

National report on students graduating medical school in New Zealand in 2013-2017

October 2018

Prepared by:

The New Zealand MSOD Steering Group.

University of Otago:

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University of Auckland:

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Division of Health Sciences
Te Wāhanga Mātau Hauora



**MEDICAL AND
HEALTH SCIENCES**

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ISSN 2537-7833

www.otago.ac.nz/NZMSOD

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OTAGO MEDICAL SCHOOL
Te Kura Hauora o Ōtākou



**MEDICAL AND
HEALTH SCIENCES**

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EXECUTIVE SUMMARY

This report provides the findings from the Medical Schools Outcomes Database (MSOD) Exit Questionnaires of New Zealand (NZ) medical students for the five years from 2013 to 2017. A total of 1,786 from a possible 2,292 graduating students (78%) responded.

Over this time there has been stability in the age of the graduates (median 24 years, 60% under 25 years) as well as the proportion of women (~55%). In 2017 94% of responders were NZ citizens, reflecting the recent government increase in NZ student numbers. The self-identified ethnicity of domestic students has remained relatively constant.

Around 80% of medical students are satisfied or very satisfied with their medical programme.

The majority access loans and undertake paid employment. Over 97% intend to work in NZ: 60% in major city, 30% in a regional centre or large town, and the remainder in smaller areas or overseas.

Over the past five years the first preference for specialty shows very little change, with the top three being Surgery, General Practice, and Internal Medicine. Between 55% and 60% of graduating students selected one of these three as their first-choice preference. In 2017, rural and remote medicine was the first preference of 4.5% of students. It should be noted that there is still considerable uncertainty in career choice at graduation.

Training and work environments influence future specialty preference with the highest ranked factors being *atmosphere/work culture typical of the discipline, influence of consultants/mentors* and *general medical school experiences* in addition to *interest in helping people*. On the other hand, the least influential factors include *financial costs of vocational training, financial costs of medical school education and/or debt, perceived financial prospects* and *perceived prestige of the discipline*.

INTRODUCTION

The Medical Schools Outcomes Database and Longitudinal Tracking Project (MSOD) is an on-going collaborative longitudinal study conducted by Medical Deans Australia and New Zealand (MDANZ).

The project has been operating in New Zealand (NZ) since 2005 and has appropriate ethics committee approvals. The purpose of MSOD is to gain a better understanding of the factors that influence career choices from selection to medical school, and throughout the continuum of training, to inform policy decisions of the various stakeholders in medical education and training.

In NZ, students are invited to complete surveys at entry to their medical school/programme (Year 2) through the Commencing Medical Students Questionnaire (CMSQ); at the end of their final year of medical school through the Exit Questionnaire (EQ); and one, three and five year(s) after completion of their medical studies (PGY1, PGY3, PGY5). In coming years, data will be collected at eight years after completion of medical studies.

This report presents summary and trend data for five years (2013 to 2017) of graduating students from the University of Auckland and the University of Otago. For more details on response rates and methods, see Appendices A and B. Note, not all students answered each question so the numbers in each table vary.

RESULTS

Demographics

Table 1. Gender of respondents

Gender	2013		2014		2015		2016		2017	
	n	%	n	%	n	%	n	%	n	%
Female	217	58.5%	163	54.5%	202	54.9%	224	53.1%	172	56.2%
Male	154	41.5%	136	45.5%	166	45.1%	198	46.9%	134	43.8%
Total	371	100%	299	100%	368	100%	422	100%	306	100%

Table 2. Age range of respondents*

Age group	2013		2014		2015		2016		2017	
	n	%	n	%	n	%	n	%	n	%
Under 25 years	217	59.1%	182	62.1%	225	60.3%	253	59.5%	186	59.4%
25-29 years	117	31.9%	96	32.8%	119	31.9%	140	32.9%	94	30.0%
30-34 years	24	6.5%	8	2.7%	17	4.6%	22	5.2%	20	6.4%
35-39 years	6	1.6%	4	1.4%	10	2.7%	5	1.2%	7	2.2%
40+ years and	3	0.8%	3	1.0%	2	0.5%	5	1.2%	6	1.9%
Total responses	367	100%	293	100%	373	100%	425	100%	313	100%

* Calculated at 30 November in the year surveyed, grouped into five-year age ranges

Table 3. Median age and age range of respondents

Age in years*	2013	2014	2015	2016	2017
Median	24	24	24	24	24
Minimum	22	16	22	17	22
Maximum	47	47	42	42	45

*Age at 30 November of year surveyed.

