The Royal New Zealand College of General Practitioners
Te Whare Tohu Rata o Aotearoa

Experiencing a rural medical school

John Burton MBChB, Dip Obs, FRNZCGP

Kawhia Health Centre, 10 Tainui St, Waikato 3889, New Zealand. Email: burtonjands@outlook.com

J PRIM HEALTH CARE
2019;11(1):6–11
doi:10.1071/HC18096
Received 01 December 2018
Accepted 07 February 2019
Published 03 April 2019

Should New Zealand have a rural medical school or should there at least be rural clinical medicine departments at Otago and Auckland medical schools? As a general practitioner (GP), the arguments by academics can seem confusing. But a year ago, my wife and I had the opportunity to experience a rural medical school first hand to see what we could learn that would be applicable to New Zealand (Table 1). I had been trying for a year to find a locum so that I could take a sabbatical for 6 months. Finally, a doctor who had been with us for her rural Trainee Intern (TI) attachment offered to come. That same week, we were asked to entertain Roger and Sarah Strasser as we are a teaching practice not too far from Hamilton, which they were visiting because of Hamilton's plans to start a rural medical school. Roger is the Dean of the Northern Ontario School of Medicine (NOSM) and they made a warm offer for us to spend half of our sabbatical there.

No ordinary school of medicine

We joined the first-year medical students at NOSM as they started their orientation. The Dean's address emphasised that NOSM also stands for 'No Ordinary School of Medicine.' The medical school was founded with a mandate to address the health needs of the diverse and often remote communities of Northern Ontario. Most students come from these communities and proportionally represent the First Nation and Francophone population of Northern Ontario. Their understanding of and passion for their communities, plus the contributions they have already made, were factors in their selection. They were embarking on a 4-year course that has the whole of Northern Ontario as their campus. Their curriculum would be partly determined by the patients who turn up in the communities they were to be placed in.

On day 2, we were not sitting in an inspirational lecture by the professor of surgery. We were on a bus making the hour's journey to the Centre de Santé Communautaire du Nipissing Ouest. We had little idea what this would be, but enjoyed getting to know some of the students and hearing about the difficult process they had been through to get accepted out of over 2000 applicants, the degrees they had, the communities they had grown up in and the significant others in their lives who were now going to need to adapt to the rigours of their medical school training. What hit me most was the relationships forming. With just 64 students, half based in and around Sudbury for their first 2 years and half based at Thunder Bay, it became obvious that that they were going to be lifetime buddies by the end of their training. They are also a small enough group for their trainers to get to know them personally — the talk about being a NOSM family started to make sense. Many of these students will one day be in remote communities, and the connections they make during their training will provide vital support.

On arrival, we were greeted with coffee and croissants the Centre caters for Francophone as well as English-speaking clients. It is an amazing purpose-built community centre and we were introduced to an impressive array of health-care providers who talked about the numerous programmes they run. There was a lot of teasing and it was clear that they all enjoyed working in a multidisciplinary team and appreciated each other as well as having a passion for what they were doing. They pointed out the importance of addressing clients' problems with housing, addictions, finances, relationships, etc if they were to deal effectively with their medical issues. One of the doctors working full time at the centre joined us for a tour of the building and then spoke of how much she loved working there and how working with a team that was helping with social issues and having half-hour appointments enabled her to come to grips with patients' medical problems. The benefits of working in this environment outweighed any increase in salary that she might get elsewhere.

Table 1. Lessons for us from Northern Ontario School of Medicine (NOSM)

