

National report on students commencing medical school in New Zealand in 2019–2023

May 2024

Prepared by:

The New Zealand MSOD Steering Group.

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Otago Medical School
Te Kura Hauora o Ōtākou



**MEDICAL AND
HEALTH SCIENCES**

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OTAGO MEDICAL SCHOOL
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**MEDICAL AND
HEALTH SCIENCES**

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EXECUTIVE SUMMARY

This report provides the findings from New Zealand Medical Schools Outcomes Database (NZMSOD) questionnaires administered between 2019 and 2023 to students commencing studies at a New Zealand medical school.

A total of 2,478 from a possible 2,883 students (85.9%) responded. Over this time the respondents comprised 59% women and 41% men.

The median age at the time of the survey across all cohorts is 19.7 years, with little variation in each cohort year, apart from 2023 when there was an increase in graduate entrants. Overall, over half of respondents (55%) are under 20 years of age at the beginning of the year of each survey, while 90% of respondents are under 25 years of age. The self-reported ethnic identity of respondents shows 16% of respondents identified as Māori and 10% of respondents identified as Pacific people. These proportions are a good representation of the proportion of Māori and Pacific people in the New Zealand population (17% Māori, 8% Pacific people)¹. Over 72% of respondents are New Zealand citizens, with a further 19% being New Zealand permanent residents. About 67% of respondents were born in New Zealand.

Approximately 27% of respondents have a partner or spouse. About 2% have children under the age of 16, and 1% report being responsible for one or more dependants other than children under the age of 16.

Nearly half of respondents (43%) have lived for a year or more in rural locations. About 26% of respondents have lived rurally for 13 years or more. About 75% of respondents identify as not coming from a rural background.

Over 39% of respondents have a tertiary qualification prior to commencing medical school. For the majority of these respondents, the highest qualification held was a bachelor's degree (67%).

For income to support their study, 78% of respondents had a NZ government student loan, 55% were supported by their family, and 44% were in paid employment. About 32% drew upon the NZ government student allowance. The majority of respondents relied upon multiple income sources (82%).

Over 91% of respondents intend to work in New Zealand in the future: 72% in a major city; 15% in a regional centre or large town, and the remainder in smaller towns.

New Zealand was the first preference for country of future practice for 92% of domestic students and 70% of international students.

Even though only at the start of medical school, 29% of respondents are decided on a future medical specialty. The consistent top preference across all cohorts is Surgery (26%). The next top three choices are General Practice (13%), Paediatrics and Child Health (11%), and Emergency Medicine (10%), although the order of preference is not consistent across each cohort. Over 60% of respondents picked one of these four specialties as their first-choice preference.

About 37% of respondents indicated that they were interested in medical teaching, with 54% of respondents being undecided at this stage. Similarly, 40% of respondents indicated an interest in medical research, with 46% undecided.

¹ Statistics New Zealand. 2018 Census ethnic group summaries.

<https://www.stats.govt.nz/tools/2018-census-ethnic-group-summaries/>, Retrieved 22/08/2022

INTRODUCTION

The Medical Schools Outcomes Database and Longitudinal Tracking Project (MSOD) is an on-going collaborative longitudinal study instigated by Medical Deans Australia and New Zealand (MDANZ)². The project has been operating in New Zealand (NZ) since 2005 and has appropriate ethics committee approvals. The purpose of the 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 New Zealand, 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, five, and eight year(s) after graduation (PGY1, PGY3, PGY5, PGY8). For each survey after graduation, respondents may not be at the same stage of their medical careers, as some may opt to take time out or be working part time, which may affect career progression.

This report presents summary and trend data for five years of commencing students at the University of Auckland and the University of Otago, between 2019 and 2023. For more details on methods, see Appendix A.

² Poole P, Wilkinson TJ, Bagg W, Freegard J, Hyland F, Jo E, Kool B, Roberts E, Rudland J, Smith B, Verstappen A. Developing New Zealand's medical workforce: realising the potential of longitudinal career tracking. *NZ Med J* 2019;132:1495

RESULTS

Some table cells in this report represent small numbers of respondents. Cells reporting on fewer than three respondents have been suppressed (indicated by a “..C” entry, see Figure 1). To protect respondents’ privacy, frequencies in all tables have been randomly rounded to a multiple of three.

The total frequency and percentage columns for each table do not include suppressed cells. Where a row only contains suppressed cells, the total cell will also be suppressed. Care has been taken to ensure the proportions presented here are a reasonable reproduction of the original data. The methods used are detailed in Appendix A.

Figure 1. Example table with low frequency cells that have been suppressed.

Table 2. Gender of respondents

Gender	Survey year							
	2019†		2020		2021		Total	
	n	%	n	%	n	%	n	%
Female	69	62.2%	108	57.1%	132	64.7%	309	61.3%
Gender diverse	..C	..C	-	-	-	-	..C	..C
Male	42	37.8%	81	42.9%	72	35.3%	195	38.7%

Base: all respondents. Question response rate: 97.1%

Not all respondents answered each question, so the numbers in each table vary. Where respondents can provide multiple responses to a question, an additional header line indicating the number of respondents that answered the question (n) is included.

Figure 2. Example table where multiple responses are allowed per respondent.

Table 5. Self-identified ethnicity of respondents. Percentages total more than 100% as respondents may identify with more than one ethnicity. The total number of respondents for each year are provided.

Ethnicity	Survey year							
	2019†		2020		2021		Total	
	n	%	n	%	n	%	n	%
	n = 114		n = 195		n = 201		n = 510	
Māori	9	7.9%	18	9.2%	12	6.0%	39	7.6%
Pacific people	..C	..C	3	1.5%	3	1.5%	6	1.2%
New Zealand European	78	68.4%	138	70.8%	138	68.7%	354	69.4%
Other	36	31.6%	60	30.8%	75	37.3%	171	33.5%

Base: all respondents. Question response rate: 98.3%

Column headings refer to the year in which the questionnaires were completed, except for tables with low total frequencies, where only total columns are presented.

Response rates

The CMSQ was first issued to University of Otago graduates in 2007, before proceeding to be administered nationally from 2010. The number of students commencing from these New Zealand medical school cohorts between 2019 and 2023 was 2,883. This is the total cohort who were eligible to respond to the CMSQs. The number of respondents across the survey time period was 2,478 giving an overall response rate of 85.9%.