Table 4. Self-identified ethnicity of domestic students

Ethnicity	2013		2014		2015		2016		2017	
	n	%*	n	%	n	%	n	%	n	%
New Zealand European	196	59.9%	177	63.0%	229	64.5%	266	66.3%	186	60.8%
Māori	28	8.6%	21	7.5%	38	10.7%	60	15.0%	29	9.5%
Pacific peoples	16	4.9%	16	5.7%	19	5.4%	18	4.5%	15	4.9%
Other	118	36.1%	99	35.2%	120	33.8%	131	32.7%	113	36.9%

*Percentages total more than 100% as multiple responses were accepted

Table 5. Citizenship of respondents

Citizenship	2013		2014		2015		2016		2017	
	n	%	n	%	n	%	n	%	n	%
New Zealand citizen	301	82.7%	269	91.5%	335	90.1%	380	90.3%	296	94.9%
New Zealand Permanent Resident	22	6.0%	10	3.4%	19	5.1%	17	4.0%	9	2.9%
Australian citizen	4	1.1%	2	0.7%	1	0.3%	4	1.0%	1	0.3%
Student Visa holder*	28	7.7%	13	4.4%	17	4.6%	9	2.1%	–	–
Temporary entry permit	9	2.5%	–	–	–	–	11	2.6%	6	1.9%
Total	364	100%	294	100%	372	100%	421	100%	312	100%

*Immigration categories changed

[Relationships and dependents](#)

Table 6. Relationship status of respondents

Relationship status	2013		2014		2015		2016		2017	
	n	%	n	%	n	%	n	%	n	%
Not partnered	190	51%	153	51%	187	50%	224	53%	152	49%
Partnered	180	49%	145	49%	187	50%	200	47%	161	52%
Total	370	100%	298	100%	374	100%	424	100%	313	100%

Table 7. Number of children and other dependents

Dependents	2013		2014		2015		2016		2017	
	n	%	n	%	n	%	n	%	n	%
Children										
0	358	96.5%	288	98.3%	352	95.1%	410	96.9%	300	95.9%
1	6	1.6%	1	0.3%	11	3.0%	7	1.7%	6	2.2%
2	6	1.6%	5	1.7%	5	1.4%	4	1.0%	5	1.3%
3 or more	1	0.3%	2	0.7%	2	0.6%	2	0.4%	2	0.6%
Total	371	100%	296	100%	372	100%	421	100%	312	100%
Other dependents										
0	357	96.2%	282	96.2%	347	94.6%	405	96.7%	303	97.1%
1	10	2.7%	8	2.7%	12	3.3%	14	3.3%	7	2.2%
2	4	1.1%	2	0.7%	5	1.4%	–	–	1	0.3%
3 or more	–	–	1	0.3%	3	0.9%	–	–	1	0.3%
Total	371	100%	293	100%	367	100%	419	100%	312	100%

Employment and sources of income

Table 8. Sources of income while completing medical degree

Source of income	2013		2014		2015		2016		2017	
	n	%*	n	%	n	%	n	%	n	%
Government assistance (e.g. student allowance)	195	52.6%	166	55.1%	199	53.1%	221	52.0%	166	52.9%
Government Student Loan	290	78.2%	249	82.7%	320	85.3%	358	84.2%	262	83.4%
Paid employment	231	62.3%	197	65.4%	236	62.9%	253	59.5%	217	69.1%
Personal loan	85	22.9%	44	14.6%	68	18.1%	60	14.1%	45	14.3%
Savings/Trust fund	87	23.5%	75	24.9%	67	17.9%	115	27.1%	75	23.9%
Scholarship	191	51.5%	156	51.8%	169	45.1%	193	45.4%	154	49.0%
Supported by family	266	71.7%	202	67.1%	271	72.3%	302	71.1%	215	68.5%
Other	9	2.4%	5	1.7%	6	1.6%	4	0.9%	4	1.3%