1. A new medical school was formed because academics and communities both pushed for a locally grown solution to regional health inequalities.
2. Separate universities were able to come together and form a joint initiative.
3. A medical school's campus can extend rurally throughout the regions it is mandated to serve.
4. Choosing a significant number of students from rural backgrounds and training them in a medical school, which has a mandate to serve rural areas and bases much of its teaching in these communities, fosters a passion among students to help in these communities.
5. A smaller class size that enables students to develop close bonds with their peers and teachers provides special links that can be invaluable when working in isolated areas.
6. Learning becomes more relevant when structured around cases in communities that students may one day work in. Distributed Community Engaged Learning results in students learning in context about the determinants of health that are relevant to these regions.
7. A network of rural training centres allows students to link up virtually. The IT developments for this also upskills rural practitioners, enabling them to link patients virtually with urban consultants.
8. 'Culture' is taught early in the curriculum so that it is not just associated with 'Indigenous people' and with 'problems'.
9. Students spend a month in an Indigenous community and this gives them a deeper understanding of the social determinants of health, as well as increasing their understanding of and empathy with Indigenous people. Their critical reflections also teach them about themselves.
10. The Indigenous peoples were asked to help in educating students, and then were empowered to run the programme themselves while at the same time being provided support.
11. If university academics engage with rural preceptors and enable them to develop the rural curriculum, rural teaching develops much more effectively.
12. We need to integrate our undergraduate and postgraduate programmes so that the latter can build on the former to produce doctors with sufficient skill and confidence to work in rural areas.
13. It takes time for communities to see the full benefits of rural training. In New Zealand, we need to act before we lose the bubble of older doctors who are starting to think about retirement if we are to utilise them as teachers.
14. Rural training centres need a slight over-supply of doctors and other health workers so that they have time to teach enthusiastically and effectively, and become involved in research.
15. A positive exposure to a rural practice raises the possibility of working in such a practice in the minds of students who have not seriously considered working in a rural area before whereas exposing students to burnt-out providers is likely to have a negative effect.
16. The best way to become sufficiently competent to work away from urban supports is to get plenty of exposure to rural practice, working with skilled preceptors. More exposure, more exposure, more exposure was the main message we heard.

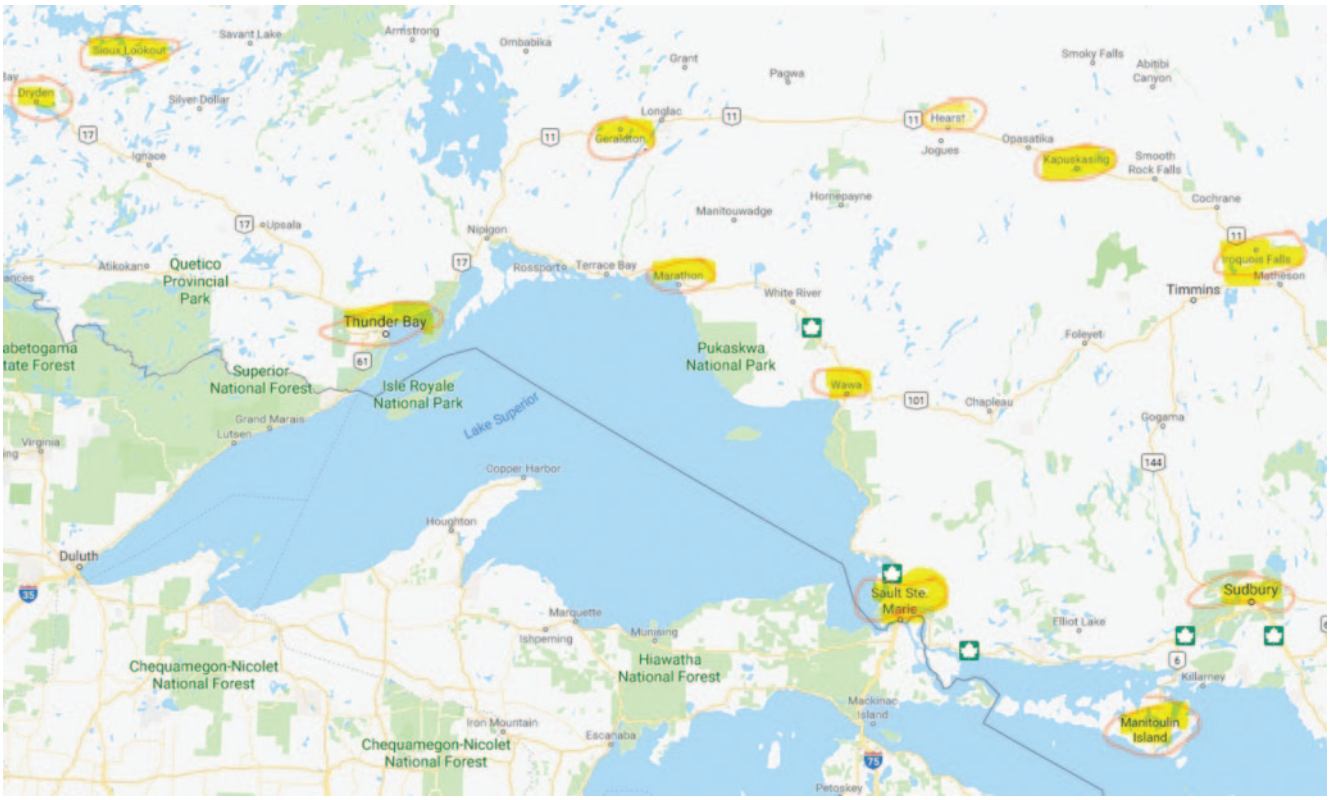
We then visited the Nipissing First Nation reserve. We were introduced to their culture, what they were developing through self-governance and their people and facilities. We discussed addiction problems, looked at their meeting and resource rooms and library and finished up by joining in a game of lacrosse.

