



Career choices of New Zealand junior doctors

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Abstract

Aims To report career preferences of New Zealand junior doctors, determine what factors influenced their choice, and determine at what stage of their career that choice was made.

Methods A structured questionnaire with anonymous replies was sent to final year medical students as well as to junior doctors in their first to fourth postgraduate year. Questions were based around choice of future career, timing, and certainty of this choice and the factors influencing it.

Results Of the 400 questionnaires distributed, 256 (64%; 95%CI: 59–69%) were returned. The most popular career choice was medicine (44%; 95%CI: 38–50%), followed by surgery (34%; 95%CI: 29–40%), general practice (30%; 95%CI: 25–36%), paediatrics (29%; 95%CI: 24–35%), and obstetrics & gynaecology (20%; 95%CI: 16–25%). The choice of a career was mostly based on interest in that specialty. Most (70%; 95%CI: 64–75%) final year medical students; and 52% (95%CI: 41–63%), 45% (95%CI: 33–60), and 17% (95%CI: 9–33%) of doctors in postgraduate year 1, 2, and 2+ respectively; had not made a definite career choice. Sixty-nine percent (95%CI: 63–75%) of respondents stated that they plan to work overseas, mostly to travel (70%; 95%CI: 63–77%) and to further their professional training (58%; 95%CI: 59–73%).

Conclusions Career aspirations of New Zealand junior doctors were similar to those reported by overseas studies. Adequate guidance throughout medical training and opportunity to gather work-experience over several specialties should be encouraged.

In the last 10 years, most countries have seen increasing shortages of hospital junior doctors. Changing population demographics and alterations in the practice of medicine have resulted in relative shortages of various specialty groups. As a result, workforce-development programmes have been created in most Western countries with considerable focus on the areas of medical education, workforce planning, role development, and variations in practice.

Over the past 30 years, many groups have studied the career aspirations of varying levels of medical graduates.^{1–14} Literature exists on career preference dating back to the 1970s¹ with surveys covering choices made at pre-medical school⁸ to postgraduate level. Changing work practices, lifestyle factors, and education/service delivery result in variations in career survey results over time.

Over 50% of the New Zealand hospital workforce is staffed by doctors trained in countries other than New Zealand, which makes the issue of workforce planning acutely important in the delivery of healthcare in this country. While two studies,^{6,11} have looked at the career aspirations of medical students in New Zealand, no review has looked at postgraduate career choices.

In this cross-sectional overview, we surveyed final medical year students, early postgraduate junior doctors, and registrars in Auckland to determine their intended career path and those factors that primarily affected their decision process.

Methods

A seven-question survey was distributed between March 2003 and May 2003 by direct mail to junior doctors' work address at hospitals covered by Auckland District Health Board, Waitemata District Health Board, and Counties Manukau District Health Board. Each doctor in postgraduate year (PGY) 1–4 received three copies of the questionnaire and an accompanying letter asking them to fill out one copy of the questionnaire for themselves. This letter also asked their registrar and final year student to fill out the other copies of the questionnaire.

In addition, questionnaires were directly distributed at the major teaching sessions and career information evenings involving junior doctors. The questionnaire was also available on the intra-hospital website (intranet) and a small advertising campaign was conducted.

All questionnaires were anonymous, although respondents were asked their training level and gender. All questionnaires were received and collated by the principle author. Ethics approval was not requested for the study but the questionnaire followed extensive consultation with key stakeholder groups.

Results

Response rate—Of the 400 questionnaires distributed, 271 were returned. Fifteen responses were excluded from analysis for being incorrectly filled out. As shown in Table 1, of the possible 240 PGY 1-4 doctors in the Auckland region, 160 responses were received. This suggests that we sampled more than 60% (95%CI: 54–66) of the doctors in this area.

Table 1. Responses to the questionnaire

Variable	n	%
Final year students	56	21.9
PGY 1	71	27.7
PGY 2	50	19.5
PGY 2+	39	15.2
Registrars	40	15.6
Male*	74	28.9
Female*	70	27.3
Total	256	

*Note that percentages of male and female doctors do not add up to 100% because some doctors failed to specify their gender as requested in the questionnaire; PGY=postgraduate year.

Career choices—Table 2 illustrates the career preferences and level of certainty for each of the major vocational groups. Decisions regarding surgery appear the most “concrete.”

