Best Practices to Recruit **Mature Aboriginal Students** to Medicine

Indigenous Physicians Association of Canada | Association des Médecins Indigènes du Canada

AFMC

The Association of Faculties of Medicine of Canada

L'Association des facultés de médecine du Canada

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In light of the articulated need for increased Aboriginal physicians in Canada, an environmental scan of best practices to recruit mature Aboriginal students to medicine is timely. Given the limited research on Aboriginal students in medicine in general, in order to examine issues around mature Aboriginal recruitment other relevant areas have been investigated, including:

- Canadian undergraduate faculties of medicine
- University-based Aboriginal student services offices
- Aboriginal Studies and Aboriginal-specific academic programs (i.e., Aboriginal MSW programs)

The results reported herein result from four research approaches: surveys of Canadian undergraduate faculties of medicine; Web scans and surveys of Aboriginal student services and Aboriginal-specific academic programs at Canadian universities; and Web scans of undergraduate schools of medicine in Australia and New Zealand.

Introduction

In 2002 it was reported that Aboriginal students represented 0.8 per cent of all Year One medical students in Canada (18 Aboriginal students of 2020 total).[1] Given that Aboriginal people (First Nations, Inuit and Métis) comprise 3.3 per cent of the Canadian population,[2] the number of Aboriginal students in undergraduate schools of medicine is only one quarter of the total needed to be reflective of the overall population. While this demonstrates an extreme under-representation of Aboriginal People in medicine, it is also an identified factor of the current Aboriginal health crisis in Canada.

Multi-focused approaches have been suggested to address problems in Aboriginal health, including capacity building for Aboriginal health professionals in all areas of health care, especially physicians. Canadian medical schools have responded to the need for Aboriginal doctors through a variety of initiatives with varying success.

In many regards the push to increase the number of Aboriginal physicians is also part of a concerted effort by government, schools and the Association of Faculties of Medicine of Canada (AFMC) and the Indigenous Physicians Association of Canada (IPAC) to increase physician human resources throughout Canada. Within this strategy Aboriginal needs are most often identified with rural and northern initiatives. Dr. James Rourke has described the overall strategy as part of social accountability/responsibility, wherein 'medical schools can make the greatest contribution to the health and well-being of humanity.'[3]

A major challenge of this research is finding common ground in the **use of the term "mature"**. When 'mature students' are discussed in other undergraduate programs, it is typically in reference to students who have been out of high school for five years or more or students who have 'stopped out' of post secondary studies for three years or more. Some students with a shorter gap in their education may be included in the group for a variety of reasons, especially if they have dependent children.

When talking about post secondary students, these definitions actually describe the 'typical' Aboriginal student. For example, the Native Nurses Entry Program at Lakehead University had noted that only five per cent of their students are not classified as "mature".[4] Roughly 50-60 per cent of all Aboriginal college and university students in their first program of study are single mothers between the ages of 25-30. In this, the majority of Aboriginal students fit into the additional

1 A. Spencer, T. Young, S. Williams, D. Yan and S. Horsfall, "Survey on Aboriginal issues within Canadian medical programmes", Medical Education 2005:39: 1103.

2 Statistics Canada. 2001 Census Aboriginal People Profile. Ottawa: Statistics Canada 2001. as referenced by Spencer, et al., 2005:1101.

3 James Rourke, "Social Accountability in Theory and Practice," Annals of Family Medicine, www.annfammed.org, vol. 4, Supplement 1, September/October 2006: 548.

4 Survey response, March 2007.

category of "mature" which is identified as a group at risk for marginalization within post secondary studies.

The standard definitions of "mature" students are less relevant when looking at Canadian medical schools and other professional, post-baccalaureate programs of study as students in those programs are older due to the need for a bachelor's degree upon admission. Additionally, in the case of professional studies, "mature" is sometimes used to describe individuals, regardless of age, who have worked in the field but are seeking to upgrade their credentials (i.e., a nurse who wants to become a doctor). From a statistical standpoint it is very difficult to track students who fit into this category.

Because of the ambiguities around the term "mature", in the survey component of this research 'mature medical students' have been described as those over the age of 30 and/or those who have experienced significant gaps in their education. In surveys of other undergraduate programs, the institutions were asked to respond using their own definitions of the term and to provide that definition.

It should be noted that based upon the researcher's personal knowledge[5], Aboriginal medical students are less likely to be "mature"—in the typical use of the term—than their Aboriginal counterparts in other programs of study (at all levels of post secondary study). In other words, they are more likely than Aboriginal students in other fields of study to have gone directly from high school to university and then to medical school with no more than two years between any part of their education. However, many Aboriginal medical students do fit the typical definition of "mature".

5 This is based upon the researcher's [Consultant Dr. Susan M. Hill] previous career in Native student services/recruitment and personal acquaintances with Indigenous physicians in Canada and the United States.

Methods

This research employs a mixed-method approach to determine best practices in mature Aboriginal student recruitment to medicine. These include a literature review, qualitative survey research (along with statistical questions) and Web scans of relevant programs and universities.

First, a review of related literature was conducted. Previous Web research (from 2004) by an intern with AFMC was used as a starting point. Additional literature was located and reviewed. Articles most relevant to this research are discussed in the next section.

Second, Web scans were conducted of all identified Aboriginal student services programs and select Aboriginal-specific academic programs at Canadian universities. The Websites were examined for initiatives and efforts towards the recruitment and retention of Aboriginal students in general and mature Aboriginal students in specific. Analysis considers how these initiatives may be applicable to medical school recruitment and retention of mature Aboriginal students.

Third, three separate but related surveys were designed and disseminated electronically to undergraduate schools of medicine, selected Aboriginal student services programs and selected Aboriginal-specific academic programs at Canadian universities (respectively). Aggregate and anecdotal analysis was used to interpret the responses.

Fourth, Web scans were also conducted of undergraduate schools of medicine in Australia and New Zealand. These Websites were examined to identify recruitment and retention initiatives targeting Aboriginal students in general and mature Aboriginal students in specific. The potential for replication by Canadian undergraduate schools of medicine are considered.

Literature Review

No published literature exists specific to the recruitment of mature Aboriginal students to medicine. One article was found pertaining to Aboriginal issues within Canadian medical schools, and it has provided important benchmarks for the analysis of survey responses in this research. Other articles were identified related to the recruitment and retention of Aboriginal students in Canadian post-secondary institutions, the development of new medical schools in Canada and Australia with a commitment to serving Aboriginal communities, and government and institutional approaches to responding to the health needs of Aboriginal people and communities in Canada and Australia.

Of direct relevance to this research is a study published in 2005 based on a survey of all Canadian undergraduate schools of medicine in regards to Aboriginal issues within Canadian medical programs. Spencer, et.al. found that the increased number of Aboriginal medical students was directly connected to the overall increase in medical school admissions and did not constitute a relative increase in Aboriginal students versus non-Aboriginal students. They called for ongoing evaluation of Aboriginal recruitment and retention initiatives as well as clear explanations for how Aboriginal students are identified by institutions. They drew connections between a greater number of Aboriginal physicians and improved Aboriginal health and called for both increased Aboriginal student recruitment and retention efforts coupled with relevant education regarding Aboriginal health issues for all medical students.

Canadian governments, including provincial policy makers, have responded to the calls for increased Aboriginal health professionals. **The British Columbia Ministry of Education, Universities and Research Branch conducted an environmental scan of Aboriginal health human resources initiatives in 2004.** The research was in response to the announcement of funding for Aboriginal health human resources initiatives, looking specifically at the training of Aboriginal people in health professions, adaptation of curriculum to address cultural differences and improving the retention of health care providers serving Aboriginal communities. They noted problems experienced by Aboriginal youth in secondary school education that contributes to a lower number of potential health profession students. They noted problems with data accuracy related to Aboriginal self-identification. Within British Columbia they found 19 scholarships, bursaries and awards related to Aboriginal post-secondary health study. They also mentioned an increase in funding to improve access and enhance program content in post-secondary health education programs. They also reviewed initiatives in other western provinces, which are incorporated later in the discussion section of this report.

