

## Tracking Study of NOSM Medical Learners: Where do they practice?

The Centre for Rural and Northern Health Research (CRaNHR) and the Northern Ontario School of Medicine (NOSM) are collaborating on a study that tracks NOSM's medical learners during their medical education and into the workforce. A previous issue of *Research in FOCUS on Research* described study methods, provided demographic characteristics and information on the choice of medical discipline by undergraduate medical students. In this issue, we provide some answers to the following questions:

- Will NOSM medical learners practice in medically underserved regions such as those in rural and Northern Ontario?
- Will they practice in the smaller communities?
- How will learners organize their practices? Will they join Family Health Teams? Set up solo practice?

To answer these and other questions, we have been tracking learners since NOSM's charter class started in 2005.

### Methods

NOSM learners are invited to participate in the study upon entering the undergraduate or postgraduate medical education program at NOSM. Participation is voluntary and the study methods, including the questions that we ask of participants, have been approved by the Research Ethics Boards at Laurentian University and Lakehead University.

Learners are surveyed at Entry into, Midway through and shortly before Exit from the undergraduate medical education program. Learners are surveyed at Entry and Exit from their postgraduate medical education programs and in the first few years when the learners begin fully licensed medical practice (**Exhibit 1**). Response rates for our surveys average 85% for undergraduate medical learners and 50% for postgraduate medical learners.

In the following sections, we share data on learners who have studied at NOSM for their undergraduate medical education, postgraduate medical education or both.

This issue of *Research in FOCUS on Research* is written by John C. Hogenbirk, Margaret G. Delmege and Patrick Timony. This FOCUS issue is based on research titled "Multi-Year Tracking Study of the Students and Graduates of the Northern Ontario School of Medicine" conducted by the Centre for Rural and Northern Health Research (CRaNHR) – Laurentian with the support of the Northern Ontario School of Medicine. The research has been funded by the Ontario Ministry of Health and Long-Term Care since 2005. The views expressed in this FOCUS are those of the authors and do not necessarily reflect the views of the Ontario Ministry of Health and Long-Term Care or the Northern Ontario School of Medicine.

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### Exhibit 1: Study Cohorts and Survey Timing

Study Cohort (Year of Entry into UG Program)	Medical Education/Practice Year					
	UG Y1	UG Y2	UG Y4	PG Y1	PG Y2	Full Practice
2005	✓	✓	✓		✓	✓*
2006	✓	✓	✓		✓	✓*
2007	✓	✓	✓	✓	✓	✓*
2008	✓	✓	✓	✓		
2009	✓	✓	✓	✓		
2010	✓	✓				
2011	✓	✓				
2012	✓					
2013	✓					
Number in Study	538	410	282	268	166	131

Legend: UG=Undergraduate, PG=Postgraduate, Y=Year

\* For those who graduated as Family Physicians, certified by the College of Family Physicians of Canada (CFPC)

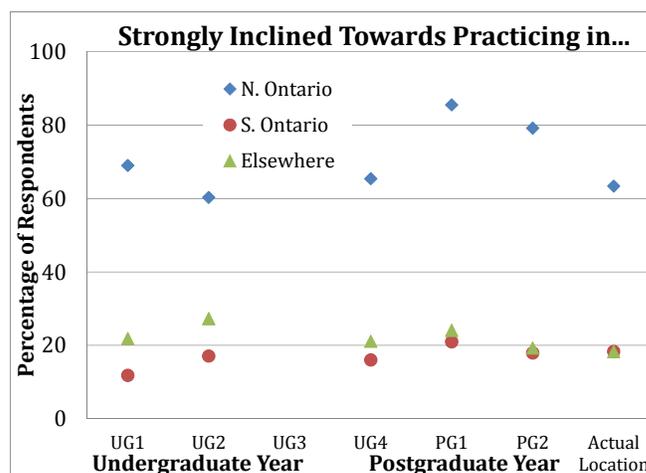
CRaNHR's surveys provide information on whether learners intend to practice in Northern Ontario and in smaller communities as well as information on how they plan to organize their practice (e.g., Family Health Teams). The geographic location of practicing physicians comes from our surveys as well as from publicly available data provided by the College of Physicians and Surgeons of Ontario and by medical regulatory colleges in other provinces and territories.

### Geographic Region

NOSM medical learners, whether they be in the undergraduate or postgraduate program are strongly inclined to set up their practice in

Northern Ontario right from the start of their medical education (**Exhibit 2**). During undergraduate medical education, 60-69% of survey respondents intended to locate their medical practice in Northern Ontario. Percentages are higher during postgraduate training, averaging 79-86%. Data from three cohorts indicate that 63% of family physicians who had trained at NOSM for their undergraduate or postgraduate medical education (or both) had located their practice in Northern Ontario.

**Exhibit 2: Intended and Actual Location of Medical Practice: Geographic Region**



The percentage of learners who intended to practice in southern Ontario varied from 12 to 21% during their medical education. In October 2013, 18% of practicing family physicians had established their practices in southern Ontario. Similar percentages of respondents plan to set up or have established their actual practice outside of Ontario.

Note that data are from different cohorts and different number of cohorts. Note also that learners could choose more than one intended location during medical training and therefore these percentages add up to more than 100%.