Table 1. Response rate by university of students completing study (cohort) and questionnaires

Medical School / Programme		Survey year											
		2019		2020		2021		2022		2023		Total	
		n	%	n	%	n	%	n	%	n	%	n	%
University of Auckland	Responses	255		270		240		234		276		1275	
	Cohort	273	93.4%	282	95.7%	294	81.6%	282	83.0%	291	94.8%	1422	89.7%
University of Otago	Responses	243		279		219		264		198		1203	
	Cohort	288	83.8%	291	95.5%	291	75.5%	294	89.5%	297	66.7%	1461	82.2%
Total	Responses	498		549		459		498		474		2478	
	Cohort	561	88.5%	573	95.6%	585	78.6%	576	86.3%	588	80.6%	2883	85.9%

Table 2. Number of respondents by university

Medical School / Programme		Survey year											
		2019		2020		2021		2022		2023		Total	
		n	%	n	%	n	%	n	%	n	%	n	%
University of Auckland		255	51.2%	270	49.2%	240	52.3%	234	47.0%	276	58.2%	1275	51.5%
University of Otago		243	48.8%	279	50.8%	219	47.7%	264	53.0%	198	41.8%	1203	48.5%
Total		498	100%	549	100%	459	100%	498	100%	474	100%	2478	100%

Demographics

Table 3. Gender of respondents

Gender	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Female	294	59.4%	327	60.2%	270	58.8%	285	57.6%	270	57.3%	1446	58.7%
Gender diverse	3	0.6%	3	0.6%	3	0.7%	..C	..C	..C	..C	9	0.4%
Male	198	40.0%	213	39.2%	186	40.5%	210	42.4%	201	42.7%	1008	40.9%

Base: all respondents. Question response rate: 99.5%

Table 4. Age range of respondents. Age is calculated at 1 January in the year surveyed, and grouped into five-year ranges.

Age range	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Under 20 years	294	60.1%	327	59.9%	237	51.6%	288	57.5%	213	45.2%	1359	55.1%
20-24 years	147	30.1%	174	31.9%	162	35.3%	162	32.3%	213	45.2%	858	34.8%
25-29 years	33	6.7%	33	6.0%	36	7.8%	27	5.4%	30	6.4%	159	6.4%
30-34 years	12	2.5%	9	1.6%	18	3.9%	18	3.6%	6	1.3%	63	2.6%
35-39 years	3	0.6%	3	0.5%	3	0.7%	3	0.6%	6	1.3%	18	0.7%
40 years and over	..C	..C	..C	..C	3	0.7%	3	0.6%	3	0.6%	9	0.4%

Base: all respondents. Question response rate: 99.7%

Table 5. Median age and range of respondents. Age is calculated at 30 November in the year surveyed.

Age in years	Survey year					Total
	2019	2020	2021	2022	2023	
Median	19.5	19.5	19.8	19.6	20.6	19.7
Minimum	17.1	17.9	18.0	17.5	17.8	17.1
Maximum	51.8	43.8	48.2	45.7	40.4	51.8

Base: all respondents. Question response rate: 99.7%

Table 6. Self-identified ethnicity of respondents. Percentages total more than 100% as respondents may identify with more than one ethnicity. The total number of respondents for each year are provided.

Ethnicity	Survey year											
	2019		2020		2021		2022		2023		Total	
	n = 495		n = 546		n = 453		n = 498		n = 471		n = 2463	
	n	%	n	%	n	%	n	%	n	%	n	%
New Zealand Māori	72	14.5%	102	18.7%	69	15.2%	93	18.7%	63	13.4%	399	16.2%
Pacific	48	9.7%	54	9.9%	48	10.6%	48	9.6%	42	8.9%	240	9.7%
New Zealand European	279	56.4%	297	54.4%	243	53.6%	276	55.4%	255	54.1%	1350	54.8%
Other ethnicity	195	39.4%	225	41.2%	195	43.0%	201	40.4%	210	44.6%	1026	41.7%

Base: all respondents. Question response rate: 99.6%

Relationships and dependents

Table 7. Relationship status of respondents

Relationship status	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Single	372	75.6%	420	76.5%	303	66.4%	348	70.3%	342	73.1%	1785	72.6%
In a relationship but not living with partner	84	17.1%	90	16.4%	102	22.4%	105	21.2%	90	19.2%	471	19.1%
Living with partner	27	5.5%	21	3.8%	30	6.6%	27	5.5%	24	5.1%	129	5.2%
Married	6	1.2%	15	2.7%	18	3.9%	15	3.0%	12	2.6%	66	2.7%
Separated, divorced, widowed	3	0.6%	3	0.5%	3	0.7%	-	-	-	-	9	0.4%

Base: all respondents. Question response rate: 99.4%

Table 8. Respondents' number of children under 16 years of age, and other dependants

	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Children under 16 years												
0	486	98.8%	534	98.3%	444	98.0%	486	97.6%	462	97.5%	2412	98.0%
1	3	0.6%	6	1.1%	6	1.3%	6	1.2%	6	1.3%	27	1.1%
2 or more	3	0.6%	3	0.6%	3	0.7%	6	1.2%	6	1.3%	21	0.9%
Other dependants												
0	486	98.8%	534	98.9%	450	98.7%	489	98.8%	459	99.4%	2418	98.9%
1	3	0.6%	6	1.1%	3	0.7%	6	1.2%	3	0.6%	21	0.9%
2 or more	3	0.6%	..C	..C	3	0.7%	..C	..C	..C	..C	6	0.2%

Base: all respondents. Question response rate: 99.4%

Respondents' background

Table 9. University admission category

Admission category	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Domestic student	468	95.1%	507	93.9%	414	93.2%	465	95.7%	444	94.3%	2298	94.5%
International student	24	4.9%	33	6.1%	30	6.8%	21	4.3%	27	5.7%	135	5.5%

Base: all respondents. Question response rate: 98.5%

Table 10. Citizenship of respondents

Citizenship	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
New Zealand Citizen	372	75.6%	420	76.5%	303	66.4%	348	70.3%	342	73.1%	1785	72.6%
New Zealand Permanent Resident	84	17.1%	90	16.4%	102	22.4%	105	21.2%	90	19.2%	471	19.1%
Student Visa holder	27	5.5%	21	3.8%	30	6.6%	27	5.5%	24	5.1%	129	5.2%
Australian Citizen	6	1.2%	15	2.7%	18	3.9%	15	3.0%	12	2.6%	66	2.7%
Status other than one of the above	3	0.6%	3	0.5%	3	0.7%	-	-	-	-	9	0.4%

Base: all respondents. Question response rate: 99.8%

Table 11. Birth country of respondents

Birth country	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
New Zealand	333	67.7%	366	67.4%	300	67.1%	327	67.3%	318	67.5%	1644	67.4%
Other than New Zealand	159	32.3%	177	32.6%	147	32.9%	159	32.7%	153	32.5%	795	32.6%

Base: all respondents. Question response rate: 98.7%

Table 12. Overseas region of birth of domestic respondents

Region of birth	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Asia	69	54.8%	81	56.2%	63	55.3%	69	51.1%	60	47.6%	342	53.0%
Europe	30	23.8%	18	12.5%	24	21.1%	30	22.2%	30	23.8%	132	20.5%
Australia	9	7.1%	9	6.2%	12	10.5%	12	8.9%	9	7.1%	51	7.9%
Africa	9	7.1%	15	10.4%	6	5.3%	9	6.7%	9	7.1%	48	7.4%
Oceania	3	2.4%	12	8.3%	3	2.6%	9	6.7%	9	7.1%	36	5.6%
North America	6	4.8%	6	4.2%	3	2.6%	6	4.4%	6	4.8%	27	4.2%
South America	..C	..C	3	2.1%	3	2.6%	..C	..C	3	2.4%	9	1.4%