The University Presidents' Council of British Columbia (2003) reported on provincial medical school expansion since 2001. UBC, UNBC and the University of Victoria partnered to respond to the fact that BC was educating fewer doctors per capita than any other Canadian province. They seek

to double the number of medical graduates through the expansion of medical education beyond the Lower Mainland, specifically into the north (Prince George) and Vancouver Island (Victoria). The expansion includes residency opportunities throughout the province. It is believed that the geographic diversification will lead to increased physicians in currently underserved areas of the province. They also noted the importance of e-learning in the educational expansion.

Joseph (n.d.) has outlined a proposed **Aboriginal Health Pathway for the Division of Aboriginal People's Health on behalf of the Department of Family Practice, Faculty of Medicine, University of British Columbia.**[6] The report suggests a model for the health pathway, including faculty/student awareness campaign, K-8 community based science program & resources, a one-week summer science program, and a six-week residential college preparatory program. Various admissions related initiatives were also reviewed including a pre-admissions program, reserved seats for Aboriginal students, an Aboriginal Admissions Committee with at least one member sitting on the general Admissions Committee, adjustments to admissions criteria and the coordinated scheduling of Aboriginal interviews. Joseph also suggests a six-week preparatory program for incoming students with coursework in histology, study skills and mastering medical school. She calls for the Aboriginal Health Pathway to be modeled after the University of Washington Indian Health Pathway (see Best and Promising Practices). In the discussion of residency, Joseph notes the need to consider Aboriginal communities outside of the rural category, an area all too often overlooked. Aboriginal faculty development was also noted as a key concern. Finally, Joseph made recommendations for program faculty and staff including: a traditional healer, a director of Aboriginal ancestry with extensive experience in BC Aboriginal communities, a coordinator of student services committed to the retention of Aboriginal students and a learning centre/library open to both Aboriginal medical students and all Aboriginal health sciences students.

The 2020 Vision Strategy Report 2004-2005 (2005) outlines the achievements and challenges of the Ontario initiative, created in 2004, to address the challenges of recruiting and retaining Aboriginal health professionals.[7] Of note is the increase of Aboriginal medical school admissions from 5 in 2004 to 18 in 2005, attributed to the opening of the Northern Ontario School of Medicine and additional first-year spaces at the University of Ottawa. The report notes several provincial initiatives

6 Karen Joseph, Aboriginal Health Pathway for the Division of Aboriginal People's Health on behalf of the Department of Family Practice, Faculty of Medicine, University of British Columbia.
7 www.grpseo.org. Accessed January 20, 2007.

related to increased Aboriginal health professional training including the creation of the Advisory Committee on Aboriginal Postsecondary Education (ACAPE) and AFMC's consideration of issues such as admissions, support of Aboriginal students, curriculum development and medical competencies focusing on Aboriginal health. The report also outlines the plans of the Pre-Med Working Group to develop and secure funding for preparatory programs, including a six week summer program and a one year program to improve students' preparation for medical school admissions.[8] The 2020 Vision Partnership Table calls for Aboriginal community engagement in all program planning and implementation. See Best and Promising Practices for further discussion.

Rourke (2002) chronicles **the effort and barriers in development of a Northern Ontario Rural Medical School (NORMS).**[9] Canada's growing shortage of physicians in rural and northern communities has led to government initiatives to educate, recruit, and retain more physicians for rural and northern practice, the primary goal of NORMS[10]. The curriculum will be patient-centred, clinical problem-based, and systems-organized, with a significant health determinant focus, and Aboriginal health content and context. The current status of this school is looked at in the Survey Results section.

Related to the development of Canada's newest medical school is the development of a new medical school in Australia in 2000. Hays (2002) speaks to the conditions of health of the Australian Aboriginal peoples and that of the Torres Strait Islander peoples, as compared to the general Australian population.[11] In an attempt to resolve health concerns while empowering the community, a new medical school has been created at James Cook University to prepare students to serve this community and importantly, to "play a constructive role in the improvement of the health of Aboriginal and Torres Strait Islander peoples"[12] in partnership with the residents. The Torres Strait region is a vast tropical locale which has a mixed culture of approximately 25 per cent of the country's Aboriginal peoples and various settler groups. Although not a major component within this paper, Hays does express his belief that history has created an expected outcome which is a lack of general health as a result of the destruction of community and culture caused by war, relocation and forced education. He states, "It is hardly surprising that people who were dispossessed of their land, culture, families, power and purpose became unhealthy".[13]

8 Since the 2005 report, the Native Students Health Science Office and the Indigenous Studies Program of McMaster University in partnership with the Vision 2020 Strategy Partnership Table has developed a Six Week Pre-med program scheduled for delivery at Six Nations Polytechnic beginning May 2007. The program is designed to help students to master the application process to medical school including the interview, whether an individual or MMI format, and develop strengths in self awareness, oral and written communications and critical thinking.

9 James Rourke (2002). "Building the new Northern Ontario rural medical school." Australian Journal of Rural Health, 10, 112-116.

10 NORMS is now referred to as the Northern Ontario School of Medicine (NOSM).

11 R. Hays (2002). "One approach to improving Indigenous health care through medical education." Australian Journal of Rural Health, 10, 285-287.

12 Ibid., p. 286.

13 Ibid., pp. 285-286.

The school accepts students who are willing to work within the mandate of serving within a community and not for a community, aimed at empowering the community and serving their distinct needs. This program also accepts a minimum of five Aboriginal students each year. An example of disempowerment offered in this article is the forced relocation of pregnant women to regional birthing centres as a means of reducing maternal and infant mortality. This lack of voice and complete disregard to family, community and culture caused women to deny services, thus allowing the system to blame the victim for maintaining and possibly creating their own conditions. Empowerment of the community is engrained within the medical school model with members of the community sitting on committees responsible for the management, curricular design and selection of students, staff and research. Further, Aboriginal staff members hold positions within the school responsible for teaching and mentoring. Finally, the community takes on the responsibility for housing a training component for all students, while the staff receives training via the School of Indigenous Australian Studies, which provides cultural and community awareness aimed at increasing individual and community success.

In "**Reducing unmet needs: A prevocational medical training program in public health medicine and primary health care in remote Australia**", Mak and Plant (2005) examine the region of Kimberly, in Western Australia, which experiences a significant gap between Aboriginal health and that of the general population.[14] The public health and remote areas of Australia have an underserved population. Although undergraduate recruitment and admissions works to draw from these areas, the prevocational medical training programs are not pulling students and workers into public health and general practice. Kimberly has an approximate population of 32,000 people in a 420 square kilometer region; half of the population (16,000) is Aboriginal. In this region healthcare is limited to clinic style medicine which is designed to function in crisis (sickness, vaccination, communicable disease) and is run by the government organization Kimberly Public Health Unit (KPHU). This is a difference from the urban settings' health care system which is not clinic style medicine, but rather run in private practice of numerous general practitioners and specialists. Kimberly's program has a highly successful recruitment method. It is completely by word of mouth and limited flier posting in key locations such as hospital staff rooms and institutional hallways.

14 D.B. Mak & A.J. Plant (2005). "Reducing unmet needs: A prevocational medical training program in public health medicine and primary health care in remote Australia." Australian Journal of Rural Health, 13, 183-190.

There is no paid advertising yet applicants apply from all across Australia. Of relevance to mature student issues, this program is based on adult learning principles including active involvement in their own education and curriculum design, experiential learning, relevance and importance of topics intended to ensure interest. Adult education should be task-centered and not content-centered. Students were responsible for their own learning journey and in ensuring that all required aspects of the program were met by the end of their stay. This was accomplished through gap analyses, journaling and interviews.