## Size of Community

During their medical education, 29-54% of survey respondents are strongly inclined to practice in smaller sized communities of 25,000 or fewer people (**Exhibit 3**). After graduation, 23% of family physicians locate their practices in these communities.

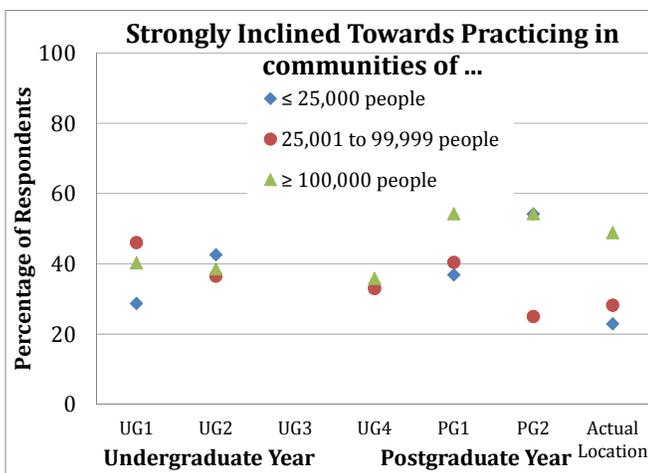
Approximately 25-46% of learners plan to practice in small to mid-sized cities of 25,001-99,999 people. After becoming fully licensed, 28% of family physicians practise in these communities.

Urban centres of 100,000 or more people are the intended practice location for 36-54% of respondents. Approximately 49% of family physicians locate their practice in urban areas.

The majority (51%) of fully licensed family physicians who had trained at NOSM for their undergraduate, postgraduate medical education or both have located their practices in non-urban areas—23% in the smaller towns and 28% in small to mid-sized cities.

Note that data are from different cohorts and that learners could choose more than one intended location during medical training.

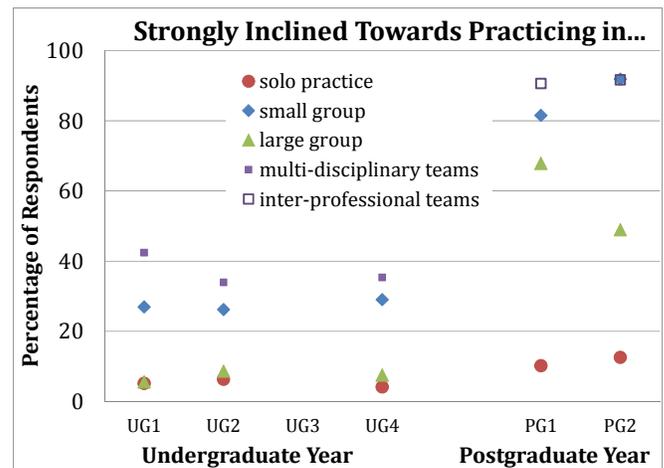
**Exhibit 3: Intended and Actual Location of Medical Practice: Population Size**



## Practice Arrangement

During their undergraduate studies, most learners are strongly inclined to practice in multi-disciplinary team practices (e.g., Family Health Teams) (34-42%) or in small groups (26-29%) (**Exhibit 4**). The vast majority of postgraduate learners are strongly inclined towards interprofessional team practice (e.g., Family Health Teams, Community Health Centres) (91-92%) or small group practice (82-92%).

**Exhibit 4: Intended Medical Practice Arrangement**



Large group practice arrangements increased in popularity, from an average of 7% of the undergraduate survey respondents to an average of 58% of the postgraduate family medicine respondents. Overall, solo practice is chosen by fewer than 15% of survey respondents during their medical education.

Preliminary data show that most (>65%) postgraduate learners who are in training to become family physicians certified by College of Family Physicians of Canada or specialists certified by the Royal College of Physicians and Surgeons of Canada (e.g., pediatricians) prefer small group practices or interprofessional team practices.

Preliminary data also show that solo practice is preferred by more postgraduate learners who are in training to become Royal College specialists (35%) relative to those in training to become family physicians (<15%).

Note that data are from different cohorts and that learners could choose more than one practice structure during medical training.

### **NOSM Medical Learners Serving Northern Ontario**

NOSM medical learners are strongly inclined to practice in Northern Ontario and evidence from the first three cohorts of family practitioners suggest that they do establish their practices in Northern Ontario.

In addition, inclination towards practice in smaller communities is strong during undergraduate and postgraduate medical education. After becoming fully licensed in family medicine, over half of NOSM-trained physicians have located their practice in communities outside of major urban centres,

practising in towns and small to mid-sized cities.

There is also an inclination towards multidisciplinary, interprofessional or small group practice. This inclination became stronger as learners progressed through their medical education and some early anecdotal evidence suggests that many of the recently graduated family physicians have joined interdisciplinary teams or small group practices.

Evidence from the tracking study shows that NOSM's medical learners are inclined towards practising in non-urban areas of Northern Ontario and, indeed, many have already located their practice in towns and small to mid-sized cities. In conjunction with findings reported in the FOCUS issue on learner demographics and choice of medical discipline, the findings described in this issue show that NOSM's graduating physicians are on their way to helping fulfil NOSM's social accountability mandate to provide medical service in geographically distant and culturally diverse communities of Northern Ontario.

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