Table 3 showed the favourable responses for major specialties, and compares these between male and female doctors. Results suggest that internal medicine and its related specialties are the most preferred career choice whereas a career in obstetrics & gynaecology is the most undesired. No major gender differences were found, although more female doctors appear to be interested in paediatrics and obstetrics & gynaecology. Of 256 responders, 18 expressed interest in anaesthetics and 11 in radiology; 8 were interested in psychiatry and pathology each.

Ophthalmology and sexual health were favoured by four respondents each, and three doctors wanted to pursue emergency medicine. Two favourable responses were obtained for radiation oncology, research, and management, respectively. One person expressed interest for each of the following specialties: occupational health, microbiology, orthopaedics, intensive care, neurosurgery, public health, sports medicine, and urology.

Table 2. Certainty of career preferences of junior doctors for five major specialties

Variable	Definitely not interested		Probably not interested		Unsure		Possibly interested		Definitely interested	
	n	%	n	%	n	%	n	%	n	%
GP	67	26.2	68	26.6	32	12.5	54	21.1	23	8.9
Surgery	89	34.8	54	21.1	14	5.6	28	10.9	58	22.7
Medicine	38	14.8	33	12.7	49	19.1	67	26.2	49	18
Paediatrics	68	26.6	54	21.1	42	16.4	47	18.4	27	10.5
O&G	101	39.5	52	20.3	32	12.5	31	12.1	20	7.8

GP=general practice, O&G=obstetrics and gynaecology.

Table 3. Numbers (percentages) of respondents who expressed probable or definite interest in mainstream specialties

Variable	Male	Female	Total*	
	n	n	n	%
GP	21	23	77	30
Surgery	27	22	86	33.6
Medicine	40	32	116	44.2
Paediatrics	13	26	74	28.9
O&G	6	24	51	19.9

*Note that the numbers of male and female doctors don't add up to total numbers because some respondents did not specify their gender as requested in the questionnaire; GP=general practice; O&G=obstetrics and gynaecology.

Factors affecting choices—Figure 1 indicates those factors that most affected career choice. Interest in a specialty appears to be most important regardless of career choice. There is some variation between other factors.

Figure 2 records those factors that most influenced the choice of a career. This result appears to favour the influence of prior experience, but results were fairly evenly spread.

Figure 1. Relative importance of factors influencing the choice of different specialties

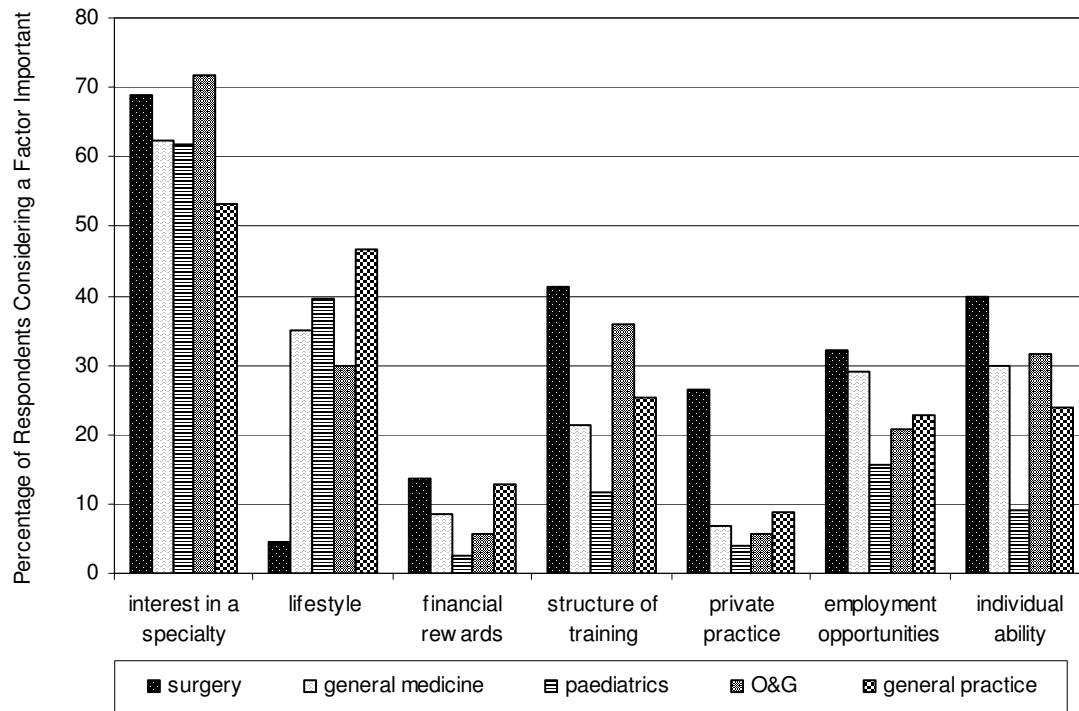
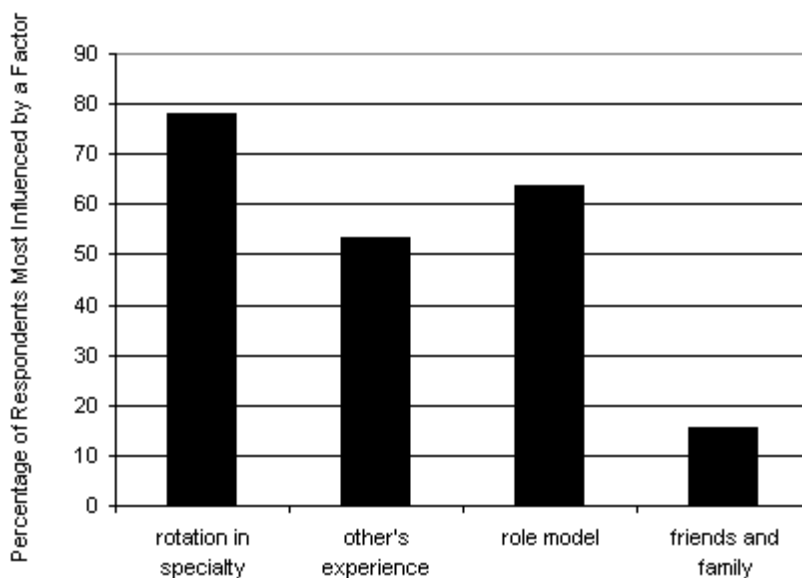


