Taking the pulse: medical student workforce intentions and the impact of debt

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Abstract

Aim To define what factors are important to medical students as they make decisions about where they will live, work and train after graduation, and to explore the effects of student debt

Method A mixed quantitative-qualitative questionnaire to all 5th and 6th year medical students residing in New Zealand in 2008. Questions related to students’ perspectives of the workforce, debt, and workforce intentions.

Results 372 medical students completed the survey (55% response rate from those in NZ at the time of the survey). Fifty-two percent of students planned to leave New Zealand at the start of PGY2 or 3. The average debt was $75,752. Thirty-six percent said their debt would influence their choice of vocation, 39% their choice of location of work in New Zealand and 64% their choice of locality of work in the world. Twenty-six percent and 25% believed that they would be valued by the hospital management and government respectively. Students most commonly cited financial incentives to work overseas and to locum.

Conclusion Strategies to counter emigration trends in the New Zealand health workforce need an holistic approach. Debt levels need to be countered, and the perceived lack of value of graduates needs to be rectified.

The current New Zealand health workforce faces many challenges. The WHO Report Can New Zealand Compete,\(^1\) published in May 2008, highlighted the heavy reliance on overseas-trained doctors to supply our medical workforce, and the vulnerable position New Zealand holds in the 21st Century global doctor market. It is claimed New Zealand has the highest proportion of overseas-trained doctors in the OECD.\(^2\)

Not only is New Zealand importing overseas-trained doctors, but it seems to be exporting locally-trained doctors: the same report identified that loss of doctors in the early postgraduate years was of significant concern, with 28% of New Zealand-trained doctors leaving the country by PGY3.\(^1\) Indeed, a 2006 study suggested that 66% would consider leaving within 3 years of graduating.\(^3\)

Much emphasis has been placed on the factors and conditions that drive doctors in training offshore. Ongoing industrial action, and increasing acknowledgement of the extent of the medical workforce crisis has led many to speculate on the drivers for medical emigration—both from New Zealand to offshore, particularly Australia, and from contractual employment to locum work.

Student debt has been identified as having a significant impact on life choices of doctors in training. In 2001, a series of articles was published focusing on medical student debt in New Zealand.\(^4-6\) It was estimated that mean debt at that time was...
above $60,000 per student, and it was noted that there was a significant correlation between the predicted size of debt and students’ intentions to practise medicine overseas.4

A 2002 survey of medical students in Canada was published around the same time suggesting that increasing levels of debt results in more medical students taking money into consideration when choosing specialty and location of practice.7 Another has recently shown that medical students are able to accurately predict income by specialty from an early stage of training and have a negative perception of income in general practice, an area of shortage in New Zealand.8

The latest figures to estimate the amount of debt are from the University of Auckland in 2008. It was found that one-third of graduating medical students owe more than $75,000 to the Government.9 Moore et al published two papers in 2006 that showed the total average doctors’ debt at graduation was $65,206.3,10 Twenty-four percent of students owed more than $88,875, with a total of 92% having some form of debt.

The same paper showed 42% of students said their debt had influenced their decision when and whether to have children, and 40% reported that their debt would influence their career choice. Fifty-five percent of respondents had considered leaving the country because of the student loan debt.

As a result of such studies, debt and remuneration are increasingly being recognised as major contributors to the loss of New Zealand doctors offshore. Over the past 5 years we have seen an increase in the trainee intern grant, the introduction of interest-free student loans, and a voluntary bonding scheme—all of which have acknowledged the importance of debt. However, there has been little work on what impact internal values, early medical socialisation, professional attitudes, industrialisation and the changing nature of the training environment have had on senior medical students’ perceptions about working and training in New Zealand.

The aim of this study is to define what factors are important to medical students as they seek to make their decisions about where they will live, work and train after graduation. The study also aimed to update figures on student debt, and further identify its influence.

Methods

Study design—A three-part survey was developed by the authors firstly to capture current perceptions and attitudes of senior medical students about living, working and training in New Zealand, and secondly to identify which factors are the most significant determinants in deciding to stay in New Zealand or practise overseas in the short, medium and long term.