Base: all respondents. Question response rate: 97.7%

Table 13. Overseas region of birth of international respondents

Region of birth	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Asia	18	75.0%	21	77.8%	18	75.0%	12	66.7%	21	100%	90	78.9%
North America	..C	..C	6	22.2%	6	25.0%	6	33.3%	..C	..C	18	15.8%
Europe	3	12.5%	-	-	..C	..C	-	-	..C	..C	3	2.6%
Oceania	3	12.5%	-	-	-	-	-	-	-	-	3	2.6%
Africa	-	-	..C	..C	..C	..C	-	-	-	-	..C	..C

Base: all respondents. Question response rate: 97.5%

Table 14. Language(s) spoken at home, other than English

Language other than English spoken	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Yes	168	33.7%	207	37.9%	165	36.4%	168	33.9%	192	40.8%	900	36.5%
No	330	66.3%	339	62.1%	288	63.6%	327	66.1%	279	59.2%	1563	63.5%

Base: all respondents. Question response rate: 99.8%

Table 15. Geographic region of secondary school attended in New Zealand

Region of secondary school	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Auckland	177	39.9%	198	40.0%	165	43.3%	189	42.6%	180	42.6%	909	41.6%
Bay of Plenty	30	6.8%	30	6.1%	18	4.7%	27	6.1%	21	5.0%	126	5.8%
Canterbury	51	11.5%	72	14.5%	48	12.6%	48	10.8%	48	11.3%	267	12.2%
Gisborne	-	-	3	0.6%	..C	..C	3	0.7%	3	0.7%	9	0.4%
Hawke's Bay	6	1.4%	9	1.8%	9	2.4%	9	2.0%	12	2.8%	45	2.1%
Manawatu-Whanganui	18	4.1%	27	5.5%	15	3.9%	21	4.7%	24	5.7%	105	4.8%
Marlborough	3	0.7%	3	0.6%	3	0.8%	3	0.7%	..C	..C	12	0.5%
Nelson	15	3.4%	6	1.2%	6	1.6%	6	1.4%	3	0.7%	36	1.6%
Northland	15	3.4%	15	3.0%	15	3.9%	6	1.4%	12	2.8%	63	2.9%
Otago	18	4.1%	15	3.0%	21	5.5%	18	4.1%	24	5.7%	96	4.4%
Southland	3	0.7%	3	0.6%	3	0.8%	12	2.7%	6	1.4%	27	1.2%
Taranaki	15	3.4%	9	1.8%	6	1.6%	12	2.7%	6	1.4%	48	2.2%
Tasman	..C	..C	-	-	3	0.8%	6	1.4%	3	0.7%	12	0.5%
Taupo	3	0.7%	3	0.6%	3	0.8%	3	0.7%	..C	..C	12	0.5%
Waikato	45	10.1%	39	7.9%	24	6.3%	33	7.4%	33	7.8%	174	8.0%
Wellington Region	45	10.1%	60	12.1%	42	11.0%	42	9.5%	42	9.9%	231	10.6%
West Coast	..C	..C	-	-	-	-	..C	..C	-	-	..C	..C
Other	..C	..C	3	0.6%	..C	..C	6	1.4%	6	1.4%	15	0.7%

Base: all respondents. Question response rate: 99.8%

Rural background

Table 16. Geographic location of longest residency within New Zealand

Main NZ geographic location lived in	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Major urban centre (pop. over 100,000)	315	64.4%	369	67.2%	315	69.1%	321	64.5%	330	70.1%	1650	67.0%
Regional centre (pop. 25,000 – 100,000)	75	15.3%	72	13.1%	57	12.5%	78	15.7%	69	14.6%	351	14.3%
Town (pop. 10,000 – 25,000)	27	5.5%	33	6.0%	21	4.6%	30	6.0%	21	4.5%	132	5.4%
Small community (pop. under 10,000)	57	11.7%	60	10.9%	48	10.5%	57	11.4%	33	7.0%	255	10.4%
Not applicable (lived in NZ for fewer than 12 months)	15	3.1%	15	2.7%	15	3.3%	12	2.4%	18	3.8%	75	3.0%

Base: all respondents. Question response rate: 99.5%

Table 17. Total number of years spent outside a major New Zealand city

Years spent living rurally	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
0 years	267	54.3%	309	57.9%	264	57.9%	273	55.2%	276	59.0%	1389	56.8%
1-3 years	36	7.3%	30	5.6%	21	4.6%	27	5.5%	24	5.1%	138	5.6%
4-6 years	24	4.9%	21	3.9%	24	5.3%	21	4.2%	24	5.1%	114	4.7%
7-9 years	21	4.3%	9	1.7%	15	3.3%	15	3.0%	18	3.8%	78	3.2%
10-12 years	21	4.3%	21	3.9%	18	3.9%	15	3.0%	18	3.8%	93	3.8%
13 or more years	123	25.0%	144	27.0%	114	25.0%	144	29.1%	108	23.1%	633	25.9%

Base: all respondents. Question response rate: 99.1%

Table 18. “Do you identify as being from a rural background?”

Self-identified rural background	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Yes	132	27.0%	138	25.6%	99	21.9%	138	27.9%	96	20.8%	603	24.7%
No	357	73.0%	402	74.4%	354	78.1%	357	72.1%	366	79.2%	1836	75.3%

Base: all respondents. Question response rate: 98.7%

[Previous tertiary qualifications](#)

Table 19. Respondents with tertiary qualifications prior to commencing medical school

Additional tertiary qualifications	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
None	324	65.9%	351	64.3%	264	57.5%	324	65.1%	240	51.0%	1503	60.9%
One	126	25.6%	141	25.8%	126	27.5%	123	24.7%	159	33.8%	675	27.4%
Two	30	6.1%	39	7.1%	48	10.5%	42	8.4%	57	12.1%	216	8.8%
Three or more	12	2.4%	15	2.7%	21	4.6%	9	1.8%	15	3.2%	72	2.9%

Base: all respondents. Question response rate: 99.7%

Table 20. Highest qualification of those with a tertiary qualification

Highest tertiary qualification	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Diploma / Certificate	15	8.9%	12	6.1%	9	4.7%	9	5.2%	9	3.8%	54	5.6%
Bachelor's Degree	120	71.4%	135	68.2%	123	64.1%	114	65.5%	150	64.1%	642	66.5%
Bachelor's Degree (Honours)	9	5.4%	12	6.1%	15	7.8%	18	10.3%	27	11.5%	81	8.4%
Postgraduate Diploma / Certificate	9	5.4%	18	9.1%	24	12.5%	18	10.3%	27	11.5%	96	9.9%
Master's Degree	9	5.4%	15	7.6%	12	6.2%	15	8.6%	12	5.1%	63	6.5%
Doctoral Degree	6	3.6%	3	1.5%	9	4.7%	..C	..C	6	2.6%	24	2.5%
Other	-	-	3	1.5%	-	-	..C	..C	3	1.3%	6	0.6%