Web Scan Results

Aboriginal Student Services Programs and Aboriginal-specific Academic Programs
[Recommendations made by the author have been bolded by IPAC-AFMC.]

A Web search was conducted to identify Aboriginal/First Nations/Native[15] student services offices and programs at Canadian universities. A Web scan was then conducted of all identified Aboriginal student services offices and programs (Appendix A). Additionally, a Web search was conducted for Aboriginal-specific academic programs. Most of the identified Aboriginal-specific academic programs refer to Aboriginal student services pages for recruitment and retention information. Selected programs were identified for survey follow-up (Appendix B).

The Web search resulted in the identification of 36 Canadian universities offering Native/Aboriginal/First Nations student services or support programs. The on-line descriptions of these programs were analyzed to identify commonalties in service as well as unique programs with relevance to the recruitment of mature Aboriginal students to medicine.

Some universities have been providing specific Aboriginal student support programs for many years. These programs have become models of service often looked to by other schools more recently developing Aboriginal student services. As a result, one will find very similar approaches to meeting the needs of Aboriginal students, as these methods have proven successful for the recruitment, retention and graduation of Aboriginal students. However, due to the diversity of indigenous peoples as well as diversity within staff and program resources, actual service delivery and style varies regionally and from school to school. Also of note is the fact that most Aboriginal students are mature students, therefore, these programs have generally been designed with the mature student in mind. **With nearly all of the programs investigated, the following services/initiatives were common:**

- **dedicated space for Aboriginal services and students (i.e., Aboriginal resource centre, First Nations house);**
- **advocacy for Aboriginal students within the university;**
- **personal counselling;**
- **academic counselling;**
- **cultural counselling (often through visiting or resident Elders/Traditional Knowledge holders);**
- **financial assistance (bursaries, scholarships, financial aid application assistance, emergency loans);**

15 The titles 'Aboriginal', 'First Nations' and 'Native' come from the names of actual offices. Specific terms vary from campus to campus but generally these offices/programs serve all students of First Nations, Inuit and Métis heritage, regardless of office title.

- **study space;**
- **library resources collection; computer lab;**
- **mentoring programs;**
- **community resources;**
- **academic skills workshops; and coordination of tutorials (including on-line tutoring).**

As noted, these time-tested services have proven successful across Canada (and in other places with indigenous student populations) for undergraduate students. It is safe to assume that similar supports would contribute to the increased success of Aboriginal students in undergraduate medical programs in Canada. Given the relative small student population and related service resources, many medical schools have partnered with Aboriginal student services programs in other faculties of their universities to provide these services to Aboriginal medical students. Further development of those relationships will enhance the support provided to Aboriginal medical students. In addition, it would be useful for those medical programs at schools without Aboriginal student services to partner with programs designed to support mature students.

In the Web scan several additional unique approaches were also identified that could be utilized in the efforts to increase mature Aboriginal student recruitment to medicine. Seven Aboriginal student services programs (Alberta, Carleton, New Brunswick, Saskatchewan, Simon Frasier, Toronto and Winnipeg) either coordinated or participated in a transition year program designed to provide extra support to first year students who showed promise for success but whose previous learning experiences did not qualify them for regular admission to the university. These programs have proven very successful in transitioning at-risk students into their respective university environments, often with higher retention and graduation rates than students admitted under regular requirements. **Undergraduate schools of medicine could look at specific transition programs for Aboriginal medical students and/or develop a one-year premed school program to better prepare Aboriginal students for medical school studies**. Programs such as these are under consideration within the 2020 Vision Strategy and have been called for by Joseph in her report to UBC (both referenced in the literature review). A few medical schools in the United States host similar one-year programs at the post-baccalaureate level for students of under-represented populations (i.e., African Americans, Latino/as, and Native

Americans). For an example see Michigan State University's Advanced Baccalaureate Learning Experience Program which recruits 'disadvantaged' students for a 12-month preparatory program from their medical school application pool.[16]

The University of Alberta Aboriginal Student Centre sponsors a Student-Parent Support Group. Such an organization is extremely relevant to issues faced by many mature Aboriginal students. Additionally, many schools provide day care programs but there are often difficulties finding space. **If schools are to be successful in increasing the number of mature Aboriginal students in medicine, day care and other family supports will be critical to achieving that goal**.

The University of British Columbia and the University of New Brunswick both listed a First Nations library. The UBC First Nations House of Learning houses a stand-alone library with lending services available to the entire campus. The UNB collection is integrated into the regular library system. These collections (as well as those at other universities not specifically mentioned) focus on materials relevant to Indigenous studies courses and general curriculum related to Indigenous topics. **Medical schools should consider expanding their library holdings to provide additional materials relevant to Aboriginal health**. This will clearly benefit all students and faculty members and assist in raising the awareness of Aboriginal issues.

Many schools report community connections, but a few go further with Aboriginal community advisory councils. Several of these are Ontario universities who, as a pre-requisite for specific provincial funding, host Aboriginal Education Councils. These councils advise the presidents of their respective institutions about Aboriginal community needs and guide the development of partnerships (for examples, see McMaster's President's Council or the University of Western Ontario's Aboriginal Education and Employment Council). They are also a resource to the development of student services and initiatives. In addition, Simon Frasier University lists a First Nations Advisory Council, which guides the relationships between the university and local Aboriginal communities, with an emphasis on respect and autonomy. **For medical faculties that exist in institutions with Aboriginal advisory councils, it would be beneficial for the medical school to develop stronger connections to that council. For schools without such a council, the faculty of medicine could create their own Aboriginal community advisory group. The advisory group should be taken seriously in their**

16 http://mdadmissions.msu.edu/main/able.htm. Accessed March 12, 2007.

concerns and recommendations and not exist on a superficial level.

McGill University's First Peoples' House Web page articulates a commitment to the recruitment of Aboriginal faculty and staff. The University of Victoria highlights the presence of two Aboriginal faculty members within their law school. It is assumed that these institutions see a connection between the presence of Aboriginal employees and the recruitment and retention of Aboriginal students. Furthermore, it should be noted that it is important to encourage Aboriginal faculty and staff to work with and for Aboriginal students and student issues. That may mean that an Aboriginal faculty member with research interests outside of Aboriginal-specific areas still be included in Aboriginal planning (with appropriate service values credited for the extra work). **Medical schools that employ Aboriginal people are likely to see an increase in their recruitment and retention of Aboriginal students, especially when they involve those Aboriginal faculty and staff members in the development of Aboriginal initiatives**.

The University of Lethbridge and McGill University both mention assisting students in finding housing. Lethbridge maintains connections with the Treaty Seven Urban Housing Authority. McGill has housing available in the First Peoples' House 'regardless of age'. They do not articulate, however, if that includes space for spouses and/or dependent children. While this is typically an issue for most students, **it is often more difficult for mature students to find adequate housing if they are relocating family in their move to school**.

Australian & New Zealand Schools of Medicine

A Web scan of the 12 Australian and two New Zealand undergraduate schools of medicine (Appendix C) were conducted to identify strategies for mature Aboriginal student recruitment to medicine. All of the schools articulate a commitment to improving the state of Indigenous health and most mention research and outreach initiatives in that regard (including the development of Indigenous issues across the curriculum). Most of these initiatives seem to have a rural focus, however, which leaves questions about the status of Indigenous health programs for urban populations.[17] It appears that many of the Indigenous initiatives sponsored by Australian schools of medicine are the result of the National Strategic Framework for the Inclusion of Indigenous Health in Core Medical Curricula & Recruitment, Retention and Support Strategies for Indigenous Australians in Medical Education (2002).

