other places. Put another way, place dependence concerns “the importance of a place in providing features and conditions that support specific goals or desired activities” (Williams and Vaske, 2003, p. 831).

Applied to medical education, we would argue that the ideal sense of place outcome from involvement in a socially accountable medical education program is a physician situated in a particular place (place identity), who possesses a strong emotional bond to that locale (place attachment), and who views that location as the best place to obtain medical training and in which to base a future practice of medicine (place dependence). In terms of identity, such place-based descriptions subsume both the geographic and cultural, two of the many forms of identity (Fearon, 1999), with the overall place sense incorporating both personal and professional aspects. Such an outcome may form a useful basis for analysing students’ experiences of discrete curriculum elements to determine the impact of the activity on achieving this particular sense of place. While it is presently unclear as to what the essential features of a place-based medical education should be, it seems likely that it would be advantageous for a program to be deliberate in including appropriate place experiences. This may involve more than simply providing medical training in a particular community setting, or teaching place-situated living skills, but rather requires a place-focused conceptual framework for education.

In two widely cited theoretical articles on place-based education, Gruenewald (2003a, 2003b) proposes an educational framework called a ‘critical pedagogy of place’ and outlines ‘dimensions of a place-conscious education’. Gruenewald’s (2003a) critical pedagogy of place has two major goals: re-inhabitation and decolonization. Briefly, re-inhabitation means learning to live well with others in a particular place, and decolonization means healing from or ‘undoing’ social injustice and ecological harm. It is easy to map these broad educational aims onto a medical education model for social accountability, which likewise aims to redress (i.e., decolonize) historical inequalities in health and health care. Gruenewald (2003b) also argues that there are several distinct dimensions of place, which constitute the foundations of a place-conscious education: the perceptual, the sociological, the political, the ideological, and the ecological. Unlike much of the “sense of place” literature, these dimensions of place explicitly seek to name how sociological or political experience, such as privilege or marginalization, impact one’s relationship to place and its inhabitants. Again, this seems especially relevant to a medical education program that seeks to recruit and
retain what is considered a privileged class of professionals (i.e., physicians), to work with an economically, culturally, and environmentally challenged rural populations in rural, isolated, largely Aboriginal, communities.

In the general education context, both in schools and universities, place-based, place-conscious, and place-responsive education have in the last two decades become a vibrant, if marginalized, movement in education reform (Barnhardt, 2005; Greenwood, 2013; Gruenewald and Smith, 2008; Smith and Sobel, 2010). As at NOSM, one of the challenges facing place-based educators generally is the challenge of aligning the goals of place-consciousness with the entrenched accountability systems that govern particular disciplines and are focused on specific achievement outcomes within these disciplines. Re-inhabitation and decolonization, for example, may be noble educational goals, but these are difficult to assess in accountability systems not designed to measure them. Gruenewald (2005) argued that if place-based education is to become a more significant part of the general educational curriculum, new accountability structures will be needed that embrace place-consciousness and what it can achieve as key educational outcomes. In this regard, the social accountability model current in medical education may help to problematize accountability systems in education that do not currently factor community well-being into their practices. This is particularly relevant to medical education which is highly regulated and governed through the requirement to adhere to a long list of accreditation standards (Liaison Committee on Medical Education, 2013). These standards do not currently incorporate ideas of social accountability and place into them and can actually be viewed as working against such objectives. The need for students to have similar experiences across different placement sites, for example, articulates the philosophy of placelessness educational homogeneity that is at odds with social accountability. The Liaison Committee for Medical Education (the North American medical education accreditation body) Standard ED-8 states “The curriculum of a medical education program must include comparable educational experiences and equivalent methods of assessment across all instructional sites within a given discipline” (Liaison Committee on Medical Education, 2013). Although such requirements can be seen to be met by agreeing on the same educational outcomes that the placement desires to achieve (Liaison Committee on Medical Education, 2013), the aim of the standard appears to be to ‘work around’ place differences that have been imposed on a Flexnerian model of education, rather than to embrace them as a necessary part of socially accountable medical training. Indeed, if fully place-contextualised socially accountable medical training is to be attained, the ideological underpinnings expressed in such language need to be radically altered. Such thinking can also be applied to the national licensing exams for Canadian physicians, which does not currently assess the role of place in medicine at all, thereby creating a degree of tension with the governing authorities and the frequent questioning, particularly by students, of whether topics like northern health or rural health are really of importance.