Base: respondents with tertiary qualifications. Question response rate: 99.8%

Income support

Table 21. Source(s) of income supporting study

Income source	Survey year											
	2019		2020		2021		2022		2023		Total	
	n = 495		n = 546		n = 456		n = 498		n = 468		n = 2463	
	n	%	n	%	n	%	n	%	n	%	n	%
NZ Government Student Loan	402	81.2%	432	79.1%	357	78.3%	384	77.1%	351	75.0%	1926	78.2%
Supported by family	276	55.8%	291	53.3%	252	55.3%	276	55.4%	258	55.1%	1353	54.9%
Paid employment	222	44.8%	213	39.0%	174	38.2%	240	48.2%	243	51.9%	1092	44.3%
NZ Government Student Allowance	153	30.9%	174	31.9%	147	32.2%	159	31.9%	150	32.1%	783	31.8%
Scholarship	144	29.1%	150	27.5%	132	28.9%	156	31.3%	114	24.4%	696	28.3%
Savings / trust fund	111	22.4%	96	17.6%	105	23.0%	117	23.5%	120	25.6%	549	22.3%
Personal loan	..C	..C	6	1.1%	6	1.3%	6	1.2%	6	1.3%	24	1.0%
Other	3	0.6%	3	0.5%	3	0.7%	3	0.6%	3	0.6%	15	0.6%

Base: all respondents. Question response rate: 99.7%

Table 22. Number of sources of income supporting study

Number of income sources	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
0	..C	..C	..C	..C	-	-	..C	..C	3	0.6%	3	0.1%
1	81	16.5%	105	19.1%	81	17.8%	84	16.7%	84	17.9%	435	17.6%
2	147	29.9%	183	33.3%	156	34.2%	141	28.0%	138	29.5%	765	31.0%
3	150	30.5%	174	31.7%	123	27.0%	162	32.1%	132	28.2%	741	30.0%
4	90	18.3%	60	10.9%	72	15.8%	84	16.7%	81	17.3%	387	15.7%
5 or more	24	4.9%	27	4.9%	24	5.3%	33	6.5%	30	6.4%	138	5.6%

Base: all respondents. Question response rate: 99.7%

Table 23. First preference of country of future practice

Preferred country	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
New Zealand	441	90.2%	489	91.1%	420	92.7%	453	92.6%	414	89.0%	2217	91.1%
Country other than New Zealand	48	9.8%	48	8.9%	33	7.3%	36	7.4%	51	11.0%	216	8.9%

Base: all respondents. Question response rate: 98.6%

Table 24. First preference of country of future practice: domestic students

Preferred country	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
New Zealand	432	91.7%	474	92.9%	387	93.5%	429	92.3%	399	89.9%	2121	92.1%
Country other than New Zealand	39	8.3%	36	7.1%	27	6.5%	36	7.7%	45	10.1%	183	7.9%

Base: all respondents. Question response rate: 98.6%

Table 25. First preference of country of future practice: international students

Preferred country	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
New Zealand	15	62.5%	21	63.6%	24	80.0%	18	85.7%	15	62.5%	93	70.5%
Country other than New Zealand	9	37.5%	12	36.4%	6	20.0%	3	14.3%	9	37.5%	39	29.5%

Base: all respondents. Question response rate: 98.6%

Table 26. First, second and third preferences of region of New Zealand for future practice. Cells have been shaded darker with increasing proportion of the column totals for clarity.

Preferred region of New Zealand	Survey year																	
	2019			2020			2021			2022			2023			Total		
	1 st Pref	2 nd Pref	3 rd Pref	1 st Pref	2 nd Pref	3 rd Pref	1 st Pref	2 nd Pref	3 rd Pref	1 st Pref	2 nd Pref	3 rd Pref	1 st Pref	2 nd Pref	3 rd Pref	1 st Pref	2 nd Pref	3 rd Pref
Auckland	33.7%	17.1%	9.2%	38.1%	13.6%	9.9%	43.4%	11.8%	13.5%	39.8%	15.2%	10.5%	40.8%	17.8%	11.0%	39.1%	15.1%	10.7%
Canterbury	12.9%	7.0%	7.8%	12.2%	8.0%	7.0%	12.5%	10.5%	7.8%	15.5%	10.1%	7.9%	13.4%	10.5%	8.2%	13.3%	9.2%	7.7%
Wellington Region	14.1%	15.8%	14.4%	14.4%	16.5%	14.6%	11.2%	16.4%	14.2%	9.9%	15.2%	13.2%	10.2%	9.2%	17.1%	12.0%	14.7%	14.7%
Otago	4.3%	12.0%	9.8%	6.6%	9.7%	9.4%	6.6%	10.5%	6.4%	6.8%	10.8%	9.2%	7.0%	9.2%	9.6%	6.3%	10.4%	8.9%
Bay of Plenty	8.6%	7.6%	4.6%	6.1%	8.0%	6.4%	4.6%	8.6%	8.5%	6.8%	7.6%	4.6%	4.5%	7.9%	6.8%	6.1%	7.9%	6.2%
Waikato†	4.9%	8.9%	12.4%	2.8%	8.5%	4.1%	2.6%	10.5%	7.8%	2.5%	8.9%	5.9%	3.8%	10.5%	6.2%	3.7%	10.3%	10.0%
Taupo†				0.6%	0.6%	3.5%	0.7%	1.3%	3.5%	..C	1.3%	3.9%	0.6%	1.3%	2.7%			
Northland	4.9%	6.3%	3.9%	2.2%	6.2%	7.0%	3.9%	7.2%	5.7%	2.5%	4.4%	5.3%	2.5%	4.6%	4.8%	3.2%	5.8%	5.4%
Hawke's Bay	1.2%	1.9%	2.6%	1.7%	3.4%	4.1%	2.0%	1.3%	2.8%	1.2%	2.5%	3.3%	1.3%	2.0%	2.7%	1.5%	2.3%	3.1%
Taranaki	1.8%	1.3%	2.0%	1.1%	1.7%	2.3%	1.3%	2.0%	1.4%	1.9%	0.6%	0.7%	1.3%	1.3%	1.4%	1.5%	1.4%	1.6%
Nelson	0.6%	2.5%	5.2%	1.7%	1.7%	2.9%	0.7%	3.9%	3.5%	1.9%	3.2%	3.3%	1.3%	1.3%	3.4%	1.2%	2.5%	3.7%
Gisborne	0.6%	1.3%	1.3%	1.1%	1.7%	1.8%	1.3%	1.3%	2.1%	1.2%	..C	0.7%	0.6%	0.7%	1.4%	1.0%	1.0%	1.4%
Manawatu-Whanganui	0.6%	1.3%	1.3%	1.7%	1.1%	1.2%	0.7%	2.0%	2.1%	0.6%	1.3%	0.7%	1.3%	2.0%	0.7%	1.0%	1.5%	1.2%
Southland	1.2%	1.9%	0.7%	0.6%	1.1%	1.2%	-	0.7%	1.4%	1.2%	1.3%	2.0%	-	0.7%	2.7%	0.6%	1.1%	1.6%
Marlborough	0.6%	0.6%	2.0%	-	..C	1.2%	0.7%	1.3%	1.4%	0.6%	0.6%	1.3%	-	0.7%	0.7%	0.4%	0.6%	1.3%
Tasman	..C	1.3%	..C	0.6%	0.6%	1.2%	0.7%	..C	0.7%	..C	1.9%	0.7%	..C	0.7%	0.7%	0.2%	0.9%	0.7%
West Coast	..C	..C	1.3%	-	..C	1.8%	-	1.3%	0.7%	..C	0.6%	1.3%	..C	1.3%	0.7%	..C	0.6%	1.2%
Country other than New Zealand	9.8%	13.3%	21.6%	8.8%	17.6%	20.5%	7.2%	9.2%	16.3%	7.5%	14.6%	25.7%	11.5%	18.4%	19.2%	9.0%	14.7%	20.7%

Base: all respondents. Question response rate: 98.6%

† Paper versions of the questionnaire had Waikato and Taupo as a combined category for this question in 2019.