17 According to 2001 statistics, Indigenous peoples in Australia are more likely to be rural than their non-Indigenous counterparts, but 30% of all Indigenous Australians live in major urban centres with populations of more than 100,000 and 42% live in urban centres with populations between 1000 and 100,000. Only 28% of Indigenous Australians live in rural and remote areas. (www.environment.gov.au/soe/2001/publications/technical/indigenous/distribution.html)

Nine of the 12 Australian schools offer an Indigenous entry program; usually with dedicated seats for a number of Indigenous students (those offering numbers articulated two to eight reserved spaces). Of the other three schools, the University of Melbourne announces that 'applications [are] invited from Indigenous Australians' and they employ an Indigenous liaison officer. The University of Tasmania School of Medicine does not list an Indigenous entry program but they do offer scholarships to Indigenous students. The University of Western Australia created the Centre for Aboriginal Medical and Dental Health to 'improve the recruitment and retention of Aboriginal students in Medicine and Dentistry'.

In New Zealand, the University of Auckland utilizes the Maori and Pacific Admission Scheme (MAPAS) to facilitate increased admission of Indigenous students. The University of Otago does not list an Indigenous application stream, but they have created the Hauora Maori Thread as part of their undergraduate medical curriculum through the Maori/Indigenous Health Institute (MIHI). Among MIHI's main activities is 'supporting Maori medical and other students'.

Nearly all Australian and New Zealand medical schools articulate relationships with Indigenous studies centres/programs at their universities, including the use of those centres in implementing Indigenous entry schemes and student support initiatives.

In addition to the Indigenous entry schemes/dedicated seats, other relevant initiatives are of note. **Flinders University also offers a Mature Entry Scheme, which is of relevance to mature Indigenous students**. They also list on-campus childcare, a vacation care program and a parent centre. Additionally, they provide a Foundation Course to allow students to upgrade their skills in order to gain entry into medical school. A similar program, Wilto Yerlo, exists at the University of Adelaide. The Koori Centre at the University of Sydney also lists preparatory undergraduate and graduate courses in Aboriginal Health and Community. Finally, the University of Western Australia hosts a one-year Aboriginal Orientation Course for students interested in applying to medical school or a Bachelor of Science program.

Yaita Purrana, the Indigenous Health Unit of the Department of General Practice in the Faculty of Health Sciences of the University of Adelaide, has recently created the South Australian Indigenous Health Peer Support Network. This program intends to develop and maintain a state-wide Indigenous Support Network for health professionals servicing Indigenous communities in South Australia, including facilitation of professional development opportunities for General Practitioners within the Aboriginal health sector. Yaita Purrana also provides a local presence for the Australian Indigenous Doctors Association (AIDA). AIDA is recognized as a leader in the support of Indigenous medical

professionals in Australia and their connection to the University of Adelaide is credited with improving the recruitment and retention of Indigenous students to medicine.

The James Cook University School of Medicine is Australia's newest undergraduate medical school (as discussed in Hays), graduating their first cohort in 2006. They offer Australia's only full medical course in northern Australia and are distinguished by their "community-based curriculum, regionalised delivery and a strong emphasis on rural, remote, Indigenous and tropical health."[18] They employ 17 Indigenous faculty and staff in academic, research and administrative positions across schools and centres of their faculty. They have an Indigenous Health Unit with focus in the areas of Indigenous health curriculum, community linkages and recruitment/support of Indigenous students. They have also created the Medical School Aboriginal and Torres Islander Student Selection Committee (MSATSISSC) to facilitate an alternative pathways model to assist Indigenous applicants who have been unsuccessful in the mainstream admissions process. The pathway "typically involves the applicant completing one years' successful study in a science or biomedical program, and then joining the JCU SOM program."[19] They have had seven students enter through this program and report "adequate progression" for those students.

18 James Cook University School of Medicine, Report to the Australian Medical Council, September, 2006, p. 1.
19 Ibid., p. 16.

Survey Results

Canadian Faculties of Medicine Undergraduate Programs

All 17 Canadian undergraduate schools of medicine were surveyed between February and March 2007. Electronic surveys were sent to the deans of each school along with a letter of introduction regarding the research from NAHO. The deans were asked to answer the survey themselves or pass it on to the person at their institution best suited to do so. The survey included questions regarding general and Aboriginal-specific enrolment statistics, recruitment strategies, admissions policies, medical students' opportunities for exposure to Aboriginal health issues and support offered to current Aboriginal medical students. Eleven of 17 medical schools [Alberta, McGill, McMaster, Memorial, Montreal, Northern Ontario School of Medicine (NOSM), Ottawa, Saskatchewan, Sherbrooke, Toronto and the University of Western Ontario]) have completed the survey.

As noted, the survey focused on statistical information, recruitment, admissions, Aboriginal health issues in the curriculum and Aboriginal student support programs. Summary results follow.

Statistics

[To protect the privacy of students, enrolments of less than five are not specified.]

Table 1: Statistical Responses

Medical School	Total enrolment	Aboriginal Enrolment	Mature Enrolment	Mature Aboriginals
Alberta	527	22	Not available	5 or less
McGill	675	Not tracked	34	Not tracked
McMaster	437	13	32	6
Memorial	240[20]	No response	No response	No response
Montreal	259[21]	Not tracked	5 or less[22]	Not tracked
NOSM	110	9	30	6
Ottawa	600	16	No response	0
Saskatchewan	244	9	9	5 or less
Sherbrooke	649	No response	No response	No response
Toronto	824	5 or less	55	5 or less
UWO	536	5 or less	8	0
Total	**5101**			

20 Memorial's response to this questions was '60 per year', therefore it is roughly estimated that they enroll 240 students in total.
21 Montreal reported 709 total medical students in 2003; therefore it is assumed here that they are reporting only first year numbers. In the discussion of increases in overall enrolments Montreal will not be included.
22 Montreal reported '5-8' mature students. For statistical analysis purposes, the low (five) has been used.

For the reporting schools, Aboriginal students represent 1.5 per cent of the total undergraduate medical school enrolment. Responses indicated that Aboriginal students comprise 8.7 per cent of the mature medical student enrolment. For schools tracking both mature and Aboriginal students, Aboriginal students comprise 10.4% of mature medical students. This reinforces the assumption that Aboriginal medical students are more likely to be mature than non-Aboriginal students.

Six medical schools (Alberta, McGill, NOSM, Saskatchewan, Toronto and UWO) indicated that they employed Aboriginal faculty and/or staff members, many of whom are involved in recruitment/admissions and/or as clinical faculty.

Aboriginal Recruitment Initiatives

Most of the schools sponsor recruitment initiatives focusing upon high school students. These include summer science camps, summer mentorship programs and visits to high schools servicing Aboriginal communities. Of note in this category is the NOSM use of current Aboriginal medical students to make presentations to Aboriginal communities. Most of the medical programs at universities with Aboriginal student services programs have built partnerships with those support programs. Often staff members from Aboriginal student services are involved in Aboriginal admissions committees and medical school recruitment initiatives.

The University of Saskatchewan has a highly developed recruitment plan, including the Aboriginal Access Program (separate competition for Aboriginal applicants), Aboriginal Mentorship Program, Aboriginal Pre-Medicine Awards (six $2500 awards per year to Aboriginal students studying pre-med; being replicated by the University of Regina) and the Native Access Program to Nursing/Medicine (recruitment strategy new to the medical school in 2005). In 2005, Saskatchewan also provided financial support for two Aboriginal Pre-Medicine Award winners to take an MCAT preparation course so they could improve their scores to a level gaining them admission to medical school. All of the schools articulated that they assess the success of their recruitment initiatives based upon the number of applicants, offers and acceptances of Aboriginal students. Also of note is McMaster's Native Health Sciences Office created to support undergraduate students in the health sciences and encourage the pursuit of continued health education leading to health field careers, including medical school.

McGill, Montréal and Sherbrooke have reported that the Québec government is developing an initiative to allocate four committed Aboriginal seats per year across the four medical schools in Québec, specifically for Québec Aboriginal applicants. There will be an Aboriginal Coach hired by the province to provide support to the Aboriginal students admitted under this initiative.

