INTRODUCTION

Medical education is known to be a particularly stressful time for aspiring physicians. Students undergo 3-4 years of intensive formal education with the goal of preparing them for the ultimate responsibility of caring for patients in residency. Although the pressures of matching to residency, acquiring a breadth of knowledge, and managing holistic personal health are well-documented and expected, financial constraints to medical education are becoming an increasing concern. The financial toll of medical training is predominantly driven by an unprecedented increase in medical tuition fees. Medical students in Ontario cite increasing debt levels upon graduation as a major source of stress (1), yet the government has failed to show affirmative action. An urgent call is being put forward to implement a freeze on medical tuition rates and to restructure OSAP and line of credit debt repayment schedules. This paper assesses the financial and societal impact of three proposals being made by the OMSA to the provincial government.

HISTORY OF TUITION INCREASES

Ontario set a precedent for drastic increases in tuition in May 1998, when the Tory government deregulated increases in tuition for professional programs such as Medicine and Dentistry (2). Over a 3 year period, from 1997 to 2000, tuition rates for 5 Ontario medical schools went up by an astounding 116%, compared to just 13% at other Canadian medical schools (Figure 1). Since then, tuition rates at Ontario medical schools have steadily risen at a rate of about 5% per year (3), compared to an inflation rate of 1.87% over the same period (4). Tuition for Ontario medical school students currently sits at an average of $26,221, and is expected to surpass $30,000 by 2020 (5) (Figure 2). If tuition increases were frozen for the next four years, this would result in $8009 in savings per student (5).

Proposal 1: Place an indefinite freeze on medical school tuition in response to the disproportionate historical rise in tuition above the national inflation rate. This will result in savings of $8009.
In addition to the rising cost of tuition, students in Ontario incur an average annual cost of living of $25,552, which covers basic needs such as transportation, food, and housing (5). Further to this, third and fourth year medical students incur annual living costs of $29,992 and $33,052, respectively, with the marked increase being attributable to non-tuition unavoidable fees such as CaRMS (Canadian Resident Matching Service) and electives applications (Figure 3).

In total, medical students are expected to incur annual expenses of $51,743 after one year, and $229,628 after four years (at an annual inflation rate of 2%).
The primary cause for financial strain is the inherent mismatch between medical school costs and the cash inflows with which students cover these costs. Medical students generate an average $16,046 in cash inflows, most of which is through OSAP grants and a final year medical student stipend (Figure 4). This means that the rest of their medical school costs must be covered through their OSAP loans and a line of credit, both of which accrue interest. Students are granted up to $8400 in OSAP loans per year (5). This loan, coupled with their expected cash inflows, leads to a difference of $28,276 in first year expenses that students must cover with their line of credit. After four years, the average medical student is expected to graduate with $34,622 in OSAP debt and $129,658 in line of credit debt (Figure 5).

### Cost of Living

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Books and supplies</td>
<td>400</td>
</tr>
<tr>
<td>Housing</td>
<td>9,600</td>
</tr>
<tr>
<td>Food</td>
<td>4,800</td>
</tr>
<tr>
<td>Cell Phone</td>
<td>720</td>
</tr>
<tr>
<td>Clothing/Laundry</td>
<td>1,605</td>
</tr>
<tr>
<td>Utilities and Internet</td>
<td>1,020</td>
</tr>
<tr>
<td>Transportation</td>
<td>1,800</td>
</tr>
<tr>
<td>Personal Expenses</td>
<td>1,020</td>
</tr>
<tr>
<td>Insurance</td>
<td>84</td>
</tr>
<tr>
<td>Medical association fees</td>
<td>22</td>
</tr>
<tr>
<td>Entertainment</td>
<td>1,050</td>
</tr>
<tr>
<td>Travel</td>
<td>1,401</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>2,000</td>
</tr>
<tr>
<td><strong>Total for Year 1/2</strong></td>
<td><strong>25,522</strong></td>
</tr>
</tbody>
</table>

### Non-Tuition Unavoidable Fees

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 3</td>
<td></td>
</tr>
<tr>
<td>Electives applications</td>
<td>2,400</td>
</tr>
<tr>
<td>Electives accommodations</td>
<td>2,000</td>
</tr>
<tr>
<td>Electives travel</td>
<td>2,000</td>
</tr>
<tr>
<td><strong>Total for Year 3</strong></td>
<td><strong>29,922</strong></td>
</tr>
<tr>
<td>Year 4</td>
<td></td>
</tr>
<tr>
<td>CaRMS application</td>
<td>500</td>
</tr>
<tr>
<td>CaRMS travel/accommodations</td>
<td>6,000</td>
</tr>
<tr>
<td>LMCC fee</td>
<td>1,030</td>
</tr>
<tr>
<td><strong>Total for Year 4</strong></td>
<td><strong>33,052</strong></td>
</tr>
</tbody>
</table>