The survey comprised sections on students’ perspectives of the workforce, their financial status, and their workforce intentions. Response modes included Yes/No, option-select, text and numerical input, and 5-point Likert scales. Respondents were also invited to submit free-text answers.

The survey was piloted by university academic staff and modified where necessary. It was conducted in identical hard-copy and online versions. The online version was developed using Quask FormArtist (v5.1) software and hosted on the website the New Zealand Medical Students’ Association. Online surveys could only be completed once. Both versions were confidential and there was no way of identifying which students participated.

All 5th- and 6th-year students enrolled in medical schools in New Zealand were invited via email to complete the questionnaire in October/November 2008. Students on overseas placements at the time were not included. All students were informed of the online questionnaire via student email lists.
Ethical approval for all participants was obtained from the University of Otago Human Ethics Committee.

Statistical analysis—Results from the online survey were converted from Quask to Microsoft Excel 2007 software and merged with the results from the manually-entered hard-copy survey. The two spreadsheets were collated. Not all respondents answered every question and missing responses were treated as absent data in all analyses.

SPSS (v16.0.1) software was used for analyses comparing responses by entry type, gender, ethnicity, relationship status, and year level. Categorical variables were compared using Chi-squared tests. Continuous variables were compared with analysis of variance or by Pearson correlation coefficients as appropriate.

Results

Participants—372 of 681 (55%) eligible medical students responded. The response rate was the same from 5th year as 6th-year students. The mean age of respondents was 24 years (range of 21–44; standard deviation 3.2) and 58% were female. Gender, ethnicity, school of medical study, and entry type were representative of the medical student population. Ten percent of students identified themselves as international students. Thirty-five percent of students identified themselves as being in a long-term relationship, and 9% were married. There were no significant associations with ethnicity or relationship status in the results.

Intentions—94% of students planned to work overseas at some point in their career. Nine percent planned to leave immediately after graduation, and 52% planned to do so at the start of PGY2 or PGY3 (see Figure 1).

Figure 1. Time of intended move overseas
Thirty percent of students planned to leave for fewer than 2 years, 40% for between 2 and 5 years, and 24% planned to leave for greater than 5 years of which 30% planned to leave permanently.

Australia was stated as the most popular destination, followed by UK/Ireland. There were no significant differences between those who identified themselves as international students and other respondents.

Thirty-nine percent of students intended to locum. Of these students, 65% intended to do so for less than 2 years and 32% for 2 to 5 years.

Those students who intended to go overseas were more likely to locum (142/328 or 43%) than those who did not intend to go overseas (3/24 or 13%; Chi-squared=7.56, p=0.006).

**Perceptions**—73% percent of respondents believed that New Zealand is a good place to work. Only 62% (38/61) of those who entered medical school after a prior degree believed it was a good place to work compared with 75% (234/311) who entered from the other routes (Chi-squared=14.744, p=0.022).

Ninety-five percent of respondents believed that New Zealand is a good place to live, although international students and those who gained alternative entry were less likely to state this (62/73 or 85%) compared with school leaver/health science entrants and university graduates (291/299 or 97%; Chi-squared=21.869, p=0.001).

There was no association between those who believed New Zealand was a good place to live and when they planned to leave the country. However, those students who disagreed that New Zealand was a good place to work were more likely to leave New Zealand for longer: 43% of students who disagreed that New Zealand is a good place to work intended to work outside New Zealand for longer than 5 years, compared with 19% of students who agreed that New Zealand is a good place to work (Chi-squared=11.11, p=0.011).

Sixty-six percent of respondents believed that they would be valued by their medical colleagues in the workforce. Female students (32/217 or 15%) were more likely to believe they would be undervalued by their medical colleagues than male students (9/155 or 6%; Chi-squared=11.437, p=0.003).

Sixty-four percent believed they would be valued by the public, 26% believed they would be valued by hospital management, and 25% believed they would be valued by the Government. Those who felt undervalued by the government were more likely to locum (74/158 or 47%) compared with those who felt valued (26/93 or 28%; Chi-squared=13.112, p=0.011).

