

Economic Contributions of the Northern Ontario School of Medicine

The Northern Ontario School of Medicine (NOSM) began operations in 2002 and saw its charter class graduate in May 2009. Currently, 32 new medical students are accepted each year at Laurentian University in Sudbury and 24 at Lakehead University in Thunder Bay. In addition to providing undergraduate medical education, NOSM coordinates several postgraduate and professional programs, some of which existed in northern Ontario prior to the founding of the new medical school.

NOSM was created with the support of northern communities, health care organizations and universities, and expectations are high that NOSM will bring many benefits to these stakeholders, as well as to northern Ontario in general.

NOSM's model of "distributed medical education" has led to the direct participation of over 70 large and small communities across northern Ontario in its teaching and research programs. This issue of *Research in FOCUS on Research* looks at the short-term effects of all of NOSM's new and inherited programs on the economies of Sudbury and Thunder Bay, on other selected communities, and collectively on the economy of northern Ontario. Another issue of *Research in FOCUS on Research* examines the social impact of NOSM on northern communities and institutions.

Spending by NOSM

NOSM receives revenue from the provincial government, students, research agencies and other sources. In the fiscal year 2007–2008, NOSM had expenses of slightly over \$38 million (excluding amortization of capital assets). Of that, 95% was spent in northern Ontario. Expenditures in selected communities by NOSM (including salaries and non-salary items like bursaries, honoraria, research expenses, etc.) are shown below:

NOSM spending (in thousands of dollars) in northern Ontario communities in 2007–2008

Sudbury	\$16,560
Thunder Bay	\$15,213
Sault Ste. Marie	\$671
North Bay	\$555
Timmins	\$506
Kenora	\$319
Sioux Lookout	\$237
Other communities	\$2,224
Total	\$36,285

This issue of *Research in FOCUS on Research* is based on the study titled *Exploring the Socio-Economic Impact of the Northern Ontario School of Medicine*, conducted in 2009 by the Centre for Rural and Northern Health Research, Laurentian University and Lakehead University.

The research was commissioned by the Northern Ontario School of Medicine with support from the Ontario Ministry of Health and Long-Term Care.

The interpretations and conclusions expressed here are those of the authors and do not necessarily represent the views of the ministry, the two universities or NOSM.