*Figure 3. Projected annual costs of living for Ontario medical students*
Of major concern for medical students is that their residency salary is primarily used to cover their annual cost of living and is often not enough to cover annual interest repayments. The average first year resident in Ontario earns $57,967 (6), which comes at a point in their life where major investments such as buying a home contribute to even further debt. The average amount of interest that has to be paid on accumulated OSAP and line of credit after graduation are $1904 and $4149 per year, respectively (Figure 6). Assuming that residents are unable to pay down their interest, they would accumulate $24,213 in interest alone after 4 years in residency (Figure 7). Thus, postponing interest repayments until after residency, when students having the financial flexibility to pay it down, would result in dramatic savings.

![Figure 4](image1.png)

**Figure 4.** Projected income statement for self-funded Ontario medical students

![Figure 5](image2.png)

**Figure 5.** Individual student debt figures upon graduation from medical school
Proposal 2: Postpone both OSAP and line of credit interest repayment until after residency, when students have the financial flexibility to afford these payments. This would result in savings between $7617 (OSAP component) and $24,213 (both OSAP and line of credit).

<table>
<thead>
<tr>
<th>Interest Payment Calculations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Osap</td>
</tr>
<tr>
<td>Federal Loan Interest Rate</td>
</tr>
<tr>
<td>Prov. Loan Interest Rate</td>
</tr>
<tr>
<td>Fraction of federal OSAP</td>
</tr>
<tr>
<td>Fraction of provincial OSAP</td>
</tr>
<tr>
<td>Osap Interest Rate</td>
</tr>
<tr>
<td>LOC Interest Rate</td>
</tr>
<tr>
<td>Annual Loc Interest</td>
</tr>
<tr>
<td>Annual OSAP Interest</td>
</tr>
<tr>
<td>Annual Loc and OSAP Interest</td>
</tr>
</tbody>
</table>

*OSAP loans are comprised of 70% federal loan and 30% provincial

**Figure 6.** OSAP and line of credit interest rate payment projections (as at June 2018)

**Figure 7.** Interest savings resulting from postponed interest repayment

**GOVERNMENT RESPONSE**

In acknowledgment of high student debt levels, the Ontario government offers a Resident Loan Interest Relief Program, where medical residents are not required to pay principal or interest on their OSAP debt throughout the duration of their residency (7). In return, the resident must promise to provide physician services in Ontario for five years following their medical residency. If the resident breaches their Return of Service (RoS) agreement, they incur a financial penalty and are required to pay any interest that would have otherwise accumulated. Although this program provides relief to some students, it comes with many limitations; many Ontario medical students complete their residency outside of the province, it places a strict geographical limitation on physicians who may be hoping to settle elsewhere, there is no promise that these residents will find employment in Ontario, and it runs the risk of an even greater increase in debt if they breach their agreement. With respect to residency prospects, Ontario has the largest number of unmatched medical graduates in the country. Since 2014, there has been a disproportionate increase in the number of unmatched Ontario graduates relative to the rest of Canada (Figure 8) (8). This trend further compounds the trouble medical students may have with debt repayment, and lessens the desired effect of the Return Loan Interest Relief Program.
Several years ago, the OMSA approached members of provincial government at Queen’s Park asking for an increase in OSAP loans to match the rising tuition costs (9). This would drastically benefit students who are reliant on lines of credit, as they are required to pay interest on their line of credit while they are in medical school. For the average medical student graduating with $131,158 owed on their line of credit, they are required to pay $9992 in interest throughout their 4 years spent in school (Figure 9). Unfortunately, the provincial government was reluctant to make changes to OSAP loan limits for medical students. While the government does offer a 30% off student grant, maximum OSAP loan allotment per year is capped at $8400, creating a dramatic compounding effect of unaffordable line of credit interest payments while students are still enrolled in school (10). Increasing the OSAP loan threshold for medical students also provides a financial incentive for the government, as they would be able to receive more in interest payments after student graduation at a very low risk of default.