Figure 3. Geographical distributions of population (2018 census), and of first preference of intended future practice location. These values have been corrected for response rate.

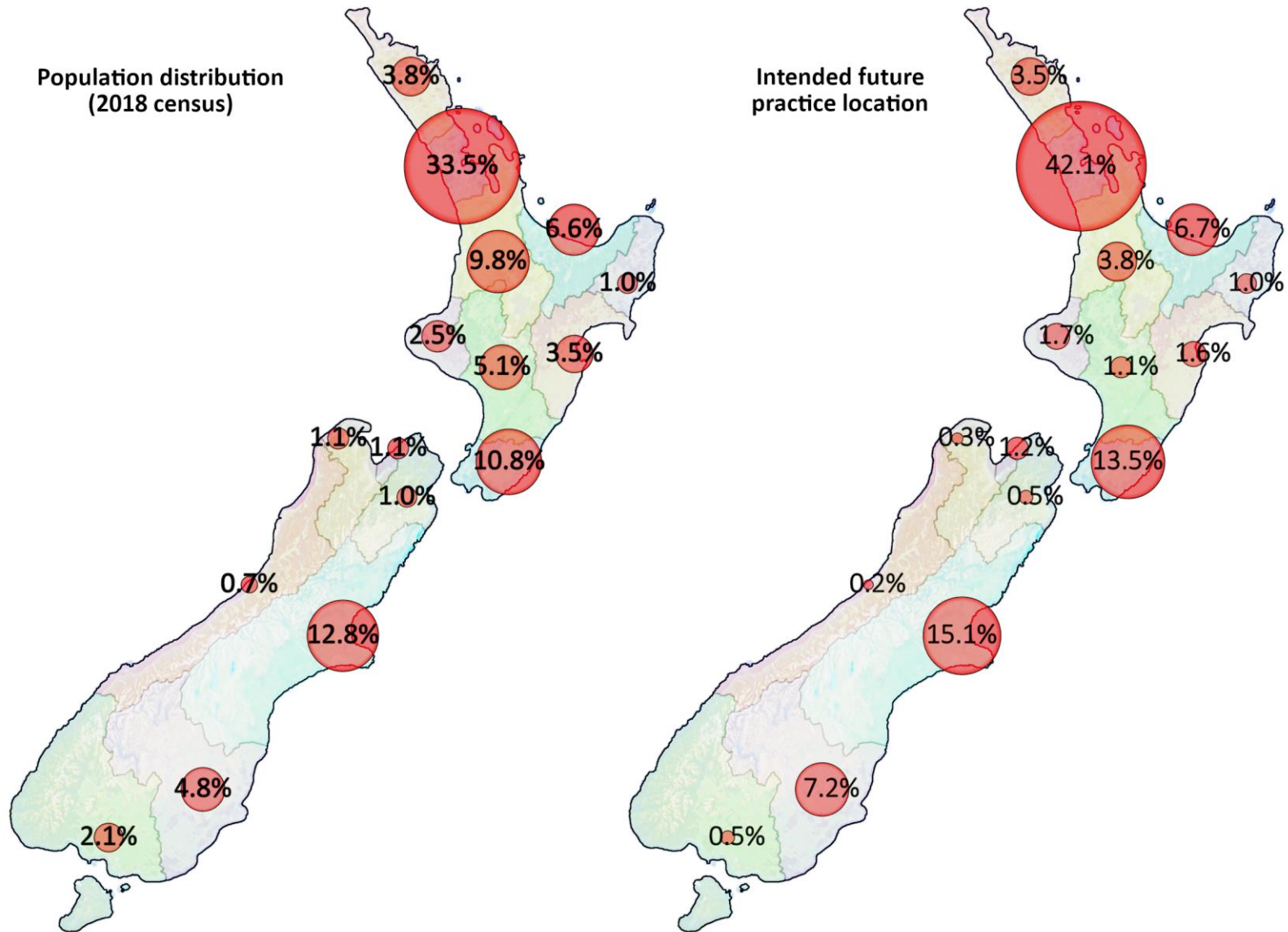


Figure 4. First preference of intended future practice location, and preferred population of geographical location. These values have been corrected for response rate.