Sixty-three percent of students believed the New Zealand clinical environment to be supportive, with 13% believing that it is unsupportive. On the other hand, 57% of students believed the Australian clinical environment to be supportive, with 1.6% believing that it is unsupportive.

**Finance**—89% of students said they were going to graduate with debt. Their average expected debt at graduation was $75,752. Older students had more debt (r=0.16, p<0.01). International students had on average more debt (mean $104,000; SD
60,000), followed by university graduate entrants (mean $86,000; SD 25,000),
“Others” (mean $86,000; SD 48,000), and then school leavers/Health science entrants
(mean $68,000; SD 30,000; F=11.028, p<0.001).

Thirty-two percent of students always or often worry about their debt, and 34%
sometimes do so. The amount of worry was positively correlated with the amount of
debt (F=5.645, p=0.000) (Table 1).

Table 1. Mean debt levels (in thousands of dollars) categorized by level of worry
about debt

<table>
<thead>
<tr>
<th>How often do you worry about your debt?</th>
<th>Mean (thousands of dollars)</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>52.4</td>
<td>31.1</td>
<td>22</td>
</tr>
<tr>
<td>Rarely</td>
<td>71.8</td>
<td>42.6</td>
<td>69</td>
</tr>
<tr>
<td>Sometimes</td>
<td>72.4</td>
<td>29.0</td>
<td>123</td>
</tr>
<tr>
<td>Often</td>
<td>84.6</td>
<td>33.9</td>
<td>88</td>
</tr>
<tr>
<td>Always</td>
<td>89.5</td>
<td>39.9</td>
<td>30</td>
</tr>
</tbody>
</table>

Thirty-six percent of students responded that their debt influenced their choice of
vocation more than a small amount (i.e. a moderate amount, a large amount a great
amount, or would determine choice), whilst 39% said it would influence their choice
of locality of work within New Zealand; 64% said debt influenced their probability of
doing locum work, and 58% said debt influenced their choice of locality of work in
the world.

Students were asked whether having less debt would change their decision regarding
vocation, location and taking up locum work. Thirteen percent agreed that having less
debt would affect their choice of vocation, and a further 20% stated it might affect
their choice. Eighteen percent agreed that having less debt would affect their choice of
locality in New Zealand, and a further 24% stated it might affect their choice. Thirty-
nine percent agreed that having less debt would affect their choice of locality in the
world, and a further 25% stated it might affect their choice. Forty-one percent agreed
that having less debt would affect their probability of locuming, and a further 29%
agreed that it might affect their choice.

The greater the debt students had, the more likely they were to say that having less
debt would influence their choice of locality of work in the world (F=7.816, p=0.000),
in New Zealand (F=4.148, p=0.017), and their choice of career (F=7.191, p=0.01)
(Table 2).

Those students not intending to work overseas were more likely to say that less debt
would not affect their choice of locality in the world (16/24 or 67%) compared with
those who did intend to work overseas (116/348 or 34%; Chi-squared= 13.281, p=0.004).

Table 2. Mean debt per student responses as to whether or not less debt would influence career choice, choice of career locality in NZ, and choice of career locality in the world (in thousands of dollars)

<table>
<thead>
<tr>
<th>If your debt were smaller, would it influence your...</th>
<th>Yes</th>
<th>No</th>
<th>Maybe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>potential career choice</td>
<td>91.9</td>
<td>48.7</td>
<td>46</td>
</tr>
<tr>
<td>geographic location of work in NZ</td>
<td>85.7</td>
<td>37.5</td>
<td>62</td>
</tr>
<tr>
<td>geographic location of work in the world</td>
<td>82.7</td>
<td>36.8</td>
<td>135</td>
</tr>
</tbody>
</table>

Free text responses—Students were asked what factors would make them more likely to go overseas. Ninety-four percent or 351 students provided a response. Fifty-six percent stated financial motivation, 46% stated reasons of greater experience and/or lifestyle, 45% stated greater job prospects, training and/or educational opportunities, 21% stated better working environments, conditions and/or support, and 18% stated reasons related to family, partners, and/or friends.