*Percentages total more than 100% as multiple responses were accepted

Table 9. Hours of paid employment undertaken while completing medical degree

Hours per week of paid employment	2013		2014		2015		2016		2017	
	n	%	n	%	n	%	n	%	n	%
0	153	41.2%	133	45.4%	120	35.5%	190	44.9%	116	37.1%
1-4	95	25.6%	52	17.7%	71	21.0%	78	18.4%	68	21.7%
5-9	56	15.1%	56	19.1%	78	23.1%	65	15.4%	55	17.6%
10-14	35	9.4%	33	11.3%	35	10.4%	57	13.5%	47	15.0%
15-19	15	4.0%	7	2.4%	11	3.3%	13	3.1%	9	2.9%
20-24	12	3.2%	6	2.0%	7	2.1%	14	3.3%	9	2.9%
25-29	1	0.3%	–	–	3	0.9%	2	0.5%	1	0.3%
30+	4	1.1%	6	2.0%	13	3.8%	4	0.9%	8	2.6%
Total	371	100%	293	100%	338	100%	423	100%	313	100%

Satisfaction with medical programme

Table 10. Satisfaction with medical programme

Level of satisfaction	2013	2014	2015	2016	2017
Average satisfaction	4.0	4.0	3.9	3.9	3.9
Median satisfaction	4	4	4	4	4
Percent <i>Satisfied</i> or <i>Very satisfied</i>	79.8%	79.7%	79.3%	78.9%	82.2%
Percent <i>Dissatisfied</i> or <i>Very dissatisfied</i>	4.8%	5.0%	6.8%	4.2%	5.5%

Future medical practice

Table 11. First preference of country of future practice

Country	2013		2014		2015		2016		2017	
	n	%	n	%	n	%	n	%	n	%
New Zealand	340	93.9%	290	96.7%	353	94.9%	386	95.5%	306	97.5%
Country other than New Zealand	22	6.1%	10	3.3%	19	5.1%	18	4.5%	8	2.5%
Total	362	100%	300	100%	372	100%	404	100%	314	100%

Table 12. Preferred population centre size of future practice

Population centre size	2013		2014		2015		2016		2017	
	n	%	n	%	n	%	n	%	n	%
Major city	229	64.9%	200	69.2%	226	61.7%	238	59.2%	192	61.3%
Regional city or large town	93	26.3%	67	23.2%	104	28.4%	131	32.6%	91	29.1%
Town	19	5.4%	17	5.9%	24	6.6%	24	6.0%	19	6.1%
Small town	7	2.0%	3	1.0%	6	1.6%	4	1.0%	8	2.6%
Not applicable, not intending to work in New Zealand	5	1.4%	2	0.7%	6	1.6%	5	1.2%	3	1.0%
Total	353	100%	289	100%	366	100%	402	100%	313	100%

Table 13. First preference for region of future practice

Region	2013		2014		2015		2016		2017	
	n	%	n	%	n	%	n	%	n	%
Auckland	118	32.6%	124	41.3%	123	33.1%	109	27.0%	107	34.1%
Bay of Plenty	26	7.2%	18	6.0%	40	10.8%	46	11.4%	26	8.3%
Canterbury	43	11.9%	35	11.7%	54	14.5%	44	10.9%	37	11.8%
Gisborne	6	1.7%	3	1.0%	6	1.6%	11	2.7%	5	1.6%
Hawkes Bay	15	4.1%	11	3.7%	15	4.0%	13	3.2%	14	4.5%
Manawatu-Whanganui	6	1.7%	4	1.3%	5	1.3%	19	4.7%	5	1.6%
Marlborough	2	0.6%	2	0.7%	2	0.5%	4	1.0%	1	0.3%
Nelson	10	2.8%	7	2.3%	13	3.5%	12	3.0%	15	4.8%
Northland	15	4.1%	12	4.0%	18	4.8%	20	5.0%	20	6.4%
Otago	9	2.5%	11	3.7%	13	3.5%	18	4.5%	16	5.1%
Southland	4	1.1%	6	2.0%	3	0.8%	5	1.2%	5	1.6%
Taranaki	8	2.2%	9	3.0%	5	1.3%	13	3.2%	8	2.5%
Tasman	–	–	–	–	1	0.3%	1	0.2%	–	–
Taupo*									3	1.0%
Waikato*	22	6.1%	24	8.0%	18	4.8%	21	5.2%	14	4.5%
Wellington region	56	15.5%	24	8.0%	36	9.7%	50	12.4%	29	9.2%
Westland	–	–	–	–	1	0.3%	–	–	1	0.3%
Country other than New Zealand	22	6.1%	10	3.3%	19	5.1%	18	4.5%	8	2.5%
Total	362	100%	300	100%	372	100%	404	100%	314	100%

* Waikato and Taupo were separated in the 2017 questionnaire

[Future medical specialty](#)