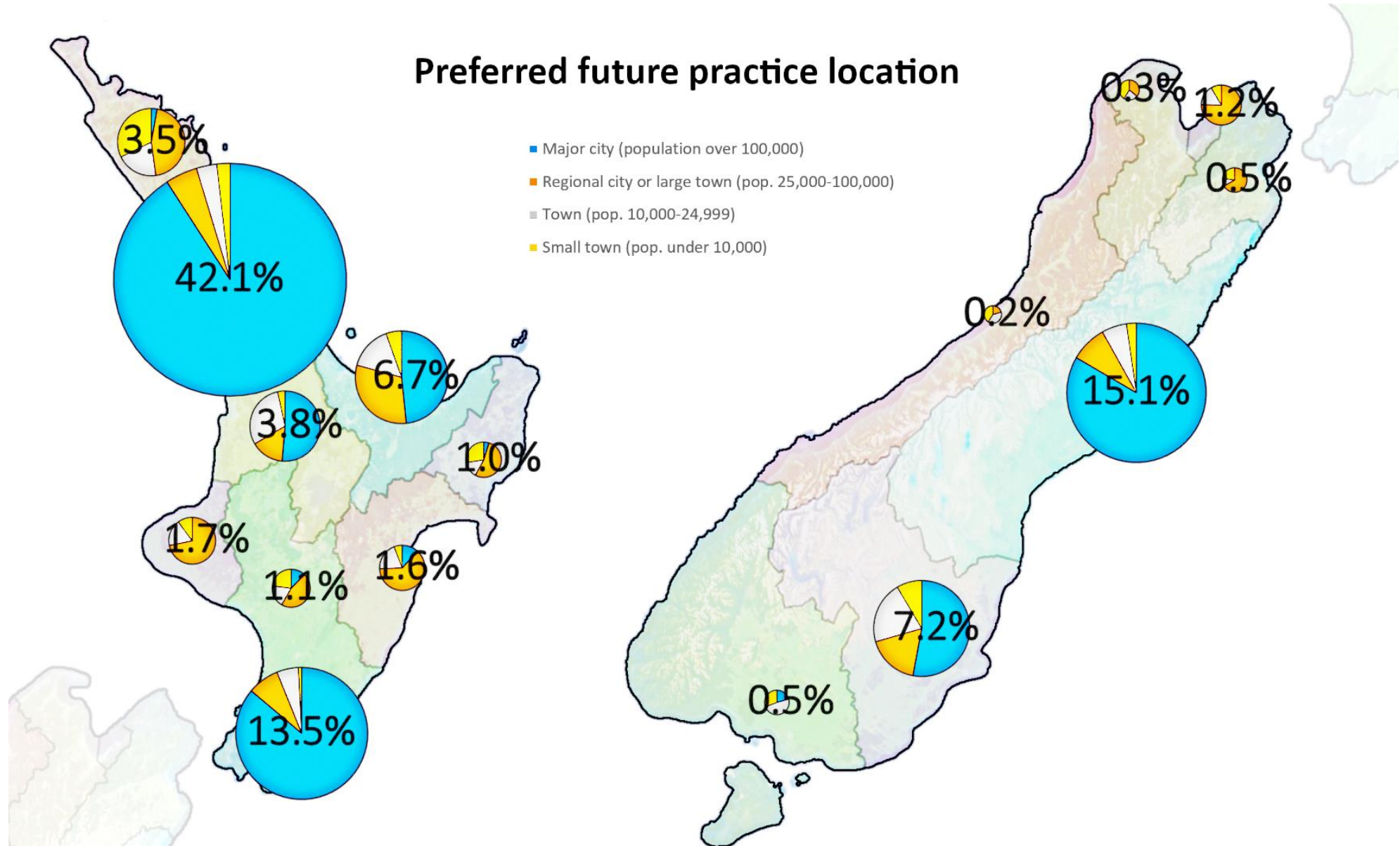


Table 27. Preferred population centre size of future practice

Preferred population centre size	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Major urban centre (pop. over 100,000)	342	70.4%	369	69.1%	339	74.3%	354	71.1%	348	74.8%	1752	71.8%
Regional centre (pop. 25,000 – 100,000)	75	15.4%	87	16.3%	63	13.8%	72	14.5%	66	14.2%	363	14.9%
Town (pop. 10,000 – 25,000)	39	8.0%	42	7.9%	24	5.3%	48	9.6%	27	5.8%	180	7.4%
Small community (pop. under 10,000)	24	4.9%	24	4.5%	24	5.3%	18	3.6%	15	3.2%	105	4.3%
Not applicable (not intending to work in New Zealand)	6	1.2%	12	2.2%	6	1.3%	6	1.2%	9	1.9%	39	1.6%

Base: all respondents. Question response rate: 98.5%

Table 28. Decided on specialisation

Decided on specialisation	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Yes	150	30.3%	99	18.1%	144	31.8%	162	32.5%	147	31.6%	702	28.6%
No	345	69.7%	447	81.9%	309	68.2%	336	67.5%	318	68.4%	1755	71.4%

Base: all respondents. Question response rate: 99.4%

Table 29. First preference of specialisation for all respondents

First preference of specialisation	Survey year											
	2019		2020		2021		2022		2023		Total	
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank
Surgery	24.1%	1	26.7%	1	24.7%	1	27.0%	1	27.0%	1	25.9%	1
General Practice	14.7%	2	12.8%	2	14.1%	2	13.3%	2	10.7%	2=	13.1%	2
Paediatrics and Child Health	11.6%	3	12.4%	3	11.7%	3	11.2%	3	9.9%	4	11.4%	3
Emergency Medicine	10.9%	4	9.4%	4	9.9%	4	9.5%	4	8.6%	5	9.7%	4
Adult Medicine / Internal Medicine / Physician	7.1%	5	7.6%	5	8.1%	5	8.3%	5	10.7%	2=	8.4%	5
Obstetrics and Gynaecology	6.5%	6	4.8%	6	7.0%	6	4.8%	6	6.8%	6	5.9%	6
Anaesthesia	4.7%	8	4.4%	8	5.1%	7	3.9%	8	5.5%	7	4.7%	7
Psychiatry	4.9%	7	4.6%	7	3.7%	8=	3.7%	9	4.6%	8	4.3%	8
Dermatology	2.2%	9=	3.8%	9	3.7%	8=	4.6%	7	3.7%	9	3.6%	9
Radiation Oncology	2.2%	9=	1.8%		2.0%	10=	1.5%		1.5%		1.8%	10
Sport and Exercise Medicine	1.8%		2.4%	10	0.9%		2.5%	10=	1.1%		1.8%	
Pathology	0.7%		1.4%		1.1%		2.5%	10=	1.3%		1.4%	
Ophthalmology	1.6%		1.6%		0.7%		1.5%		1.1%		1.3%	
Rural Hospital Medicine	1.6%		1.0%		2.0%	10=	1.0%		0.7%		1.2%	
Radiology	1.3%		0.8%		1.3%		1.0%		1.1%		1.1%	
Public Health Medicine	0.4%		1.6%		0.4%		0.8%		2.0%	10	1.1%	
Intensive Care Medicine	1.6%		0.8%		0.4%		1.2%		1.1%		1.0%	
Indigenous Health	0.9%		1.0%		0.4%		-	-	0.4%		0.6%	
Sexual Health Medicine	-	-	-	-	0.2%		0.4%		0.9%		0.3%	
Rehabilitation Medicine	0.2%		-	-	0.2%		0.4%		0.2%		0.2%	
Addiction Medicine	0.2%		0.2%		-	-	-	-	0.4%		0.2%	
Occupational and Environmental Medicine	-	-	-	-	0.2%		0.2%		0.2%		0.1%	
Palliative Medicine	-	-	-	-	0.4%		-	-	0.2%		0.1%	
Pain Medicine	-	-	0.2%		0.4%		-	-	-	-	0.1%	
Medical Administration	0.4%		-	-	-	-	-	-	-	-	0.1%	
Urgent Care	-	-	-	-	-	-	0.2%		-	-	0.0%	
Non-Specialist Hospital Practice	0.2%		-	-	-	-	-	-	-	-	0.0%	
Other	0.2%		0.6%		1.1%		0.4%		0.2%		0.5%	

Base: all respondents. Question response rate: 94.6%

Figure 5. First preference of medical specialty irrespective of whether a future medical specialty had been decided (n = 489). This figure is based on the total column of **Table 29**.