Thankfully, the tide is changing as we described in the opening sections, with the Canadian Faculties of Medical Education determining that aligning medical education to community needs is, as the report is called, ‘the future of medical education in Canada’ giving hope that the accreditation standard and licensing exams will eventually support rather than be indifferent to, or even hinder, what the NOSM and similar medical schools are trying to achieve (Association of Faculties of Medicine of Canada, 2010). In general, therefore, the social accountability movement in medicine is at the vanguard of rethinking the purpose and outcome of professional education in a way that is responsive to place.

**Issue and implications for place-conscious medical education**

As anthropologist Clifford Geertz (1996) commented, ‘No one lives in the world in general’ (p. 259). One could argue that place-consciousness is unimportant in medical education (and other professions) since one never knows where one will wind up practicing. Yet the point of experientially rich and sustained experiences with place is not only for students to learn about and connect with a particular place, but also to learn about the importance of place-connection for themselves, and their future patients, wherever their future practice leads. That is, place-based education does not equate with a limited applicability of learning and lesser ability to practice if the graduate decides to practice elsewhere. Instead place-based education includes within it the attainment of transferable knowledge of how place affects what we do and how we do it, including the practice of medicine (Smith and Sobel, 2004). In other words, place-based medical education contains within it a skill: that of being able to discern the role of place and to adapt to different contexts. In this sense, education for *somewhere* is also education for *anywhere*, and we argue that the converse of this, because of its inherent placelessness, cannot be true. To be clear, we propose that embracing place in medical education is not only better for the communities
in which the learners will practice due to it assisting with recruitment and retention, but that this philosophy of medical education results in better trained graduates who will be more effective doctors in any context because of their awareness of the role place plays in medicine. The fact that NOSM graduates are highly sought after by post-graduate residency programs (for example see Northern Ontario School of Medicine, 2012) suggests that those outside of the school may share this viewpoint.

Place-conscious medical curricula

To conclude, we briefly discuss a curriculum framework for place-conscious medical education that is responsive to the needs of place and community. The place-based education and related educational literature describes many curricular practices that would be appropriate for such a program, including placements, service learning, and so forth. However, building place into medical education requires a holistic approach that integrates place and community into the curriculum. Medical education curricula are traditionally informed by a variety of sources including accreditation standards, learning objectives defined by licensing bodies, and the interests of the medical school’s leadership and teaching faculty. Social accountability adds another facet to the curriculum; in this model the needs of the communities served by the medical school become central to the curricular goals and are informed by the public, governments, health care organisations and health care professionals (Boelen, 2002). As we have argued, bringing place into a system of medical education, which has been largely placeless in nature, can be achieved by embracing social accountability. What the curricula should contain in terms of outcomes, objectives, activities and accountability structures is much less clear. We will therefore offer some general comments, guidance towards establishing place-based medical curricula, and finally give some suggestions as to the activities that could be engaged in.

In general, designers of place-based medical curricula must investigate how particular places or types of places intersect with both the practice of medicine and the lives of medical practitioners. This should be done with the aim of developing the professional and place identities described by Hanlon et al. (2010), as well as place-attachment and dependence. The learning of place-specific clinical skills (as opposed to the generic placeless medicine currently favoured) is of great importance given that it is recognized that the required competencies of, for example, a rural doctor are not the same as those practicing in other contexts. For example, generalism and interprofessionalism are thought to be of much greater importance for small town practice that they are for those working in large urban centres (Strasser, 2003). Such place-specific skills are indeed key to successful and sustained rural practice described by Hancock et al. (2009). However as we have described above, and authors such as Hancock et al. (2009) emphasize, familiarity with place and community is also key. Specifically, many studies have shown that recruitment and retention into rural communities is highly dependent on the physician interacting successfully with the wider community, with factors such as appreciation for the service provided and support by the community, connection to place and a sense of belonging, physical and recreational assets, social networks, and overall familiarity with a place, being of importance (Cameron et al., 2012; Cutchin, 1997, 2000; Wade et al., 2007).