If I was starting out at medical school at NOSM, I would be starting to dream about how I could get to understand Northern Ontario's rural communities better and how one day I could work alongside the people in the communities in a way that would really make a difference. And talking with the students on the bus, which was buzzing with excitement on the way home, that's exactly what most of them were thinking too.

What it took to set up NOSM is interesting if we are to do anything similar in New Zealand. The impression I got was that the university had generated the idea for it, but it was communities that caught the vision and pushed the politicians into making it happen. Many rural doctors did not support it. They had bought practices with no intention of adding teaching to their workload. They became enthused once they saw the benefits of NOSM after it was established, but they were not the original drivers.

NOSM organised a programme for us to experience what they are doing. Figure 1 is a google map showing where we went. The first month was spent at Laurentian University in Sudbury. We later spent a week at the other part

Figure 1. Map of places we visited with NOSM (Google Maps).



of the medical school at Lakehead University in Thunder Bay, 1000 km to the west. In between, we visited Sault Ste. Marie, which has formed important neutral ground, to show no favouritism when NOSM started. From there, we were encouraged to visit the smaller communities of Wawa and Marathon, and Dryden and Sioux Lookout to the west. We also visited practices on Manitoulin Island and were later to call in on Geraldton, Hearst, Kapuskasing and Iroquois Falls as we made our way back east.

The staff at Sudbury were generous with their time and shared many ideas. The first 2 years of the curriculum are divided into 11 Case-Based Modules, each covering a major body system but based on cases from specific communities in Northern Ontario. The cases are complex, involving social and geographical issues, as well as physical problems, and a facilitator guides the students in their self-directed research. We joined some of the second year students for their small group sessions and shared with them as they identified learning issues and developed strategies to acquire the necessary knowledge to understand the cases. As each week progressed, further information was revealed about the patient until the objectives related to the sessions had been fully explored by the students. We were amazed at how good the second year students had become at working as a team to research the issues they identified. It was also fascinating to see how they used IT to link sessions with the other half of the students at Thunder Bay. Later, when they went out on placements to different rural communities, they could still get together virtually to continue these studies. With medical knowledge always changing, NOSM aims to teach students how to research medical ideas both in the future and in any location that they may eventually work.

All students spend a month on a First Nation reserve. This occurs well into their first year

to allow plenty of preparation time as it is a new experience for many students. 'Culture' is taught early in the curriculum so that it is not just associated with 'First Nations' and with 'problems'. The Indigenous peoples were asked for help in educating students, and then were empowered to run the programme themselves while being provided with support. Students learn not just about the community but gain insights into the on-going effects of inter-generational trauma and they learn about themselves. This process risks students having feelings of white guilt, so they are monitored and mentored by staff. The communities that students go to are varied. Students continue to meet as a group by teleconference to discuss issues as well as to gain an appreciation of the great variety of communities. A big change in students level of understanding and empathy is observed by the people on the Reserves.