In recent years, the government has made notable changes in OSAP to make education more accessible for students in a breadth of disciplines - Undergraduate students whose families earn less than $50,000 annually are eligible for free tuition, and doctoral students are granted a lifetime limit of up to 400 weeks (or 7.7 years) of OSAP payments (10). Despite these efforts, there continues to be disparity between rising tuition costs and OSAP allowance for medical students. The government’s precedence of adjusting OSAP serves as confirmation that they would and should be receptive to the voice of medical students.

Proposal 3: Allow students to fund their medical school years entirely through OSAP loans. This would offer savings of $10,056 in line of credit interest payments while students are in medical school. The government would simultaneously benefit in the form of increased interest payments coming from a low risk investment.

**SOCIETAL IMPACT**

The impact of rising tuition levels not only has negative financial impacts at the individual student level, but also has broader systemic impacts that are negatively shaping the national healthcare landscape. At the forefront of these concerns is the drastic shift seen in medical student demographics. In 2000, following the deregulation of tuition, it was found that the proportion of Ontario medical students coming from families earning less than $40000 dropped from 22.6% to 15%, compared to just a 0.2% decrease in
other provinces that had not experienced tuition deregulation (11). In the same period, a study at Western University found that their average medical student’s family income was $140,000, compared to $80,000 just three years prior (12). These findings are in alignment with historical US data, which showed that as tuition fees rose in the 1970s and 1980s, the socioeconomic status of enrolling medical students decreased (13). Finally, the 2007 National Physicians’ Survey has found that increasing tuition levels has resulted in a lack of diversity of student backgrounds (14).

Another implication of increased debt load revolves around the primary care crisis. As it stands, primary care is in high need but low supply. A potent factor contributing to this deficit is the relatively lower average salary primary caregivers receive compared to other specialties. While there is limited data in Canada, researchers from the US have begun to draw a relationship between medical school debt and deterrence from the primary care specialty (15). In a 2014, retrospective analysis from 136, 232 physicians who graduated US medical schools between 1988 and 2000, physicians that graduated at higher debt had lower odds of practicing in primary care (16). The influence of financial drivers such as increasing debt levels will negatively impact physician services being offered in primary care, thereby worsening the quality of care that the population receives. Rising medical school debt has also been thought to contribute to the rural physician shortage. Research shows that students from rural and peripheralized communities have a larger likelihood of returning to these communities after their training (15). This premise is largely why medical schools such as NOSM and Western favor incoming applicants from rural Ontario. However, students from rural parts of Canada have significantly larger education debt at entry compared to students from urban centers and are more likely to come from families with a lower socioeconomic status and parental income. These factors make it less likely for such students to pursue a medical education in the face of rising tuition fees and a greater financial burden on their families (17). Overall, unregulated increases in tuition may result in a deterrence that disproportionately effects candidates—that are perfectly qualified—who would most likely serve areas of Ontario and Canada in need.

Irrespective of the impact that tuition has on the socioeconomic status of medical students, several studies have shown that medical students come from more affluent families. These families tend to be more educated, wealthy, and underrepresent Canadian minority groups such as Blacks, Aboriginals, and rural Canadians (18). By financially decreasing access to medical education, physicians are becoming distanced from the Canadian population, making it more difficult to supply Canadians with relatable and compassionate caregivers. Current efforts to address the lack of diversity within the medical profession fail to address root causes such as financial barriers. For example, there are specified programs established within Ontario to serve as a patchwork repair system to deal with diversity issues, such as UofT’s Black Student Application Program (19). As tuition continues to grow at an unprecedented rate, more of these specified admissions/financial assistance programs may become warranted, which would further complicate the admissions process rather than treat the actual cause.

**PROPOSAL SUMMARY**

To summarize, the OMSA suggests the following resolutions to alleviate the medical student debt burden:

1. Place an indefinite freeze on medical school tuition in response to the disproportionate historical rise in tuition above the national inflation rate. This will result in savings of $8009.
2. Postpone both OSAP and line of credit interest repayment until after residency, when students have the financial flexibility to afford these payments. This would result in savings between $7617 (OSAP component) and $24,213 (both OSAP and line of credit).
3. Allow students to fund their medical school years entirely through OSAP loans. This would offer savings of $10,056 in line of credit interest payments while students are in medical school. The government would simultaneously benefit in the form of increased interest payments coming from a low risk investment.
REFERENCES

5. Financial Model