Similarly, a decision to leave a rural practice was found to be heavily influenced by community satisfaction as well as the amount of personal time available and the ability to meet professional goals (Pathman et al., 1998). In their developmental model of how physicians choose a practice location, Hancock and colleagues view familiarity with rural settings, followed by place integration both professionally and personally, and community participation, as key elements in whether or not a rural community is chosen (Hancock et al., 2009). However, since we know that recruitment and retention of doctors is dependent upon both the quality of their personal life and their community ties, as well as their medical practice, learning to live in place is as important as the gaining of the required clinical competencies.

What can be said with some certainty is that a medical learner who is confined to the inside of a particular office, clinic or hospital, is experiencing only a very limited and small part of that community, at most a subset of the healthcare professional community, and will gain little exposure to the wider place. The form of place-consciousness which results from such a program of education may therefore bear little resemblance to the desired outcome of a learner who is committed to a particular locale and who has the necessary skills, knowledge and attitudes to work and live effectively in that community, or in a community having similar attributes. As such, more is required in a medical curriculum than clinical training for a student to become successfully situated in a particular place as a physician; the learner must become a competent citizen as well as a competent physician. The latter may not be immediately obvious to medical educators given that one might suppose that learning to live in a place is something with which all learners already have experience. Indeed, at NOSM we give priority at the time of admission to students who live and were raised locally and it is often heard from them...
that they already know about the placement communities and that only clinical experiences are important to them (B. Ross, unpublished observations). Our relationships to places necessarily change, however, as our role in such a place changes, whether this be our transition from childhood to adulthood or from non-physician to physician, a process that has been well described (Canter, 1991). Specifically the medical learner needs to learn how to change their behaviour to suit their new role if they are to live contentedly in a particular context. This is particularly true of small town practice in which a physician’s patients are also their friends and neighbours. In this regard learners should also be exposed to situations in which they can learn about how physicians interact with non-physicians outside of medical practice, and the expectations of professional behaviour when participating in wider community life. The skepticism over the significance of wider community learning that is expressed by some medical learners is predicable considering that most of their previous educational experiences in schools and universities are largely decontextualized and placeless in both structure and process (Gruenewald, 2003a). Such skepticism or resistance also emphasizes the need to explicitly include, in both curriculum and assessment tools, learning objectives that address the non-clinical aspects of physician life rather than relegating such learning to the ‘hidden curriculum’ (Stern and Papadakis, 2006).

So how can this be accomplished? We suggest that the aims of the medical curriculum, and the curriculum itself need to be conceptualized in a way that recognizes the inseparability of a twin role for physicians in remote areas: the role of place-conscious clinician and place-conscious citizen (Figure 1). We further suggest that both roles can be constructively explored by drawing on existing frameworks for place-conscious education, such as Gruenewald’s critical pedagogy of place, which emphasizes perceptual, sociological, ideological, political, and ecological dimensions of place (2003a, 2003b). In terms of clinical roles, considering the influential CanMEDS (Frank et al., 1996) competencies (these being organized under the categories of medical scholar, advocate, communicator, manager, and collaborator), one could add such objectives as ‘describe how the sociology of a place influences being an effective communicator’, ‘apply knowledge of the history of a place to establish effective collaboration with other health providers’, or ‘use knowledge of the local physical environment to develop practices which reduced morbidity and mortality’. The use of such a framework, while resulting in place-specific knowledge being gained, can itself also be seen as skill in itself, giving students the learning scaffolds needed to explore the relationship between place(s) and medicine. Within clinical training, such objectives can be met using both contextualized problem-based learning in the classroom (cases set somewhere in particular with realistic descriptions of the healthcare system therein), and by experiential learning using a variety of placements taking place away from the main campus of the institution. The nature of curricula in each school will of course differ depending on the nature of the places within which they are located. We would argue that these details should be predominantly informed by the local knowledge already existing within clinical communities. This is unlikely to have been collated prior to the development of the program and so a sustained process of engagement must take place with local communities in order to make decisions about what the curriculum should contain. It should be noted that the appropriate community to be engaged regarding clinical education, while obviously including physicians and other health practitioners, should also, in our view, not be confined to ‘experts’ but also include those with local ‘expertise’ such as the users of the system (e.g. patients and caregivers) and also its governors and funders. Engagement is also vital for establishing the community-based learning sites which form the basis of place-based medical education with outreach to hospitals, clinics, offices as well as the allied health professions and social support agencies which form other vital parts of the healthcare system. Indeed, explicitly asking students to explore the links between the various system components to provide care (such as the CIL sessions which form part of the pre-clerkship years at NOSM) is of great use in allowing students to become familiar with the strengths and idiosyncrasies of the place-specific healthcare system they will enter.