Table 14. Decided on future medical specialty

Decided on specialty	2013		2014		2015		2016		2017	
	n	%	n	%	n	%	n	%	n	%
Yes	159	43.3%	142	47.3%	194	51.9%	191	46.7%	158	50.3%
No	208	56.7%	156	52.7%	180	48.1%	218	53.3%	156	49.7%
Total	367	100%	296	100%	374	100%	409	100%	314	100%

Table 15. Certainty of practising in most preferred medical specialty

Certainty	2013		2014		2015		2016		2017	
	n	%	n	%	n	%	n	%	n	%
Absolutely certain	43	12.0%	32	11.1%	45	12.6%	41	10.1%	32	10.5%
Moderately certain	187	52.4%	159	55.0%	203	57.0%	234	57.9%	187	61.3%
Not at all certain	127	35.6%	98	33.9%	108	30.3%	129	31.9%	86	28.2%
Total	357	100%	289	100%	356	100%	404	100%	305	100%

Table 16. First preference of medical specialty irrespective of whether a future medical specialty had been decided (ordered by 2017 ranks)

Specialty	2013		2014		2015		2016		2017	
	n=320		n=280		n=333		n=371		n=279	
	%	Rank*	%	Rank	%	Rank	%	Rank	%	Rank
Surgery	23.8%	1	14.6%	2	18.0%	2	21.3%	1	24.0%	1
General Practice	16.3%	2	25.7%	1	26.7%	1	20.8%	2	20.1%	2
Adult Medicine / Internal Medicine / Physician	14.4%	3	14.3%	3	12.6%	3	14.6%	3	12.5%	3
Anaesthesia	6.3%	6	6.1%	7	8.1%	4	7.8%	4	9.0%	4
Paediatrics and Child Health	9.4%	4	7.5%	4=	6.6%	6	7.0%	5=	7.5%	5
Emergency Medicine	5.0%	7	6.4%	6	6.9%	5	7.0%	5=	6.8%	6
Obstetrics and Gynaecology	7.5%	5	7.5%	4=	5.4%	7	5.1%	7	5.7%	7
Rural and Remote Medicine	1.9%	10	3.2%	8	2.4%	9=	2.4%	9=	3.6%	8
Psychiatry	2.8%	8=	1.4%		2.7%	8	3.5%	8	2.9%	9
Radiology	2.8%	8=	2.9%	9	2.4%	9=	2.4%	9=	1.4%	10=
Ophthalmology	1.6%		2.1%	10=	1.5%		1.3%		1.4%	10=
Sport and Exercise Medicine	1.3%		2.1%	10=	1.8%		0.8%		1.4%	10=
Intensive Care Medicine	1.3%		1.8%		0.6%		0.3%		0.7%	
Pathology	0.9%		0.7%		0.6%		0.3%		0.7%	
Palliative Medicine	0.3%		0.7%		-		0.8%		0.7%	
Non-specialist Hospital Practice	0.6%		-		-		-		0.4%	
Occupational and Environmental Medicine	-		-		-		-		0.4%	
Public Health Medicine	0.3%		0.4%		0.9%		0.8%		0.4%	
Indigenous Health	-		0.4%		-		0.5%		0.4%	
Oral and Maxillofacial Surgery	0.3%		0.4%		0.3%		1.1%		-	
Dermatology	1.6%		1.1%		0.9%		0.8%		-	
Dual Vocational Training Program	-		-		-		0.8%		-	
Addiction Medicine	0.9%		0.0%		0.3%		0.3%		-	
Medical Administration	-		0.4%		0.6%		0.3%		-	
Sexual Health Medicine	0.3%		-		0.3%		-		-	
Rehabilitation Medicine	-		-		0.3%		-		-	
Pain Medicine	-		0.4%		-		-		-	
Radiation Oncology	0.6%		-		-		-		-	
Total	100%		100%		100%		100%		100%	

*Only top 10 ranks given due to small numbers thereafter

Table 17. First preference of medical speciality for those who HAVE decided on future medical speciality (ordered by 2017 ranks)