Figure 2. Factors that influence career decisions of junior doctors



Timing of career choice—Out of all respondents, 45% (95%CI: 39–51%) believed they had already made a career choice. The majority of final year students (70%; 95%CI: 64–75%) had not made a definite career decision, and just over half of PGY 1 doctors (52%; 95%CI: 41–63%) were still undecided. After the first

postgraduate year, the number of doctors still undecided on their career path gradually declined, with 45% (95%CI: 33–60%) of PGY 2, 17% (95% CI 9–33) of PGY 2+, and 12% (95%CI: 6–26%) of registrars reporting no definite career choice.

The most common reason—reported by 68% (95%CI: 62–73%) of respondents—for not yet making a career choice was the wish to gain more exposure to a wider range of medical specialties before making a decision. Indeed, almost a third of respondents (29%; 95%CI: 24–35%) stated that they liked many specialties and were finding it difficult to make a choice. About 25% (95%CI: 21–32) stated that part of the reason for not making a definitive decision was because they were considering leaving medicine.

Of the 141 doctors who had chosen their career path, 44 (31%; 95%CI: 24–39%) doctors appear to have done so while still in medical school; 23 (16%; 95%CI: 11–23) in their first postgraduate year; and the rest in their second and subsequent postgraduate years.

Overseas expectations—Of the 256 responders, 177 (69.1%; 95% CI: 63–75%) stated that they plan to work outside of New Zealand whereas 60 (23.4%; 95%CI: 19–29%) stated that they would not work overseas. The rest (5.9%; 95%CI: 4–9%) were still undecided. It should be noted, however, that the question did not distinguish long-term work preferences from a short experience overseas.

Interest in travel (70%; 95%CI: 63–76%) and professional training (58%; 95%CI: 51–65%) were the most common reasons listed for going overseas. None of the respondents listed financial gain as a sole reason for leaving New Zealand, but 36% (95%CI: 25–49%) of junior doctors listed it as part of the reason. About 20% (95%CI: 15–26%) of respondents wanted to work overseas for family reasons.

Discussion

The most popular career choice amongst junior doctors was internal medicine, although their career path was usually not chosen until the second postgraduate year.

Many studies have been published internationally regarding career choices of medical students and early postgraduate doctors.^{15–23} The changing nature of healthcare delivery, societal values, and medical school selection suggest that factors influencing career choices among medical professionals vary rapidly over time and between healthcare systems.

Although extensive literature exists internationally on career choices of junior doctors, we believe our study is only the third study specifically looking at New Zealand doctors.^{6,11} Although only the Auckland area was sampled, it is likely that the results are fairly representative of New Zealand as a whole. Indeed, in the previous Otago Medical School-based studies, the authors surveyed the future career intentions of medical students in New Zealand.