Over the last 2 years, the Year 2 Integrated Community Experience, where students go in pairs to two different rural communities for a month each, has been having its original curriculum revised. Rather than the university academics doing this alone, NOSM has engaged rural preceptors, giving them a sense of ownership, resulting in improvements that are going beyond what was foreseen. The rural preceptors are promoting it to other preceptors and have even made a video about it. They have also initiated site visits, especially at sites where preceptors may be contemplating pulling out, and at sites where teaching can potentially start. It has a better buy-in by rural doctors because their colleagues have been part of its formation and it is giving students more appropriate exposure to clinical medicine. If preceptors have problems, they like to be able to contact a non-threatening colleague with whom they have an established relationship and who understands working with students in rural communities. When they have recruited enough preceptors, they plan to start training and mentoring new preceptors.

NOSM is the first medical school in the world in which all students undertake a longitudinal integrated clerkship. During their second-to-last year, students live in large rural or small urban communities, excluding Sudbury and Thunder Bay, and learn the same core clinical medicine that has traditionally been taught in block rotations. However, they learn it from the family practice and community perspective, while also gaining exposure to community-based specialist care.

We spent nearly 2 months visiting rural communities and were introduced to various preceptors, students on their 1-month rural medical placements or doing their third year immersion, residents, other medical staff, the people who organise student and resident placements, mayors and various other key people. An expectation has arisen that NOSM will provide every rural community with the physicians they need, and that this will fix their health problems. On our travels, it soon became obvious that even after the 12 years that NOSM had existed, this is not yet happening in some of the more remote rural areas. It takes a minimum of 8 years for a general practitioner (GP) to graduate in Canada — 10 years in New Zealand. Larger population areas such as Sudbury, Sault Ste. Marie and Thunder Bay have benefitted enormously from NOSM. To be sure, smaller rural communities do benefit from these centres doing well because that is where patients needing specialist care are sent, but if new health workers do not come through to help the workload of rural doctors, they and the communities they serve are tending to pull back and some are no longer teaching. Fly-in communities, especially, have major problems with social issues such as poor housing, lack of healthy food and contaminated water, as well as inter-generational trauma, colonization, addictions, suicide and violence.

A repeated remark from preceptors was that although payment for the work they do is appreciated, their biggest cost is time. For most, the idea of having protected time for teaching doesn't work as the patient workload is not dealt with and just builds up for when they return to it. The ideal way to provide quality teaching time is to have the community slightly over-supplied with doctors. This enables doctors to develop special interests including becoming better teachers and researchers. Some doctors accept lower incomes to enable this to happen

Table 2. Factors influencing whether to choose a rural career

Preceptors we met described three main factors that influence students in deciding whether to work in rural or remote communities:
1. A positive experience during students' rural placements. This includes: (a) working with inspiring teams (b) enjoying the best of what their area has to offer
2. Being equipped with the skills necessary to make students feel confident and appreciated
3. Other family and social commitments and aspirations. Where students feel 'at home'

(eg at two of the clinics we visited, the doctors had decided to divide their Group Funding between more doctors than the formula allowed for), but other practices are not able to get enough doctors, let alone an over-supply. Retention of health workers who are fulfilled in what they are doing is a great drawcard for recruiting. A good teaching centre enables learners to discover how fulfilling it is to work in a rural community and to develop competence and confidence with working away from urban supports (Table 2).

In New Zealand, medical schools are only engaged in undergraduate training. Initially, I therefore did not show much interest in the NOSM residency programme, as I expected that this was just hospital-based work experience, like our house surgeon years. But the residency programmes are also run by medical schools and NOSM largely caters for the training in Northern Ontario. It was trainees at this postgraduate level that rural preceptors saw as being the most important. The more remote rural areas complained that too few residents are being given enough exposure to them to become confident working there. By exposing all learners in a family medicine programme to a range of rural practices, some discover that they enjoy it, but would not have discovered this if they had only been exposed to urban rotations. Residents who spend sufficient time in rural areas develop the skills to work in either a rural or an urban centre, whereas graduates who have only urban training are not usually capable of working in a rural practice.