Specialty	2013		2014		2015		2016		2017	
	n=148		n=138		n=187		n=180		n=153	
	%	Rank*	%	Rank	%	Rank	%	Rank	%	Rank
Surgery	31.8%	1	15.9%	2	21.9%	2	30.6%	1	30.1%	1
General Practice	12.8%	2	26.8%	1	23.0%	1	20.6%	2	20.3%	2
Adult Medicine / Internal Medicine / Physician	8.8%	3	13.8%	3	10.2%	3	11.7%	3	10.5%	3
Anaesthesia	6.8%	4=	3.6%	7=	9.1%	4	5.6%	5	7.8%	4
Paediatrics and Child Health	5.4%	6	5.1%	5	7.5%	5	6.1%	4	5.9%	5
Emergency Medicine	4.7%	7	4.1%	6	4.8%	7	5.0%	6	4.6%	6=
Obstetrics and Gynaecology	6.8%	4=	8.7%	4	7.0%	6	2.2%	8=	4.6%	6=
Rural and Remote Medicine	1.4%		2.9%	10=	1.6%		1.1%		4.6%	6=
Psychiatry	3.4%	9	1.5%		3.7%	8	4.4%	7	3.9%	9
Radiology	4.1%	8	3.6%	7=	3.2%	9	1.7%		2.6%	10
Ophthalmology	2.7%	10=	3.6%	7=	2.1%	10	2.2%	8=	1.3%	
Sport and Exercise Medicine	1.4%		2.9%	10=	1.1%		1.1%		1.3%	
Intensive Care Medicine	1.4%		2.2%		1.1%		0.6%		1.3%	
Pathology	2.0%		1.5%		0.5%		0.0%		1.3%	
Oral and Maxillofacial Surgery	0.7%		0.7%		0.5%		2.2%	8=	-	
Palliative Medicine	0.7%		0.7%		-		1.7%		-	
Dual Vocational Training Program	-		-		-		1.1%		-	
Public Health Medicine	0.7%				1.1%		0.6%		-	
Dermatology	2.7%	10=	0.7%		0.5%		0.6%		-	
Medical Administration	-		-		0.5%		0.6%		-	
Indigenous Health	-		-		-		0.6%		-	
Rehabilitation Medicine	-		-		0.5%		-		-	
Addiction Medicine	1.4%		-		-		-		-	
Non-specialist Hospital Practice	0.7%		-		-		-		-	
Total	100%		100%		100%		100%		100%	

*Only top 10 ranks given due to small numbers thereafter

Table 18. First preference of medical specialty for those who HAVE NOT decided on future medical specialty (ordered by 2017 ranks)

Specialty	2013		2014		2015		2016		2017	
	n=172		n=142		n=146		n=191		n=126	
	%	Rank*	%	Rank	%	Rank	%	Rank	%	Rank
General Practice	19.2%	1=	24.6%	1	30.5%	1	20.9%	1	19.8%	1
Surgery	16.9%	3	13.4%	3	13.2%	3	12.6%	3	16.7%	2
Adult Medicine / Internal Medicine / Physician	19.2%	1=	14.8%	2	15.9%	2	17.3%	2	15.1%	3
Anaesthesia	5.8%	6	8.5%	5	6.6%	5	9.9%	4	10.3%	4
Emergency Medicine	5.2%	7	7.7%	6	9.3%	4	8.9%	5	9.5%	5=
Paediatrics and Child Health	12.8%	4	9.9%	4	5.3%	6	7.9%	6=	9.5%	5=
Obstetrics and Gynaecology	8.1%	5	6.3%	7	3.3%	7=	7.9%	6=	7.1%	7
Rural and Remote Medicine	2.3%	8=	3.5%	8	3.3%	7=	3.7%	8	2.4%	8
Psychiatry	2.3%	8=	1.4%	10=	2.0%	10=	2.6%	10	1.6%	9=
Sport and Exercise Medicine	1.2%		1.4%	10=	2.6%	9	0.5%		1.6%	9=
Ophthalmology	0.6%		0.7%		0.7%		0.5%		1.6%	9=
Palliative Medicine	-		0.7%		0.0%		0.0%		1.6%	9=
Public Health Medicine	-		0.7%		0.7%		1.0%		0.8%	
Indigenous Health	-		0.7%		-		0.5%		0.8%	
Non-Specialist Hospital Practice	0.6%		-		-		-		0.8%	
Occupational and Environmental Medicine	-		-		-		-		0.8%	
Radiology	1.7%	10	2.1%	9	2.0%	10=	3.1%	9	-	
Dermatology	0.6%		1.4%	10=	1.3%		1.0%		-	
Addiction Medicine	0.6%		-		0.7%		0.5%		-	
Pathology	-		-		0.7%		0.5%		-	
Dual Vocational Training Program	-		-		-		0.5%		-	
Intensive Care Medicine	1.2%		1.4%	10=	0.7%		-		-	
Medical Administration	-		0.7%		0.7%		-		-	
Sexual Health Medicine	0.6%		-		0.7%		-		-	
Radiation Oncology	1.2%		-		-		-		-	
Total	100%		100%		100%		100%		100%	