The other strand of the curriculum, the education of place-conscious citizens capable of forming bonds with a place, also involves engagement with diverse communities, not just professional medical educators. This approach to teaching and learning differs from the traditional model of medical education which relies on professional bodies and institutional faculty and staff to determine curricular goals and outcomes, perhaps with a nod to student opinions. As such, a community engagement strategy necessarily requires a transfer of a degree of authority out of the institution, a process which may be resisted by existing power structures, and which makes the establishment of over-riding programs goals, such as social accountability (which inform institutional governance and operations) of such importance.

Although one may assume that such programmatic goals can only be met in community settings, familiarity with these places and communities can begin within the classroom in terms of providing the opportunity for
Community explorations using online sources, as well as extra-curricular activities such as meeting and learning from community leaders, for example Aboriginal Elders, and participating in cultural experiences on campus such as sweat lodges.

Community-based educational experiences, conducted under the supervision and guidance of a community-based member of the medical school's teaching faculty, may be as simple as a requirement to attend various social or cultural events in the community, or more structured activities involving facilitated relationships with community partners, as well as time and space for individual and collective inquiry, reflection, and meaning-making. Again, a ‘critical pedagogy of place’ (Gruenewald, 2003a) may be effectively used to design curricula that examines how culture, environment, politics and economics impact how people live in any particular community. These curriculum concepts may be woven into a variety of activities used in place-based education (Gruenewald, 2003b; Smith, 2002), such as service learning, various inquiry, advocacy, and outreach activities such as action research, youth mentorship, or partnering with or shadowing members of the placement community. Although such experiences can have a narrow medical focus, such as investigating and attempting to modify the various determinants of health in the community, wider engagement activities such as sports coaching are also appropriate. Indeed, such approaches can be used to promote the wider health of places, in terms of environmental health for example, over and above that which can be achieved through effective clinical practice. Medical learners can be encouraged by these curricular concepts to discover the complexities of the interactions between people and places, which at least partially determine the health of the individual, the human community, and the place itself. Importantly, the establishment of friendships between learners, or between learners and existing physicians, should also be

**Figure 1.** Curriculum framework for place-based medical education showing the combination of place-based critical pedagogy and the conceptualization of the physician as a clinician and citizen to generate curriculum objectives. An example is given for each of the resultant six curricular domains.
a valued component of the program in terms of building support networks and the 'social capital' described by Harmon et al. (2005), thereby requiring schools to consider the need to allow time for social interactions to actually take place. The clear articulation of the ‘citizen’ role of the program is vital and should not be aimed only at learners, but also the community clinical teachers who may otherwise choose to schedule all available time for clinical teaching believing that this is their only role as mentors (Dyrbye et al., 2009). This may be achieved by means of faculty development, the co-development (between teacher and student) of learning contracts which clearly define the expectations of the program as a whole and placements in particular, and classroom-based sessions occurring pre-placement. Such activities as these and those modeled at NOSM aim to inform students about community life and expected norms and behaviours for those who live and work there. Through clearly articulated requirements, students can be encouraged to participate in various community-situated activities during placement experiences, and the medical curriculum can, with appropriate community-based facilitators, help to debrief these place-based experiences to inform the education of both clinicians and citizens.

In summary, we have argued that to be truly responsive to communities, medical education must be rooted in place. By embracing place-based educational philosophies and practices, healthcare for somewhere can be achieved and with it, we earnestly hope improved health for those who inhabit that place and for the places themselves.

**Conflict of Interests**

The authors have not declared any conflict of interests.

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