Admissions Policies

[A detailed survey of Canadian medical faculty Aboriginal admissions programs has been completed by IPAC-AFMC and will be available online on both organizations' web sites as of April 2008.]

Table 2: Admissions Policies

Medical School	Dedicated Aboriginal Positions/Year	*Adjusted MCAT scores	*Adjusted GPA	Aboriginal Admissions Sub/Committee
Alberta	5 positions	Flexible but minimum maintained	No	Yes
McGill	Yes	Yes	Possibly, with medical school prep year	Provincial
McMaster	No quota	n/a	No	Yes
Memorial	No	Flexibility for in-province applicants	Flexibility for in-province applicants	No
Montréal	In planning stage	No	No	No
NOSM	2 positions	n/a	No	Yes
Ottawa	8 positions	No need	3.4 instead of 3.6	Yes
Saskatchewan	6 positions	No	No	In formulation
Sherbrooke	Yes	No	Yes	Yes
Toronto	3 positions	No	No	Unclear
UWO	3 positions	Flexibility	Flexibility	Yes

* 'Adjusted MCAT' and 'Adjusted GPA' were not defined in the survey. Responses indicate how particular schools define and use policies in these areas.

In addition to the information in Table 2 is Ottawa's initiative to provide financial support to first year Aboriginal medical students. Specifics for the program were not elaborated upon, but it is an interesting recruitment/retention strategy worth further consideration.

Aboriginal Health Curriculum

[A detailed survey of medical faculty Aboriginal health curriculum at the undergraduate, post-graduate and continuing medical education levels is being undertaken by IPAC, AFMC and RCPSC (Royal College of Physicians and Surgeons of Canada) in 2008.]

Six of the responding schools (Memorial, NOSM, Ottawa, Saskatchewan, Toronto, and UWO) indicated that Aboriginal health issues are integrated into the overall curriculum, but it is unclear to what extent that occurs. Several indicated that cultural competency/learning objectives were included in the curriculum as well. Alberta is in the process of developing an Aboriginal Traditional Medicine Course as well as an Aboriginal Elective course. McGill includes Aboriginal communities in their rotations and all students going through paediatric rotations are given some information on Aboriginal patients (re: translators, liaison, follow up). Memorial offers an Aboriginal cultural competency workshop. Saskatchewan offers optional Aboriginal community experiences. Toronto has extended Aboriginal content in a 'Year 4 Determinants of Community Health' course. UWO offers Aboriginal clinicals.

NOSM reports that "at the end of the First year, all students live in an Aboriginal community for one month in pairs (28 sites across northern Ontario) and while living there they continue the regular curriculum and do their clinical work in the nursing station or health center [sic] in their community." This supports the overall mission of NOSM to serve northern communities and is also reflective of a commitment to better meet the needs of Aboriginal communities.

Support Services

Schools were asked to describe any support services specifically offered to mature students and/or Aboriginal students. NOSM has an Aboriginal resource office that includes peer support. They also indicated peer support and awards/bursaries for mature students. NOSM also hosts Aboriginal cultural/ceremonial activities open to all staff, faculty and students. None of the other schools indicated mature student support programs, with most mentioning that their student affairs office provided support to 'all students'. Alberta, McGill, McMaster, Ottawa, Toronto and UWO all indicated support available to Aboriginal students from Aboriginal student service programs. UWO has also developed several support initiatives for Aboriginal students, including: a faculty mentor for all incoming Indigenous students; peer mentoring between senior and new Indigenous students; and fundraising efforts to support three $10,000 entrance scholarships for incoming Indigenous students.

Aboriginal Student Services Programs and Aboriginal-specific Academic Programs

A total of 16 Aboriginal student services programs (noted in Appendix A) were surveyed between February and March 2007, in an attempt to identify recruitment and retention strategies relevant to issues of mature Aboriginal student recruitment to medicine. The specific programs were selected based on Web scan findings with a minimum of one/maximum of four universities per province. Six Aboriginal-specific academic programs (noted in Appendix B) were selected for survey based upon Web scan findings and/or program reputation, including one Aboriginal teacher education program, one Native Studies department, one Native law program, one Masters of Aboriginal Social Work Program, one Native nurse entry program and one Aboriginal governance program. Of the 22 total surveys only three were returned by the date of final reporting. Given the small return rate, only anecdotal analysis is included below.

The University of Calgary's Native Centre reports a university-wide enrolment of 276 Aboriginal students out of an approximate 28,000-member student body, about 1per cent. As found in medical school enrolment, Aboriginal students are usually underrepresented in all faculties. The under representation at the undergraduate level connects directly to the under representation in graduate and professional programs, including medical school. The University of Calgary has developed several recruitment initiatives, however, in an attempt to increase Aboriginal enrolments. These include an Aboriginal Admissions Policy (allows self-identified Aboriginal students who meet minimum requirements to submit additional information for admissions consideration), the NAPI Ambassador Program (mentorship and leadership program using university students as mentors and promoters of higher education), and a specialized recruitment team (present to high schools, colleges and Aboriginal schools within the province). The NAPI program is funded through corporate donations. Also of note is the Aboriginal Student Policy Standing Committee which meets quarterly to discuss the programs and services available to Aboriginal students and Aboriginal student data.

The Native Nurses Entry Program (NNEP) at Lakehead University enrols 20 students per year (all Aboriginal). The students self-identify and university staff follows up with applicants for specific Aboriginal identification (Status or Non-status First Nations, Inuit, Métis). They utilize an extensive recruitment network to reach Aboriginal communities and potential students, including Websites, career fairs, conferences and community visits. In regards to Aboriginal-specific admissions they report that, "We know that we must do our own recruitment and selection processes—standard approach doesn't work. [We] need face to face contact in communities." This has proven very successful for their program and is good advice for any Aboriginal recruitment plan.

For student support, they employ a counsellor to work specifically with this program who is a NNEP/BScN graduate from Lakehead. In addition, they have NNEP graduates enrolled in the BScN program serve as mentors to NNEP Access students. This use of mentoring across the different levels of education has proven very successful. This program receives financial support from the First Nations Inuit Health Branch (FNIHB), demonstrating a successful partnership between government and university to better meet the training and treatment needs of Aboriginal people.

In the Fall 2006 semester, Wilfrid Laurier University Faculty of Social Work implemented a new Masters of Aboriginal Social Work degree program. Fourteen of the sixteen enrolled students are self-identified as Aboriginal and all of the students are mature (the youngest is 35). They employ several Aboriginal faculty and staff and indicated that, "…because the faculty and main point of contact staff person are aboriginal people, it says a lot to our students. There's a certain amount of trust and comfort established immediately." While they do not offer experiential credit transfers they do evaluate students based upon experience as well as academics. They also have offered conditional admission to students lacking certain pre-requisites based upon an agreement to complete the missing course in addition to the program courses.

Discussion

The survey part of this research was modeled after the research published by Spencer, et al., in 2005 (conducted in 2003). While the response rate for this survey is not 100 per cent as with that study, there are still many areas for comparison. For example, their analysis looks at two case studies: the University of Manitoba and the University of Saskatchewan.

Spencer, et al., reported that the University of Saskatchewan had only one Aboriginal student enrolled in 2003, despite having three designated seats for Aboriginal applicants each year.[23] They suggested a series of changes at Saskatchewan had led to the poor Aboriginal enrolments, including the loss of a faculty member who advocated for Aboriginal issues and changes in MCAT minimums instituted in 2000. This research, however, indicates a significant turn-around for Saskatchewan. They currently (2007) enrol nine Aboriginal students, comprising 3.7per cent of their entire student body. In 2006 Saskatchewan doubled their number of dedicated Aboriginal seats to six. They also have several pre-medical school initiatives discussed earlier. These factors appear to have proven quite successful for Saskatchewan; however, given the large Aboriginal presence in their province, there is still a long way to go for their student body to be reflective of the larger population.