*Only top 10 ranks given due to small numbers thereafter

Table 19. Respondents' interest in medical teaching

Interest in medical teaching	2013		2014		2015		2016		2017	
	n	%	n	%	n	%	n	%	n	%
Yes	283	78.4%	221	74.9%	284	77.4%	302	74.2%	244	79.0%
No	17	4.7%	14	4.7%	23	6.3%	21	5.2%	12	3.9%
Undecided	61	16.9%	60	20.3%	60	16.3%	84	20.6%	53	17.2%
Total	361	100%	295	100%	367	100%	407	100%	309	100%

Table 20. Respondents' interest in research

Interest in research	2013		2014		2015		2016		2017	
	n	%	n	%	n	%	n	%	n	%
Yes	207	57.2%	160	54.1%	204	55.3%	211	52.0%	178	57.4%
No	59	16.3%	57	19.3%	70	19.0%	68	16.7%	49	15.8%
Undecided	96	26.5%	79	26.7%	95	25.7%	127	31.3%	83	26.8%
Total	362	100%	296	100%	369	100%	406	100%	310	100%

Factors influencing specialty choice

Respondents were asked to rate on a scale from 1(=not at all) to 5(=a great deal) how a certain factor would influence their most preferred type of medical practice. Each factor was then ranked using the mean response.

Table 21. Factors influencing choice of specialty (ordered by 2017 ranks)

Factor	2013		2014		2015		2016		2017	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Influence of consultants/mentors	3.74	4	3.77	5	3.99	3	4.02	4	4.15	1
Atmosphere/work culture typical of the discipline	3.91	3	4.13	1	4.04	2	4.08	2	4.14	2
General medical school experiences	3.74	4	3.73	6	3.90	4	3.70	6	4.06	3
Interest in helping people	3.99	1	3.96	2	4.17	1	4.09	1	4.03	4
Intellectual content of the specialty	3.69	6	3.82	4	3.66	7	3.69	7	3.82	5
Experience of specialty as a medical student	3.93	2	3.95	3	3.71	5	4.05	3	3.81	6
Opportunity for procedural work	3.57	8	3.67	7	3.67	6	3.63	8	3.78	7
Self-appraisal of own skills-aptitudes	3.69	6	3.61	8	3.65	8	3.77	5	3.71	8
Perceived amount of working hours	3.29	11	3.51	10	3.43	9	3.48	10	3.44	9
Perceived opportunity to work flexible hours	3.34	10	3.55	9	3.39	10	3.50	9	3.43	10
Types of patients typical of the discipline	3.41	9	3.33	11	3.37	11	3.37	11	3.41	11
Perceived career advancement prospects	3.11	12	3.13	14	3.07	15	2.97	15	3.17	12
Self-appraisal of own domestic circumstances	3.09	13	3.18	12	3.20	12	3.17	12	3.17	12
Perceived job security	2.67	17	3.13	14	3.15	13	3.00	14	3.16	14
Availability of a vocational training placement	2.98	14	3.15	13	3.13	14	3.07	13	3.11	15
Opportunity for research and/or teaching	2.77	15	2.81	16	2.74	18	2.80	16	2.93	16
Number of years required to complete training	2.66	18	2.69	18	2.82	17	2.69	17	2.77	17
Geographical location of most preferred specialty	2.68	16	2.74	17	2.93	16	2.61	18	2.70	18
Perceived financial prospects	2.39	19	2.47	19	2.36	19	2.44	19	2.41	19
Perceived prestige of the discipline	2.28	20	2.35	20	2.21	20	2.22	20	2.33	20
Influence of parents/relatives	1.90	22	1.82	22	1.91	21	1.98	21	2.04	21
Financial costs of medical school education and/or debt	1.76	23	1.74	23	1.67	23	1.71	23	1.84	22
Risk of litigation and associated insurance costs	1.96	21	1.89	21	1.76	22	1.85	22	1.83	23
Financial costs of vocational training	1.70	24	1.64	24	1.63	24	1.65	24	1.71	24