Results of those studies are very similar to our study—ranking internal medicine, surgery, and general practice as the preferred career intentions of medical students. It should be noted, however, that those studies listed financial reasons as the most important reason to leave New Zealand secondary to the high levels of student debt. Our study revealed fewer financial motives for overseas career aspirations.

This may be explained by the improving financial rewards given to hospital doctors in New Zealand over the past 3 years as well as the reduced financial concerns felt by doctors who are more advanced in their career path.

All studies, including our study, suffer from the subjective nature of such surveys as well as the change in attitudes of this flexible workforce. Indeed, Lambert et al⁵ showed that (overall) 74% of respondents retained their Year 1 career choice by Year 3, thus indicating approximately a quarter of doctors changed their minds regarding career choices in their early postgraduate years.

In a previous paper by the same group,¹⁰ it is interesting to note that 18 years after their selection, 58.9%, 78.2%, and 86.6% of doctors' career choices matched career aspirations held at years 1, 3, and 5 postgraduation respectively. These results would suggest that the career aspirations and choices of medical students, and indeed those in their first 3 years postgraduation, are extremely flexible, with approximately one-quarter to one-half of those students ultimately ending up in different careers. About a third of the respondents from our study who appeared to have made their career decisions did so while still in medical school. Based on other studies, it is likely that a considerable proportion of these choices will change over time.

Taken together with the length of medical training, this would indicate that extrapolation of data from all career choice surveys must be done with extreme caution before making major changes to healthcare delivery. Similarly, however, the results would suggest the need for continued flexibility in career pathways for junior doctors as well as better career guidance at all stages of a medical career.

This study suggests that internal medicine and its related sub-specialties are the most popular choice of junior doctors in New Zealand, followed by surgery, paediatrics, and general practice. When reviewing the vocational register from the Medical Council of New Zealand,²⁴ the preferences for vocational specialties by junior doctors rank in a similar order to the number of vocational specialists registered by the council. In other words, the greatest number of junior doctors wished to do those specialties which had the greatest number of jobs available in New Zealand.

Despite the uncertainty of career choices made by junior doctors at this level (as listed in the above comments), it is still of interest to note that doctors are either 'strongly favourable' or 'unfavourable' with regards to surgical career choices whereas responses for other specialties show less polarity. This result, taken together with the studies of Gelfand et al² and Ranta et al³ would suggest a perceived image of surgery as a vocation that either does or does not have a strong career match with individual junior doctors. This might imply that if a recruitment problem existed with regards to surgery, then what must first be tested, is the perception of junior doctors for this vocation and the accuracy of this perception.

The earlier New Zealand medical student studies support the high degree of financial concern (mainly in regards to student debt acquired at medical schools).^{6,11} In our study, the junior doctors' stated interest in a specialty was of greatest importance in career selection, and financial matters appeared to have little impact. Again, these results are consistent with those in overseas studies.^{1,4}

All studies support the conclusion that lifestyle factors are significantly important in vocational choice. Unfortunately, we could not find any previous relevant New Zealand data to investigate whether there has been a relative increase in the influence of lifestyle choice, as may be expected through changing societal values.

Workforce planning for the future needs to include those factors that influenced career choice the most. It would appear fairly evenly split between having “individual role models” or having either a “personal experience of working in a specialty”, or “reports from others working in a specialty.” This would support the suggestion that recruitment to specific vocations must ensure not only early training experience but also work experience prior to training within a specialty. These results also correlate well with the findings that showed high importance of having an individual mentor in assisting with vocational career selection.

At present, New Zealand offers clinical rotations of 3 months in the early postgraduate years, which limits the exposure to specialties to four per year. Internationally, the length of early postgraduate clinical work experience is quite variable, varying from 2-week experiences in some North American hospitals to 6-month exposure in United Kingdom hospitals. The results from our study strongly suggest that most junior doctors are still undecided about their career paths when they leave medical school. Moreover, most doctors felt that clinical exposure to a wide range of specialties is essential in aiding the decision process. Therefore, a current system that includes shorter rotations for the first few postgraduate years appear to be ideal for career selection.

Conclusions

In summary, this New Zealand survey has reiterated international results regarding career selection choices of junior doctors. Adequate career guidance should be provided to evolving healthcare professionals throughout all levels of training. Caution should be practised by all healthcare planners wishing to reduce flexibility for length of training inherent in current systems.