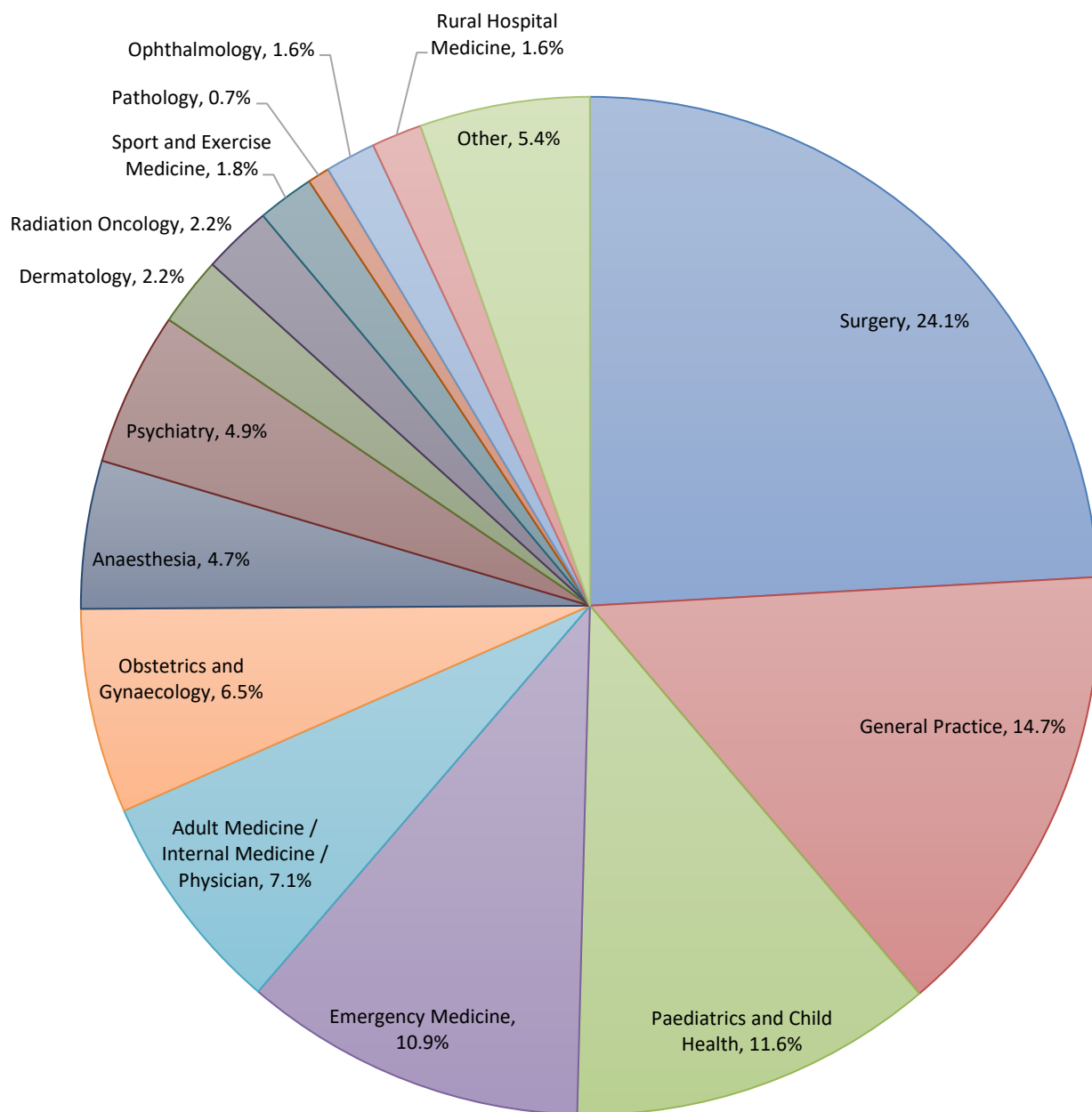


Table 30. First preference of specialisation for respondents who **had decided** on their speciality

First preference of specialisation	Survey year											
	2019		2020		2021		2022		2023		Total	
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank
Surgery	27.5%	1	34.7%	1	33.1%	1	34.0%	1	33.8%	1	32.5%	1
Paediatrics and Child Health	10.7%	3	9.5%	2=	9.7%	3	14.2%	2	12.0%	2	11.4%	2
General Practice	14.8%	2	9.5%	2=	9.0%	4	10.5%	3	9.2%	3	10.7%	3
Emergency Medicine	8.1%	4=	8.4%	4	11.0%	2	7.4%	5	7.7%	4	8.5%	4
Adult Medicine / Internal Medicine / Physician	8.1%	4=	6.3%	6	7.6%	5	8.6%	4	6.3%	5	7.5%	5
Obstetrics and Gynaecology	6.7%	6	5.3%	7	6.9%	6	5.6%	6	5.6%	6	6.1%	6
Psychiatry	4.7%	7	7.4%	5	4.1%	7	4.3%	7	3.5%	9	4.6%	7
Anaesthesia	2.7%	8=	3.2%	9=	1.4%		2.5%	8=	4.9%	7	2.9%	8=
Dermatology	2.0%		3.2%	9=	2.8%	9	2.5%	8=	4.2%	8	2.9%	8=
Radiation Oncology	2.7%	8=	1.1%		3.4%	8	1.9%		1.4%		2.2%	10
Rural Hospital Medicine	2.0%		4.2%	8	2.1%	10=	1.9%		-	-	1.9%	
Sport and Exercise Medicine	2.0%		1.1%		1.4%		2.5%	8=	0.7%		1.6%	
Radiology	1.3%		1.1%		2.1%	10=	-	-	2.1%	10=	1.3%	
Pathology	0.7%		2.1%		-	-	1.2%		2.1%	10=	1.2%	
Ophthalmology	2.0%		1.1%		-	-	-	-	1.4%		0.9%	
Public Health Medicine	-	-	2.1%		0.7%		0.6%		0.7%		0.7%	
Intensive Care Medicine	2.7%	8=	-	-	0.7%		-	-	-	-	0.7%	
Sexual Health Medicine	-	-	-	-	0.7%		-	-	2.1%	10=	0.6%	
Palliative Medicine	-	-	-	-	1.4%		-	-	0.7%		0.4%	
Occupational and Environmental Medicine	-	-	-	-	0.7%		0.6%		-	-	0.3%	
Rehabilitation Medicine	-	-	-	-	0.7%		0.6%		-	-	0.3%	
Addiction Medicine	-	-	-	-	-	-	-	-	0.7%		0.1%	
Indigenous Health	-	-	-	-	-	-	-	-	0.7%		0.1%	
Medical Administration (e.g. managing a hospital)	0.7%		-	-	-	-	-	-	-	-	0.1%	
Other	0.7%		-	-	0.7%		1.2%		-	-	0.6%	

Base: all respondents. Question response rate: 93.6%

Table 31. First, second and third preferences of specialty for those who have not decided. Ranked by 1st preference of total column.