Internships

Table 22. First preference for internship region

Region	2013		2014		2015		2016		2017	
	n	%	n	%	n	%	n	%	n	%
Auckland	106	31.8%	120	41.8%	117	32.7%	104	26.9%	109	34.9%
Bay of Plenty	37	11.1%	22	7.7%	46	12.8%	42	10.9%	28	9.0%
Canterbury	38	11.4%	31	10.8%	53	14.8%	49	12.7%	43	13.8%
Gisborne	4	1.2%	4	1.4%	8	2.2%	20	5.2%	3	1.0%
Hawkes Bay	13	3.9%	13	4.5%	18	5.0%	10	2.6%	11	3.5%
Manawatu-Whanganui	11	3.3%	4	1.4%	4	1.1%	19	4.9%	7	2.2%
Marlborough	3	0.9%	2	0.7%	1	0.3%	6	1.6%	1	0.3%
Nelson	10	3.0%	8	2.8%	15	4.2%	11	2.8%	11	3.5%
Northland	9	2.7%	11	3.8%	9	2.5%	17	4.4%	13	4.2%
Otago	7	2.1%	7	2.4%	12	3.4%	14	3.6%	13	4.2%
Southland	5	1.5%	5	1.7%	7	2.0%	8	2.1%	6	1.9%
Taranaki	9	2.7%	12	4.2%	7	2.0%	14	3.6%	14	4.5%
Tasman	–	–	–	–	1	0.3%	–	–	–	–
Taupo*	25	7.5%	19	6.6%	19	5.3%	19	4.9%	3	1.0%
Waikato*	–	–	–	–	–	–	–	–	13	4.2%
Wellington region	49	14.7%	25	8.7%	36	10.1%	46	11.9%	34	10.9%
Westland	–	–	–	–	–	–	–	–	–	–
Country other than New Zealand	7	2.1%	4	1.4%	5	1.4%	7	1.8%	3	1.0%
Total	333	100%	287	100%	358	100%	386	100%	312	100%

* Waikato and Taupo were separated in the 2017 questionnaire

Table 23. Internship region acceptance

Region	2013		2014		2015		2016		2017	
	n	%	n	%	n	%	n	%	n	%
Auckland	82	28.4%	88	33.5%	99	29.7%	112	32.2%	85	31.6%
Bay of Plenty	28	9.7%	17	6.5%	34	10.2%	29	8.3%	29	10.8%
Canterbury	39	13.5%	30	11.4%	45	13.5%	41	11.8%	37	13.8%
Gisborne	7	2.4%	8	3.0%	7	2.1%	8	2.3%	4	1.5%
Hawkes Bay	14	4.8%	13	4.9%	14	4.2%	13	3.7%	12	4.5%
Manawatu-Whanganui	13	4.5%	10	3.8%	18	5.4%	18	5.2%	13	4.8%
Marlborough	5	1.7%	3	1.1%	2	0.6%	3	0.9%	2	0.7%
Nelson	7	2.4%	6	2.3%	10	3.0%	6	1.7%	8	3.0%
Northland	10	3.5%	13	4.9%	11	3.3%	11	3.2%	13	4.8%
Otago	10	3.5%	10	3.8%	19	5.7%	15	4.3%	10	3.7%
Southland	5	1.7%	9	3.4%	5	1.5%	9	2.6%	5	1.9%
Taranaki	10	3.5%	9	3.4%	9	2.7%	10	2.9%	8	3.0%
Tasman	–	–	1	0.4%	1	0.3%	–	–	–	0.0%
Taupo*	20	6.9%	22	8.4%	25	7.5%	28	8.0%	–	–
Waikato*	–	–	–	–	–	–	–	–	17	6.3%
Wellington region	32	11.1%	22	8.4%	30	9.0%	39	11.2%	23	8.6%
Westland	–	–	–	–	–	–	–	–	–	–
Country other than New Zealand	7	2.4%	2	0.8%	4	1.2%	6	1.7%	3	1.1%
Total	289	100%	263	100%	333	100%	348	100%	269	100%

* Waikato and Taupo were separated in the 2017 questionnaire

DISCUSSION

The strengths of this project include generally high response rates (65%-85%). The lowest response rate occurred in 2017 and the NZ MSOD Steering Group is looking at ways to increase this again.