While a large number of doctors remain undecided or change their mind about career choices in their early postgraduate years, most are still attracted to the high volume specialties and remain focussed on their academic interest in a specialty and pursuit of a rewarding career.

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References:

1. Lambert TW, Goldacre MJ, Edwards C, Parkhouse J. Career preferences of doctors who qualified in the United Kingdom in 1993 compared with those of doctors qualifying in 1974, 1977, 1980 and 1983. *BMJ*. 1996;313:19–24.
2. Gelfand DV, Podnos YD, Wilson SE, et al. Choosing general surgery. *Arch Surg*. 2002;137:941–7.

3. Ranta M, Hussain SSM, Gardiner Q. Factors that inform the career choice of medical students: implications for otolaryngology. *J Laryngol Otol.* 2002;116:839–41.
4. Parkhouse J, Ellin DJ. Reasons for doctor's career choice and change of choice. *BMJ.* 1988;296:1651–3.
5. Goldacre MJ, Lambert TW. Stability and change in career choice of junior doctors: postal questionnaire surveys of United Kingdom qualifiers of 1993. *Med Educ.* 2000;34:700–7.
6. Gill D, Palmer C, Mulder R, Wilkinson T. Medical students career intentions at the Christchurch School of Medicine. The New Zealand Wellbeing, Intentions, Debt and Experience (WIDE) survey of medical students pilot study. Results Part II. *N Z Med J.* 2001;114:465–7.
7. Lambert TW, Goldacre MJ, Turner G. Career choices of United Kingdom medical graduates of 1999 and 2000: questionnaire surveys. *BMJ.* 2003;326:194–5.
8. Babbott D, Baldwin DC, Jolly P, Williams DJ. The stability of early specialty preferences among US medical school graduates in 1983. *JAMA.* 1988;259:1970–5.
9. Kruijthof CJ, Van Leeuwen CD, Ventvogel P, et al. Career perspectives of women and men medical students. *Med Educ.* 1992;26:21–6.
10. Davidson JM, Lambert TW, Goldacre MJ. Career pathways and designations 18 years on among doctors who qualified in the United Kingdom in 1977: postal questionnaire survey. *BMJ.* 1998;317:1425–8.
11. O'Grady G, Fitzjohn J. Debt on graduation, expected place of practice, and career aspirations of Auckland Medical School students. *N Z Med J.* 2001;114:468–70.
12. Garrett EA, Dietrich AJ. Students' evolving attitudes toward family medicine and specialty choices at one medical school. *Acad Med.* 1991;10:625–7.
13. Lambert TW, Goldacre MJ. Career decisions seven years on among doctors who qualified in the United Kingdom in 1988: postal questionnaire survey. *BMJ.* 1998;317:1429–31.
14. Goldacre MJ, Davidson JM, Lambert TW. Career choices at the end of the pre-registration year of doctors who qualified in the United Kingdom in 1996. *Med Educ.* 1999;33:882–9.
15. Martin FM, Boddy FA. Patterns of career choice and professional attitudes among medical students. In: Harnos P, ed. *Sociology and medicine.* Keele: University of Keele; 1962, p21–32 (Sociological Review Monograph No. 5).
16. Royal Commission on Medical Education 1965-8. Report. London: HMSO; 1968 (Cmnd 3569).
17. Egerton EA. Medical undergraduate career preference enquiry. *Ulster Med J.* 1979;48:43–61.
18. Schumacher CF. Personal characteristics of students choosing different types of medical careers. *J Med Educ.* 1964;39:278–88.
19. Furnham AF. Medical students' beliefs about nine different specialties, *BMJ.* 1986;293:1607–10.
20. Hutt R. Doctors' career choice: previous research and its relevance for policy-making. *Med Educ.* 1976;10:463–73.
21. Last JM, Stanley GR. Career preferences of young British doctors. *Br J Med Educ.* 1964;39:278–88.
22. Hutt R, Parsons D, Parsons R. The determinants of doctors' career decisions. Brighton: Institute of Manpower Studies, University of Sussex; 1979. (Report to the Department of Health and Social Security and the Scottish Home and Health Department.)
23. Egerton EA. Survey of Queen's University medical graduates. *Ulster Med J.* 1980;49:112–25.
24. Medical Council of New Zealand. Medical Register. Available online. URL: <http://www.mcnz.org.nz/> Accessed January 2006.