What can we learn from NOSM?

In New Zealand, many rural GPs are approaching retirement. At the same time, more work that used to be done in hospitals is being managed in the community, and there is also a growing number of patients with chronic health problems. How can we produce an adequate number of graduates who will be equipped for and wanting to work in rural communities? Most of our graduates currently have only a small taste of general practice and little rural experience, so it is not surprising that few depart the familiarity of urban hospital jobs. That is where most feel at home and they are excited by the advancing technologies that we expect them to excel in if we get sick. But primary care, which should be enabling people to maintain health, is being overlooked, despite its potential to reduce health costs.

Do we need a special medical school like NOSM that trains students from, in, and for rural areas, or can our existing medical schools develop programmes to reverse the current trend to specialisation? Auckland and Otago have excellent staff in their general practice departments, but they are facing an uphill battle in teaching hospitals that provide most of their training in urban areas to students coming from urban schools. Neither university has a rural department or rural professorial positions, and in Auckland, the Department of General Practice and Primary Health Care is located 10 km away from the main medical school campus. The potential of connecting to rural Māori through Waikato University and using Waikato University's research skills remains untapped.

There are two aspects of rural medical education that can get confused the first is equipping students to work in rural areas, but the second is that it has great potential for all students. This reason for rural training does not necessarily produce more rural doctors, but does at least produce a greater awareness of issues for rural patients. The third-year integrated clinical clerkship at NOSM is following a curriculum to produce doctors, not just rural doctors. Students who learn through block rotations may forget a lot of what they learnt at early rotations by the end of the year, whereas students doing an integrated clinical clerkship follow patients right through their encounters with the health system and learn about multiple systems at the

same time. Their knowledge of all these systems continues to grow throughout the year and their understanding of their patients exceeds that of students doing block courses because they see patients repeatedly over the year. In addition, students get more personalised mentoring in rural practices. In New Zealand, medical schools recognise the benefits of this style of training, but currently, Otago's Rural Immersion and Aucklands Pukawakawa programmes can only be offered to a minority of students in their fifth year of study. New Zealand's medical schools have also initiated rural interprofessional training, but again, this needs far greater recognition, development and expansion. To build the capacity of medical school programmes, universities need to work together to provide training material remotely to students which, as we saw in Canada, also improves IT opportunities for rural practices as a side-effect.

Our Canadian experience stressed to us the need for a significant proportion of house surgeons to train in rural communities. In New Zealand, District Health Boards (DHBs) employ house surgeons and this produces a disincentive for rural training, as DHBs focus can be on getting cheap labour for their hospitals. There is certainly no incentive for them to lobby rural practices. The base of rural preceptors needs to grow, but preceptors are not offered any payment or help with supplying and equipping an extra consulting room or with finding accommodation, let alone there being any strategies to compensate for time spent teaching. With many rural GPs reaching retirement age, it is getting harder to find people to take on the extra load of teaching. One solution is to encourage older GPs to let postgraduate trainees do more clinical work while they step back and devote more time to teaching, mentoring, developing the training curriculum, directing research and encouraging trainees to find more effective ways to reach the communities where they have spent much of their working lives.

Going further

Rural health workers and key people in rural communities need to see the potential of rural education for trainees and patients. They need to start waving their flags to show what they have to offer rather than just responding to the urban academics' ideas of what and how students should be taught. I believe the New Zealand government needs to create a new body to pick up this enthusiasm and coordinate it to ensure the development of excellent training centres. A new, rural-focused organisation should promote training for the whole team of health professionals that our rural communities need, not just for doctors. It should integrate programmes from secondary school through to postgraduate training. The expertise of the different urban institutions needs to be brought together and encouraged to support rural-based training institutions if a programme is to be developed that will have a significant effect on our disadvantaged communities. With more exposure to rural communities, more trainees are likely to choose a rural career provided they have positive experiences and that their training makes them competent and confident. For students who choose an urban career, their rural training should give them an improved integration of their medical knowledge, greater empathy with underprivileged patients, improved appreciation of the social determinants of health and improved understanding of the rural patients who they will see in their urban centres.