They were also asked to provide reasons as to why they may locum. Forty-two percent or 154 students provided a response. Eighty-four percent stated financial motivation, 27% stated reasons of lifestyle, family and/or flexibility, 19% stated wanting to travel as a reason, and 14% stated wanting to gain greater and/or broader experience.

Discussion

Despite believing that New Zealand is a good place to live, this study confirms that a high number of our medical graduates plan to leave the country by PGY 3. Nearly a quarter of graduates plan to leave for longer than 5 years. Our data suggests that less are intending to leave by PGY 3, however, in comparison to the 2006 Moore study.³

Eighty-nine percent of students said that they were going to graduate with debt, the average of which was $75,752. There was no significant difference between debt
accumulated by male or female students unlike the 2008 Auckland study that suggested that males had bigger loans.\textsuperscript{9}

Several advocacy groups have suggested that these high levels of debt are responsible for the large shift overseas. Although often met with some cynicism, the results of this study make it hard to suggest that it is not a contributing factor. Fifty-six percent of respondents cited financial motivations for going overseas, and 84\% cited financial motivations for locuming.

Addressing debt and providing greater financial incentives in the workforce, therefore, could not only have a positive impact on career choices and locality of work, but could also reduce the number of doctors who locum and who thereby currently absorb an alarming proportion of this country’s medical workforce expenditure.

It is tempting to seek a single causative factor for this emigration trend but the cause is likely to be multi-factorial. This may frustrate those designing policy as it is much easier to do so with single factor objectives, however a more holistic look at the workforce may allow for some change.

It is important to look at whether or not, for example, our workforce feels valued. Responses suggest that medical graduates are not expecting to be greatly valued in the health system. Although nearly two-thirds of students thought they would be valued by the public and medical colleagues, there is still a third with a significant driver to look elsewhere to work.

A 2002 review concluded there was significant correlation between how valued an employee felt and job satisfaction, positive mood, commitment, performance, and lessened withdrawal behavior.\textsuperscript{11} It is therefore crucial that our doctors feel valued for their satisfaction and the employer’s.

What is more alarming is that only a quarter of students thought that they would be valued by hospital management or by the Government. This is not only disappointing but has significant implications as those who felt undervalued were more likely to indicate they would opt for low-commitment high-paid locum jobs rather than a RMO position at a district health board. This has implications for specialist training, and long-term commitment to New Zealand and the health workforce. Certainly, both the Government and hospital management groups need to explore ways to improve these perceptions of being undervalued.

The free text responses were similar to the Moore study\textsuperscript{3} and showed that there are reasons for people leaving the country that cannot be countered at the time; forty-six percent stated reasons of greater experience and/or lifestyle, and 18\% stated reasons related to family, partners, and/or friends. It is therefore important that we not only focus on medical graduate retention, but also recruitment of New Zealand graduates who have already gone overseas. Our graduates will have a drive to gain wider experience, and this is ultimately beneficial to the New Zealand public. They should not be punished for gaining this experience but rather encouraged to return.\textsuperscript{12}

This study begins to provide insight into some of the factors behind the current workforce crisis. The representativeness of the study could have been improved with a higher response rate, however the demographics of respondents were reflective of
the general survey population and therefore it is believed responses can be taken as representative.

There was potential bias in responses hosting the survey on the NZMSA website, as the Association was at the time of the survey actively in discussion with the Ministry of Health about medical student debt. Students may have provided answers that were more likely to help these discussions. Students were instructed not to complete the paper survey if they had done so online, however there was potential for people to submit two responses this way.

It would be ideal to construct a follow-up study of these students during their early postgraduate training years to determine whether perceptions are translated into actions.

Ultimately it is the young who become the backbone of the established workforce with time. It is therefore important that they are valued. Resources, time and money must be invested not only in their undergraduate education, but their ongoing learning and commitment to the New Zealand public—“If we wish our future health professionals to work for the public good, then is it unreasonable for them also to expect that the public might be good to them?”

Competing interests: None known.

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