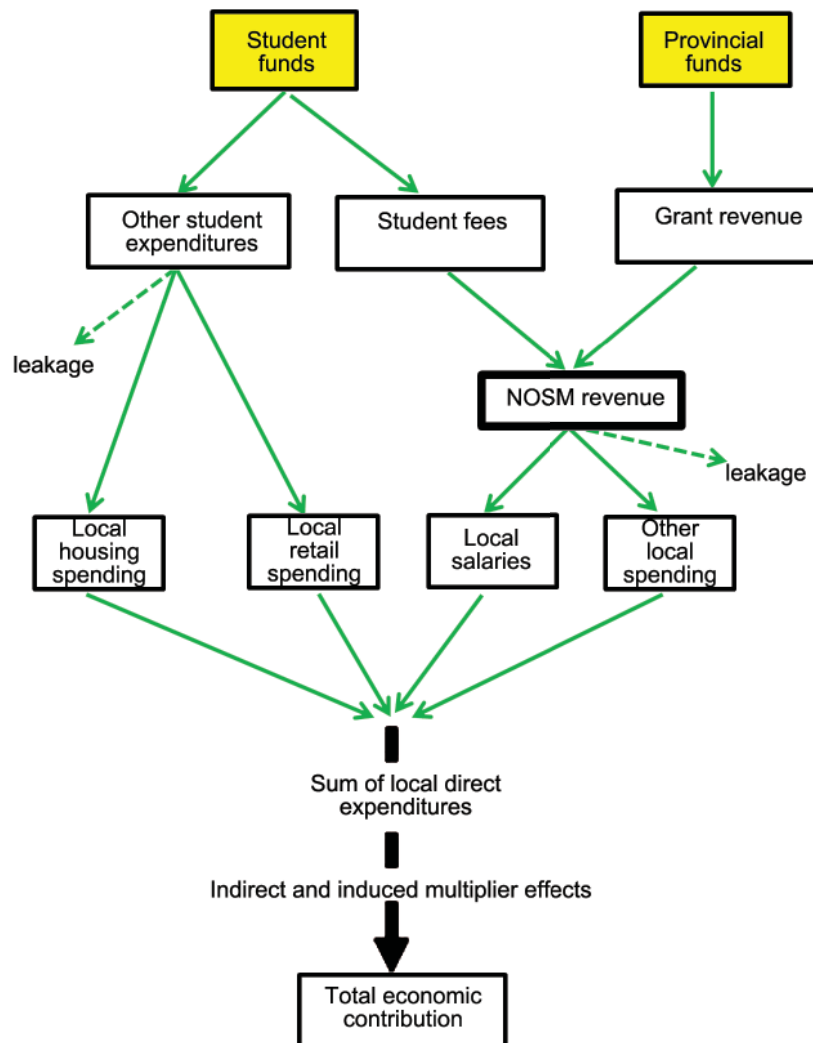
Spending by Undergraduate Students

In addition to money flowing into the communities directly from NOSM, communities are the beneficiaries of money spent by students for housing (estimated average, \$4,000 per year per student) and other local costs (estimated average, \$4,154 per year per student). Except for spending by third-year undergraduates, who are placed in many smaller communities for eight months for their clerkship, this spending occurs primarily in the school's home communities of Sudbury (43% of total) and Thunder Bay (32%). The table (right) is based on spending in 2007–2008 but has added estimates projected for the 2008–2009 year, when all four years of the undergraduate medical education program are in operation.

Estimated undergraduate student spending (in thousands of dollars) in northern Ontario communities in 2008–2009

Sudbury	\$421
Thunder Bay	\$315
Sault Ste. Marie	\$53
North Bay	\$53
Timmins	\$35
Kenora	\$18
Sioux Lookout	\$18
Other communities	\$70
Total	\$983

Sources and Flows of NOSM-Related Expenditures



The Multiplier Effect

The economic contribution from NOSM and from the students to the northern Ontario economy is actually greater than the amounts shown in the above tables. Once the money is in the communities, it will be re-spent, stimulating wider economic activities. To get a truer picture of the cumulative contribution of the initial spending, economists calculate how much more economic activity will result. This is called the multiplier effect. This study used two different multiplier formulas – one on the low side and one on the high side – to give a range of likely economic impact (see table below).

Estimated economic contribution (in thousands of dollars) of NOSM in northern Ontario communities in 2007–2008

	Low estimate	High estimate
Sudbury	\$30,395	\$34,810
Thunder Bay	\$26,710	\$30,902
Sault Ste. Marie	\$1,157	\$1,367
North Bay	\$935	\$1,123
Timmins	\$784	\$957
Kenora	\$424	\$535
Sioux Lookout	\$279	\$368
Other communities	\$2,341	\$3,120
Total	\$63,025	\$73,182
Total based on regional multiplier	\$67,078	\$81,984

Because some of the spending identified above as happening in the smaller communities actually “leaks” to larger centres, the multiplier is lower for the smaller communities than for the larger centres. The sources and flows of NOSM-related spending are shown in the diagram on the previous page.

Thus, the \$37 million of direct spending in a year generates a total of \$63 million to \$73 million to local economies. Some of the money spent in these communities will be re-spent elsewhere in the north, so with a regional multiplier applied, the direct, indirect, and induced economic effects add up to between \$67 million and \$82 million per year.

This economic contribution is in addition to the short-term impact arising from the construction of medical school facilities in Sudbury and Thunder Bay. As well, economic contribution would be expected to grow as NOSM expands its medical and health education program in the future.