While the University of Manitoba was unable to complete their response to this survey by the deadline, they did share their March 2007 Aboriginal Specific File for Public Affairs.[24] This file reports nine Aboriginal students currently registered in the School of Medicine (down from 12 in 2005 and 15 in 2003). There is no discussion of this drop in enrolments, but it may come as a result of increased recruitment efforts by other medical schools all competing for a relatively small pool of Aboriginal students deemed to be 'qualified'. They continue to provide support programs for Aboriginal students enrolled in professional health programs (Medicine, Dentistry, Physical/Occupational Therapy and Pharmacy). Additionally, they hosted 'Think Tank: Strategies to double the number of Aboriginal physicians in Canada' organized by IPAC, AFMC and Health Canada in March 2006.

Compared to the Spencer, et al., research, the 11 schools who responded to the survey in this report increased the number of Aboriginal students from 22 to 66. When Manitoba's numbers are factored in, the numbers go from 37 in 2003 to 78 for 2006-2007. The greatest increases were seen by the University of Ottawa (from zero to 16), McMaster University (from two to 13) and the University of

23 Spencer, et al., pp. 106-108. The authors also noted that the one Aboriginal student was not admitted through the Aboriginal admissions process.

24 Provided by Dr. Fred J, Shore, Executive Director, Office of University Accessibility, Accessibility@Umanitoba.Ca.

Saskatchewan (from one to nine). These statistics indicate a marked increase in Aboriginal medical school enrolments (and possibly better tracking methods), which will lead to a significant increase in Aboriginal physician resource capacity in the near future. It should be noted, however, that all of these schools increased their overall admissions as well (by a total of 415 students, making the Aboriginal increase 10.6% of the total).

Of additional note are medical schools that previously neither tracked Aboriginal applicants nor offered any type of Aboriginal admissions or support programs who are now developing initiatives in those areas (such as the collaboration between the four Quebec schools through the provincial government). While there still appears to be some reluctance regarding the tracking of Aboriginal students this marks an effort towards Aboriginal equity.

Best and Promising Practices - Recommendations

In considering best and promising practices for the recruitment of mature Aboriginal students to medicine, several areas of consideration exist.

1. First, an adequate pool of Aboriginal applicants to medical school needs to be created, including mature Aboriginal students. This involves both preparatory programs and focused recruitment initiatives.
2. Second, financial support needs to be offered to Aboriginal medical students. This is often an even greater factor for mature students.
3. Third, medical schools need to provide an environment where Aboriginal students feel respected and valued. Part of that process includes Aboriginal-specific support initiatives and respectful inclusion of Aboriginal health in the overall medical curriculum. This not only allows Aboriginal students to feel connected but also better prepares all medical students for work within a diverse Canadian populace.

Creating an adequate candidate pool. There is not a lack of Aboriginal people capable of becoming physicians, but there is a lack of Aboriginal people prepared to apply for, enter and succeed in medical school. Several universities (through medical schools, health sciences faculties and/or Aboriginal student services programs) sponsor programs to inspire youth to consider a career in medicine and these programs do contribute to the growing number of Aboriginal medical school applicants. These programs should continue and be replicated in more areas.

Additionally, more could be done to garner applications from mature Aboriginal students. Existing Aboriginal health care professionals could constitute a significant pool of medical students as they already have relevant medical and other academic training and have a clear understanding of the demands of a physician's career. However, Aboriginal health care professionals are not likely to pursue that path if they have to make extreme personal and family sacrifices. Chances are they are already making a decent living in their profession, allowing them to support themselves and/or family members. Other mature Aboriginal people may have completed the requirements for medical school application but opted to either not apply or chose a different career path upon unsuccessful application. Pre-medicine preparatory programs could be beneficial to these individuals, both in convincing them to reconsider a medical career and to boost their skills for re-application. Summer programs—such as the one being piloted in May 2007 at Six Nations Polytechnic (see note #8)—are one approach in this regard.

Another approach are one-year programs, often offered at a post-baccalaureate level, that seek to boost the skills of medical school applicants in key areas such as MCAT preparation, math/science skill enhancement and advanced exposure to health sciences curriculum.

For students from underrepresented populations, such as Aboriginal people in Canada, the edge these programs provide will increase the odds for admission (increasing enrolment equity) and give the students a stronger base for success in medical school.

Financial support. Aboriginal students often come from the lower end of Canada's economic scale and very few come from families capable of underwriting the costs of medical school. Even though many First Nations and Inuit students are eligible for support through the Indian and Northern Affairs Post-Secondary Education Program (via their communities), those funds are rarely adequate to meet student needs at any level of post secondary education, especially medical school.[25] Many First Nations and Inuit students do not receive these funds due to the insufficient funding of this program (which has not seen a real increase in over a decade). Furthermore, non-Status First Nations and Métis students are never eligible for these monies. Some might suggest that if Aboriginal students want to go to medical school they should take the route of student loans and working (which other lower income medical students also have to do); however, these economic shortfalls often contribute to Aboriginal students—especially mature Aboriginal students (see previous section)—not pursuing medical school. Scholarship and bursary programs are one approach to addressing this major issue. Government support in this regard has proven successful with programs such as Lakehead's Native Nurses Entry Program as well as many of the Indigenous initiatives described at Australian and New Zealand medical schools. The potential for private/corporate support is another area for investigation. For example, the current fundraising initiative at the University of Western Ontario could prove successful towards bridging the economic gap many Aboriginal students face. Other schools who connect financial packages with designated Aboriginal seats also seek to address this area of concern. Mature student needs must be factored in when designing these financial aid/awards packages. Most graduate schools have long employed this critical recruitment tactic to create a talented and diverse intake of students.

As noted earlier, mature students often hold additional financial and familial responsibilities. If medical schools are to increase the number of mature Aboriginal students to medicine, factors such as assistance in securing housing, day care programs and student-parent support groups need to be implemented. The University of Lethbridge outreach to the Treaty Seven Urban Housing

25 For a detailed discussion of this, see RA Malatest & Associates, 'Aboriginal Peoples and Post-Secondary Education: what educators have learned,' Canada Millenium Scholarship Foundation, January 2004.

Authority and McGill's First Peoples' House could be used as models in this regard (depending upon local factors for different schools). Medical schools seeking to recruit mature Aboriginal students should partner with university or local day cares to assist placements for young children. A day care subsidy would also help to relieve the financial burden some mature Aboriginal students may face, especially when relocating away from family/community who previously assisted with childcare needs. The Student-Parent support group at the University of Alberta (Aboriginal Student Centre) is an example of another support system for mature students. A group such as this may also be able to make referrals in the areas of housing and day care.

Respectful environment. All students who gain admission to Canadian medical schools have proven their ability to succeed in mainstream education. However, that does not mean Aboriginal medical students no longer need support programs to help them navigate medical school. In fact, the pressures of medical school can plant doubt in the minds of students who were previously very confident. In addition, Aboriginal students may be confronted with issues of racism, bias and prejudice. Cultural conflicts may also arise around curriculum and the representation of Aboriginal health issues in courses or clinicals. Many Aboriginal students will also have to relocate away from family and community in order to attend medical school, adding additional stresses. For all of these reasons, it is important to provide Aboriginal students with Aboriginal-specific support systems. In this research, several medical schools report partnerships with Aboriginal student services programs to address the specific needs of Aboriginal medical students. Schools should also look to Aboriginal communities as sources of support for students as well as contributors to recruitment initiatives and curriculum. An important example of this exists in the 2020 Vision Collaboration.