These data allow a description and analysis of trends, with several broad conclusions possible:

1. Responses to most demographic and intention questions continue to be relatively stable over time.
2. Among the demographic trends are:
 - a. An increase in NZ citizens over time, along with fewer students on visas
 - b. More graduates wanting to practise in NZ
3. While the majority of respondents indicated their preferred location of future medical practice would be in a major city, there may be more wanting to work in regional centres. Interestingly, rural and remote health is consistently in the top 10 of first preferences, even though this might overlap with a career choice for general practice or other specialty.
4. Most students at graduation are undecided on a career choice. There is stability in the top three choices of Surgery (24% in 2017), General Practice (20% in 2017), and Internal Medicine (12.5% in 2017), with surgery and general practice alternating for top spot. Of those who reported being decided on their career, 30% had decided on Surgery. Given the proportion of surgeons in the NZ medical workforce is under 10%, this choice is likely to be moderated by market forces in postgraduate training places and employment.
5. The factors influencing choice of medical specialty show a level of stability over the five years from 2013 to 2017. The highest factors are largely environmental, namely *influence of consultants/mentors, atmosphere/work culture typical of the discipline, and general medical school experiences*, underscoring the importance of positive exposures during the medical programme and early postgraduate period.
6. Comparison between first choice of internship and internship acceptance suggests that not everyone is getting their first choice, especially for Auckland, Bay of Plenty and Wellington.

Areas where there is a higher rate of internship acceptance than first choices include Canterbury, Manawatu-Whanganui, Otago and Waikato/Taupo.

7. The factors that do not appear to influence the choice of medical specialty are particularly consistent, with very little variability in the bottom ten rankings from 2013 to 2017.

To strengthen these findings several analyses are possible. These may point to demographic, curricular, or socio-political factors that might be amenable to change:

- Modelling based on the current data sets to find factors associated with specific career choices.
- Conduct paired analyses i.e. comparing career choices at the beginning of medical school with those at exit and in PGY1, 3, and 5 to see what changes, when it changes, and what factors are associated with those changes.
- Inclusion in the database of information about student electives and attachments during medical school.
- Comparison of these data with that published in the literature or from other New Zealand workforce surveys (MCNZ, MTB, HWNZ).
- Comparison of the location preferences of students with population proportions both now and in 10 years' time, as a way of assessing the match of future workforce to health needs.

These data reflect career intentions at exit from medical school and not actual practice. Actual career choices, and their influences, will take several years to determine. Nonetheless, as they stand, these data give a flavour of the shape of the future NZ medical workforce. The NZ MSOD Steering Group is working with MCNZ and HWNZ to find ways to link the EQ to the MCNZ workforce survey so as to further strengthen the findings.

APPENDIX A: Response rate

The number of graduating students in NZ between 2013 and 2017 was 2,292. The number of respondents across the time period was 1,786 giving an overall response rate of 77.9%.

The response rates for each graduating year are presented in Table 24.

Table 24. Response rate by university of students completing study (pool) and EQs

Medical School/ Programme		2013		2014		2015		2016		2017	
		n	%	n	%	n	%	n	%	n	%
University of Auckland	EQ	160	83.3%	148	79.6%	167	84.8%	179	82.5%	156	72.2%
	Pool	192		186		197		217		216	
University of Otago	EQ	211	84.7%	153	64.3%	208	84.2%	246	86.6%	158	59.4%
	Pool	249		238		247		284		266	
Total	EQ	371	84.1%	301	71.0%	375	84.5%	425	84.8%	314	65.1%
	Pool	441		424		444		501		482	

Historically the University of Otago has had a greater number of medical students than the University of Auckland. Since 2010 there has been a strategic increase in the intake of new medical students in NZ with the majority of new students going to the University of Auckland. The changing University ratios of graduating students responding from 2013 to 2017 mirrors the changing intake numbers, with both medical schools now having nearly equal numbers.

Table 25. Number of respondents by university

Medical School/ Programme	2013		2014		2015		2016		2017	
	n	%	n	%	n	%	n	%	n	%
University of Auckland	160	43.1%	148	49.2%	167	44.5%	179	42.1%	156	49.7%
University of Otago	211	56.9%	153	50.8%	208	55.5%	246	57.9%	158	50.3%
Total	371	100%	301	100%	375	100%	425	100%	314	100%

[APPENDIX B: Method](#)

At the end of their final year of their medical programme students were invited to participate in the MSOD Exit Questionnaire survey. University of Otago students completed an on-line questionnaire, and University of Auckland students completed a paper version. The two sets of data from each year were combined to form national data sets.

The 18-question Exit Questionnaire gathers respondent information about basic demographics, future medical practice, and internship placements. The majority of the questions are quantitative. There are three qualitative questions relating to partner occupation, additional qualifications, and internship placement.

In 2017 the questionnaire separated Waikato and Taupo regions wherever a NZ region was an answer choice. There was also a change in NZ visa categories which is relevant to [Table 5](#). Otherwise the questionnaire was stable throughout this reporting period.