More Jobs for the North

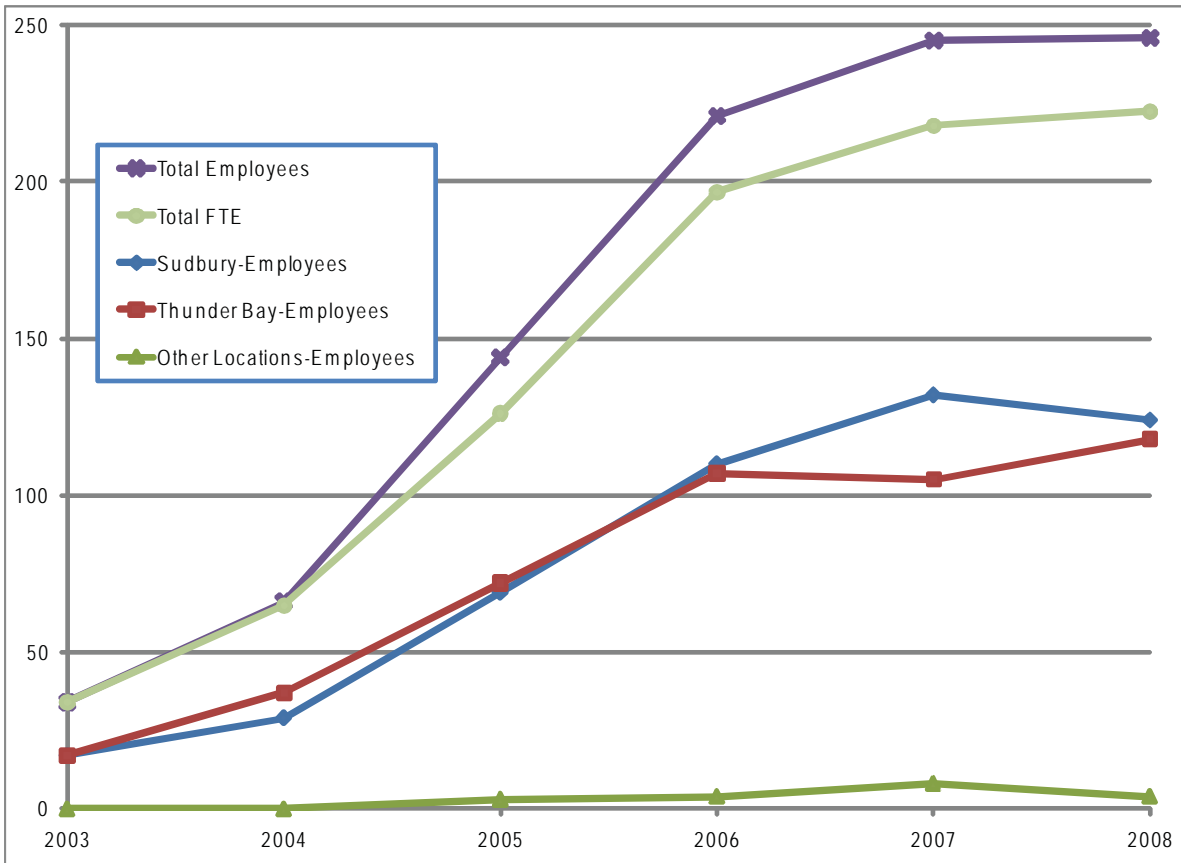
By 2003, NOSM had 34 full-time employees, half in Sudbury and half in Thunder Bay. By September 2005, when the first cohort of students arrived, there were 144 full-time employees. By 2007–2008, the number of employees had stabilized at 245, the equivalent of 223 full-time jobs, almost all located at the host universities in Sudbury and Thunder Bay (see figure on next page). In addition, there were 10 Site Administrative Coordinators hired by local health care organizations in various communities to coordinate the third-year clerkships.

Assuming that the multipliers for employment are the same as the multipliers for spending, then these 233 jobs grow to between 418 (low multiplier) and 511 (high multiplier) full-time equivalent positions, including the regional multiplier.

The majority (56% to 71%) of NOSM’s employees are support staff. The number of senior administration positions has increased over the years, but their percentage of the total number of positions gradually decreased from 29% to 15%. Faculty positions account for 6% to 11% of the total number of employees.

In addition to those counted as NOSM employees, many clinicians in northern Ontario serve as teachers, preceptors, and members of various committees. During 2008–2009, there were over 670 preceptors, who oversaw the placement of learners in 330 clinics or family health teams in over 70 communities, supporting NOSM’s undergraduate and post-graduate programs in medicine and allied health professions.

Number of NOSM Employees



A Positive Impact

The economic model employed in this study estimated that for every dollar that NOSM takes in as revenue, it contributes roughly one additional dollar to the economy of northern Ontario, and for every direct job that the

school provides, it contributes at least one additional job to the region. Its economic contribution is meaningful and pervasive throughout northern Ontario.

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