Related to the curriculum, it is important that medical schools respectfully teach about Aboriginal health issues. If a school chooses to integrate Aboriginal issues across the curriculum, they should monitor the success of that approach regularly to insure that all students are gaining competency in understanding and addressing Aboriginal health. If they offer specific courses in Aboriginal health, they should either consider making the courses mandatory or heavily promote it. Any curricular discussion of Aboriginal health should seek to include multiple perspectives on Aboriginal health—especially Aboriginal perspectives—not just clinical information. An excellent way to do this is by allowing Aboriginal faculty members who are actively involved in Aboriginal communities to design and teach the courses. Through their community connections they will bring important first-hand knowledge to the classroom and could also be seen as role models for Aboriginal students. In all cases, it is important to respect the Aboriginal-specific knowledge Aboriginal students may have but not to unnecessarily 'put them on the spot' as

experts or examples. Recently, government support for Aboriginal health research has led to the creation of research centres (ACADRE network) affiliated with several Canadian schools of medicine. The centres serve as places for research and may also entice Aboriginal people to apply to schools with these centres. They also raise the profile of Aboriginal health issues on the campus, which will contribute to a better educated student body regarding Aboriginal health and may help to create a more welcoming environment for Aboriginal medical students. Most of the Australian and New Zealand undergraduate medical schools had Indigenous health research centres.

Programs for further investigation as best practices models. It is difficult to use the title 'best practices' without conducting in-depth comparative and longitudinal research. However, a number of initiatives stand out as possible models for success in the recruitment of mature Aboriginal students to medicine. Some of these have already been highlighted in other areas of the report. It is suggested that these programs and initiatives be seriously considered in the design of recruitment plans targeting mature Aboriginal students. Following are additional programs that provide promise in this regard. The examples are primarily from the United States as Canadian, Australian and New Zealand models have been discussed already.

Recruitment/Capacity Building

Four Directions Summer Research Program (FDSRP): Harvard University, organized by Native American medical students and the Harvard Native American program. http://www.hms.harvard.edu/dms/diversity/fdsrpintro.html

Summer Medical and Dental Education Program (SMDEP): six-week summer program offered at 12 medical schools across the US focusing upon underrepresented populations (determined by each campus) www.smdep.org

University of North Dakota Indians into Medicine Program INMED: includes MedPrep, a six-week summer program to prepare for MCATs or before entering med school; and Pathway at UND, a six-week summer program for tribal college students looking to enter UND in the health sciences; and a support program for Native medical students (seven designated seats/intake year) http://www.med.und.nodak.edu/depts/inmed/home.html

Financial Support

Indian Health Service Scholarship Program: funded by the United States federal government; offers financial support to American Indians and Alaska Natives in the following programs, (1) Health Professions Preparatory Scholarship Program, (2) Health Professions Pregraduate Scholarship Program, and (3) Health Professions Scholarship Program
http://www.ihs.gov/JobsCareerDevelop/DHPS/Scholarships/Scholarship_index.asp

Curriculum/Community Collaboration

University of Washington Indian Health Pathway: provides medical students (Native and non-Native) with the necessary information and experiences to make them better practitioners in urban and rural Native American communities; part of the School of Medicine's Native American Center of Excellence which focuses on recruitment of American Indian and Alaska Native students to medicine, integration of Native health knowledge into the curriculum, professional development for Native physicians and support of multicultural initiatives.
http://faculty.washington.edu/dacosta/nacoe/ihp.html

Suggestions for Further Research

In responding to the results of this research, a number of suggestions for further research and outreach are offered below:

- Clear strategies should be developed to address the two major categories of "mature" students—those with gaps in their education continuum and those currently working in the health field who may wish to become doctors—noting that in some cases, individuals will fall into both categories. Given the extreme competition of medical school application and lack of Aboriginal physician role models, it is quite possible that a number of interested and qualified Aboriginal individuals may have either given up after being rejected or may not have even bothered applying. It is likely that many people in this category chose careers in the health field and would fall into the second category; however, others may have gone in other career directions and would not be reached by standard recruitment approaches focusing on health workers. While this may be a difficult population to reach, different recruitment strategies could be employed to encourage their application to medical school.

- Targeted research of practicing Indigenous physicians is timely and relevant to gaining insight into the recruitment and retention of mature students to medicine. Many of these physicians entered medical school as "mature" students and have insights to share. Further, all of these Aboriginal physicians had to face challenges specific to being Aboriginal, regardless of age. It is suggested that the research focus on those aspects that contributed to their success in medical school and beyond.

- Research should be conducted with current Aboriginal health care workers in other areas. They should be asked if they have an interest in medical school and what factors are keeping them from pursuing those interests. Programs then need to be designed and implemented to respond to their issues.

- While relevant comparisons were identified in the Web scans of undergraduate medical schools in Australia and New Zealand, further research should also be conducted using United States medical schools for comparative purposes. US medical schools follow a more similar education path to that of Canadian schools and Indigenous peoples in the United States have a great deal in common with those in Canada.

APPENDIX A

Aboriginal/First Nations/Native Student Services @ Canadian Universities

University	Location	Service Designation	Web Address
Acadia University	Wolfville, Nova Scotia	-none listed	www.acadiau.ca
Alberta, University of	Edmonton, Alberta	The Aboriginal Student Services Centre (ASSC)	www.uofaweb.ualberta.ca /aboriginalservices
Athabasca University	Athabasca, Alberta	Centre for World Indigenous Knowledge and Research	indigenous@athabascau.ca
Bishop's University	Sherbrooke, Quebec	-none listed	www.ubishops.ca
Brandon University	Brandon, Manitoba	The Indigenous Peoples' Centre	www.brandonu.ca/studentsvc /indigenous_peoples'_centre.htm
British Columbia, University of	Vancouver, British Columbia	First Nations House of Learning	www.longhouse.ubc.ca
Brock University	St.Catharines, Ontario	Aboriginal Student Services (AbSS)	www.brocku.ca/sdc/aboriginal
Calgary, University of	Calgary, Alberta	The Native Centre	www.ucalgary.ca/nativecr
Carleton University	Ottawa, Ontario	The Centre for Aboriginal Culture and Education (CACE)	carleton.ca/equity/aboriginal_ welcome/index.htm
Concordia University	Montreal, Quebec	Centre for Native Education	http://supportservices.concordia.ca /nativecentre/
Dalhousie University	Halifax, Nova Scotia	Student Support Program, through the Atlantic Aboriginal Health Research Program.	aahrp.socialwork.dal.ca aahrp_3766.html
Guelph, University of	Guelph, Ontario	Aboriginal Resource Centre	www.studentlife.uoguelph.ca/arc
Lakehead University	Thunder Bay, Ontario	Aboriginal Cultural and Support Services, Aboriginal Awareness Centre	aboriginalservices.lakeheadu.ca
Laurentian University of Sudbury	Sudbury, Ontario	Native Student Affairs	www.laurentian.ca/Laurentian/ Home/Departments/Native+ Student+Affairs
Laval, Université	Québec Canada	-none listed	www.ulaval.ca/
Lethbridge, University of	Edmonton, Alberta	Native Student Advising	www.uleth.ca/ross/aboriginal/ index. html

University	Location	Service Designation	Web Address
McGill University	Montreal, Quebec	First Peoples' House	www.mcgill.ca/fph/
McMaster University	Hamilton, Ontario	Native Students Health Sciences office	www.fhs.mcmaster.ca/nativehs
Manitoba, University of	Winnipeg, Manitoba	Aboriginal Student Centre	umanitoba.ca/student/asc
Memorial University of Newfoundland	St. John's, Newfoundland	-none listed	www.mun.ca
Moncton, Université de	Moncton, New Brunswick	-none listed	www.umoncton.ca
Montréal, Université de	Montréal, Quebec	-none listed	www.umontreal.ca
Mount Allison University	Sackville, New Brunswick	Aboriginal Community Development Centre (ACDC)	www.mta.ca/diversity.html
Mount Saint Vincent University	Halifax, Nova Scotia	-none listed	www.msvu.ca/
New Brunswick, University of	Fredericton, New Brunswick	Aboriginal Student Services and Programs - Mi'kmaq-Maliseet Institute	eservices.unb.ca/calendar/undergraduate/display.cgi?tables=services&id=2
Nipissing University	North Bay, Ontario	Aboriginal Services	www.nipissingu.ca/aboriginal
Northern British Columbia, University of	Prince George, British Columbia	First Nations Centre Student Support Services	www.unbc.ca/firstnationscentre/index.htm
Ottawa, University of/Université d'Ottawa	Ottawa, Ontario	The Aboriginal Resource Centre (ARC)	www.sass.uottawa.ca/aboriginal
Prince Edward Island, University of	Charlottetown, Prince Edward Island	-none listed	welcome.upei.ca/index.html
Québec, Université du	Québec, Québec	-none listed	www.uquebec.ca
Queen's University at Kingston	Kingston, Ontario	Four Directions Aboriginal Students Centre	www.queensu.ca/dsao/4dasc/4D- 1.htm
Regina, University of	Regina, Saskatchewan	Aboriginal Career Centre	www.uregina.ca/acc/index.html
Royal Roads University	Victoria, British Columbia	-none listed	www.royalroads.ca
Ryerson Polytechnic University	Toronto, Ontario	Ryerson Aboriginal Student Services (RASS)	www.ryerson.ca/aboriginal

University	Location	Service Designation	Web Address
Sainte-Anne, Université	Church Point, Nova Scotia	-none listed	www.usainteanne.ca
St. Francis Xavier University		Antigonish, Nova Scotia	-none listed www.stfx.ca
Saint Mary's University		-site is currently down	www.stmarys.ca
Saint Paul University	Ottawa, Ontario	-none listed	www.ustpaul.ca
St. Thomas University	Fredericton, New Brunswick	Native Student Council	w3.stu.ca/student_life.aspx
Saskatchewan, University of	Saskatoon, Saskatchewan	Aboriginal Students' Centre, Indigenous Students Council	explore.usask.ca/aboriginal/centres
Sherbrooke, Université de	Sherbrooke, Québec	-none listed	www.usherbrooke.ca
Simon Fraser University	Burnaby, British Columbia	First Nations Student Centre	students.sfu.ca/firstnations
Technical University of British Columbia		-none listed	www.tu.bc.ca
Toronto, University of	Toronto, Ontario	First Nations House	www.fnh.utoronto.ca
Trent University	Peterborough, Ontario	Indigenous Student Services	www.trentu.ca/academic/nativestudies/students
Trinity Western University	Langley, British Columbia	-none listed	www.twu.ca
Victoria, University of	Victoria, British Columbia	The Indigenous Students Community	web.uvic.ca/indigenous/services.html
Waterloo, University of	Waterloo, Ontario	Aboriginal Services Centre	aboriginalservices.uwaterloo.ca
Western Ontario, University of	London, Ontario	First Nations Services	www.sdc.uwo.ca/firstN
Wilfrid Laurier University	Waterloo, Ontario	Native Student Services	mlickers@wlu.ca
Windsor, University of	Windsor, Ontario	Turtle Island Aboriginal Education Centre	www.uwindsor.ca/aec
Winnipeg, University of	Winnipeg, Manitoba	Aboriginal Student Services Centre (ASSC)	www.uwinnipeg.ca/index/servicesaboriginal
York University	Toronto, Ontario	Aboriginal Services	www.yorku.ca/scld/abserv

APPENDIX B

Environmental Scan: Select Canadian Aboriginal-Specific Academic Programs

University	Program	Contact Information	Web Address
First Nations University Canada	School of Indian Social Work (ISW)	710 Duke Street Saskatoon, Saskatchewan S7K 0P8 Phone: 306-931-1804 Fax: 306-665-0175 Email: ISW	www.firstnationsuniversity.ca/files/IndianSocialWork.pdf
Lakehead University	Native Nursing Entry Program	Connie Hartviksen, Director connie.hartviksen@lakeheadu.ca	nativenursing.lakeheadu.ca
Queens University	Aboriginal Teacher Education Program	Program Coordinator/ Tenure-Track Faculty Jacqueline Moore Daigle mooredaj@educ.queensu.ca 613-533-6218	educ.queensu.ca/~atep/atep.html
U. Saskatchewan	Native Law Centre	Ruth Thompson Ruth.Thompson@usask.ca Director, Program of Legal Studies for Native Peoples Phone: (306) 966 6190	www.usask.ca/nativelaw/
Trent University	Indigenous Studies Department	cwelter@trentu.ca	www.trentu.ca/nativestudies/
Wilfrid Laurier University	Masters in Aboriginal Social Work	Melissa Ireland Administrative Assistant mireland@wlu.ca	www.wlu.ca/homepage.php?grp_id=1844
University of Winnipeg	Aboriginal Self-Governance Program	Director Professor Larry Chartrand Phone: 204.786.9397 Fax: 204.774.4134 email: l.chartrand@uwinnipeg.ca	asg.uwinnipeg.ca

APPENDIX C

Australian Undergraduate Schools of Medicine

Australian National University
http://www.anu.edu.au/
42 Frank Fenner Building
Canberra
Tel: +61 25 10 88, Fax: +61 25 07 58
http://medicalschool.anu.edu.au/

Flinders University, School of Medicine *
http://som.flinders.edu.au/
G.P.O. Box 2100
Adelaide, SA 5001
Tel: +61 8 8204 5794, Fax: +61 8 8204 5675

James Cook University, School of Medicine
http://www.jcu.edu.au/school/medicine/
Townsville, QLD 4811
Tel: +61 7 4781 6232, Fax: +61 7 4781 6986

Monash University, Faculty of Medicine
http://www.med.monash.edu.au/
Wellington Road, Clayton, Victoria 3168
Tel: +61 3 9905 4318, Fax: +61 3 9905 4302

University of Adelaide, Faculty of Medicine
http://www.health.adelaide.edu.au/
Frome Road, Adelaide, SA 5005
Tel: +61 8 8303 5193, Fax: +61 8 8303 3788

University of Melbourne, School of Medicine, Dentistry and Health Sciences *
http://www.mdhs.unimelb.edu.au
Medical Building, Parkville, VIC 3010
Tel: +61 3 9344 5894, Fax: +61 3 9347 7854

University of New South Wales, Faculty of Medicine
http://www.med.unsw.edu.au/
Office of The Dean, Corner Botany & High St., Sydney, NSW 2052
Tel: +61 2 9385 2454, Fax: +61 2 9385 1289

University of Newcastle, Faculty of Medicine and Health Sciences *
http://www.newcastle.edu.au/school/medprac-pop/
University Drive, Callaghan, NSW 2308
Tel: +61 2 4921 5000, Fax: +61 2 4921 7165

University of Queensland, Mayne Medical School
http://www.uq.edu.au/health/
Herston Road, Herston, QLD 4006
Tel: +61 7 3365 5316, Fax: +61 7 3365 5433

University of Sydney, Faculty of Medicine
http://www.medfac.usyd.edu.au
Edward Ford Building, A27, Sydney, NSW 2006
Tel: +61 2 9351 4579, Fax: +61 2 9351 3196

University of Tasmania, School of Medicine
http://www.healthsci.utas.edu.au/
GPO Box 252-71, Hobart, TAS 7001
Tel: +61 3 6226 4860, Fax: +61 3 6226 4816

University of Western Australia, Faculty of Medicine and Dentistry *
http://www.meddent.uwa.edu.au/
Nedlands, WA 6907
Tel: +61 8 9346 3876, Fax: +61 8 9346 2369

New Zealand Undergraduate Schools of Medicine

University of Auckland, Faculty of Medicine and Health Sciences
http://www.som.auckland.ac.nz/
Private Bag 92 019, Auckland
Tel: +64 9 3737 521, Fax: +64 9 3737 482

University of Otago, Faculty of Medicine
http://healthsci.otago.ac.nz/division/medicine/
Medical Faculty Office PO Box 913,
Dunedin, PO Box 913, Dunedin
Tel: +64 3 479 7454, Fax: +64 3 479 5459