Specialty	Survey year																	
	2019			2020			2021			2022			2023			Total		
	1 st Pref	2 nd Pref	3 rd Pref	1 st Pref	2 nd Pref	3 rd Pref	1 st Pref	2 nd Pref	3 rd Pref	1 st Pref	2 nd Pref	3 rd Pref	1 st Pref	2 nd Pref	3 rd Pref	1 st Pref	2 nd Pref	3 rd Pref
Surgery	22.0%	11.8%	14.3%	24.4%	14.6%	12.0%	20.6%	15.0%	14.0%	22.9%	11.2%	11.7%	23.3%	13.9%	13.0%	22.8%	13.3%	12.9%
General Practice	15.0%	11.8%	12.2%	13.3%	14.6%	13.5%	16.7%	15.0%	13.0%	14.7%	11.2%	10.7%	10.7%	11.9%	12.0%	14.0%	13.0%	12.4%
Paediatrics and Child Health	12.0%	12.7%	9.2%	12.6%	9.2%	9.0%	12.7%	10.0%	8.0%	10.1%	11.2%	7.8%	8.7%	10.9%	9.0%	11.3%	10.7%	8.6%
Emergency Medicine	12.0%	11.8%	7.1%	9.6%	12.3%	9.0%	9.8%	9.0%	10.0%	11.0%	11.2%	10.7%	8.7%	9.9%	9.0%	10.2%	10.9%	9.2%
Adult / Internal Medicine	7.0%	6.9%	4.1%	7.4%	6.2%	4.5%	7.8%	7.0%	5.0%	7.3%	6.5%	5.8%	13.6%	5.0%	5.0%	8.6%	6.3%	4.9%
Obstetrics and Gynaecology	7.0%	4.9%	6.1%	4.4%	6.2%	3.0%	6.9%	6.0%	5.0%	3.7%	6.5%	3.9%	7.8%	5.0%	4.0%	5.8%	5.7%	4.3%
Anaesthesia	6.0%	6.9%	7.1%	5.2%	6.9%	7.5%	6.9%	6.0%	6.0%	4.6%	8.4%	5.8%	5.8%	8.9%	8.0%	5.6%	7.4%	6.9%
Psychiatry	5.0%	3.9%	5.1%	4.4%	4.6%	4.5%	3.9%	4.0%	4.0%	3.7%	5.6%	4.9%	4.9%	5.0%	3.0%	4.4%	4.6%	4.3%
Dermatology	2.0%	6.9%	4.1%	4.4%	3.8%	3.8%	4.9%	5.0%	4.0%	5.5%	5.6%	4.9%	3.9%	5.0%	7.0%	4.2%	5.2%	4.7%
Sport and Exercise Medicine	1.0%	2.9%	3.1%	3.0%	3.1%	6.0%	1.0%	4.0%	3.0%	2.8%	4.7%	6.8%	1.0%	2.0%	4.0%	1.8%	3.3%	4.7%
Radiation Oncology	2.0%	2.0%	2.0%	2.2%	0.8%	2.3%	1.0%	2.0%	2.0%	0.9%	1.9%	1.9%	1.9%	2.0%	1.0%	1.6%	1.7%	1.9%
Intensive Care Medicine	1.0%	2.9%	3.1%	1.5%	3.8%	4.5%	1.0%	2.0%	2.0%	1.8%	1.9%	5.8%	1.9%	2.0%	2.0%	1.5%	2.6%	3.6%
Pathology	..C	2.9%	2.0%	1.5%	1.5%	3.0%	2.0%	3.0%	5.0%	2.8%	1.9%	2.9%	1.0%	3.0%	3.0%	1.5%	2.4%	3.2%
Ophthalmology	1.0%	2.0%	2.0%	1.5%	2.3%	1.5%	1.0%	1.0%	1.0%	2.8%	0.9%	2.9%	1.0%	3.0%	1.0%	1.5%	1.9%	1.7%
Radiology	1.0%	1.0%	3.1%	0.7%	3.1%	1.5%	1.0%	3.0%	1.0%	1.8%	2.8%	1.9%	1.0%	3.0%	4.0%	1.1%	2.6%	2.2%
Public Health Medicine	1.0%	2.0%	2.0%	1.5%	1.5%	3.0%	..C	2.0%	3.0%	0.9%	1.9%	1.9%	1.9%	2.0%	4.0%	1.1%	1.9%	2.8%
Rural Hospital Medicine	1.0%	2.0%	2.0%	..C	2.3%	3.0%	2.0%	2.0%	5.0%	0.9%	1.9%	1.9%	1.0%	5.0%	3.0%	0.9%	2.6%	3.0%
Sexual Health Medicine	-	..C	1.0%	-	..C	..C	-	..C	2.0%	0.9%	0.9%	1.9%	1.0%	..C	..C	0.4%	0.2%	0.9%
Medical Administration (e.g. managing a hospital)	1.0%	1.0%	3.1%	-	0.8%	3.8%	-	..C	2.0%	-	..C	1.0%	-	1.0%	2.0%	0.2%	0.6%	2.4%
Other†	3.0%	4.0%	7.1%	2.2%	2.3%	4.7%	1.0%	4.0%	5.0%	0.9%	3.6%	4.9%	1.0%	2.0%	6.0%	1.6%	3.2%	5.5%

Base: all respondents. Question response rate: 98.4%

† *Other* includes: Rehabilitation medicine, Addiction medicine, Non-specialist hospital practice, Pain medicine, Urgent care (added in 2022), Occupational and environmental medicine, and Palliative medicine.

Table 32. Respondents' interest in medical teaching

Interest in medical teaching	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Yes	189	38.2%	198	36.5%	165	36.2%	165	33.3%	189	40.1%	906	36.8%
Undecided	255	51.5%	300	55.2%	249	54.6%	288	58.2%	240	51.0%	1332	54.1%
No	51	10.3%	45	8.3%	42	9.2%	42	8.5%	42	8.9%	222	9.0%

Base: all respondents. Question response rate: 99.5%

Table 33. Respondents' interest in medical research

Interest in medical research	Survey year											
	2019		2020		2021		2022		2023		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Yes	183	37.2%	207	38.1%	192	42.1%	195	39.2%	198	42.0%	975	39.6%
Undecided	225	45.7%	267	49.2%	207	45.4%	234	47.0%	204	43.3%	1137	46.2%
No	84	17.1%	69	12.7%	57	12.5%	69	13.9%	69	14.6%	348	14.1%

Base: all respondents. Question response rate: 99.5%

Appendix A: Method

In 2007, the University of Otago conducted the first MSOD survey of students commencing medical school. At the University of Auckland, the Faculty of Medical and Health Sciences Tracking Project was running, which collected equivalent data from commencing medical students there. From 2013 onwards, both University of Auckland and University of Otago medical students have been surveyed by the MSOD project.

The questionnaire is typically administered online at the University of Otago, and on paper at the University of Auckland, with exceptions in 2020 – 2022 due to curriculum disruptions, where the questionnaire has been administered online.

The CMS questionnaire gathers student information about basic demographic details, enrolment characteristics, previous tertiary education, and plans for the future. The majority of questions are quantitative. The career choice options that respondents can select were determined when the study was first commenced in Australia. While they have been adapted, there is still not yet complete alignment with vocational scopes of practice as determined by MCNZ. In 2021, the Urgent Care vocational training programme was added, and Indigenous Health was removed, to bring this further into alignment.

Both University of Auckland and University of Otago study data were collected and managed using the Research Electronic Data Capture (REDCap) tool hosted at the University of Otago³. REDCap is a secure, web-based application designed to support data capture for research studies, providing: 1) an intuitive interface for validated data entry; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for importing data from external sources.

The data from each University for each year were combined to form national data sets.

To protect respondents' anonymity, Statistics New Zealand's guidelines have been adopted⁴ in the presentation of frequencies for individual years: frequencies less than three have been suppressed, as indicated by "...C" within table cells; other frequencies in these tables have been randomly rounded to a multiple of three. Unless otherwise indicated, columns total to 100%.

³ Paul A. Harris, Robert Taylor, Robert Thielke, Jonathon Payne, Nathaniel Gonzalez, Jose G. Conde, Research electronic data capture (REDCap) – A metadata-driven methodology and workflow process for providing translational research informatics support, *J Biomed Inform.* 2009 Apr;42(2):377-81

⁴ Statistics New Zealand, 2013 Census confidentiality rules and how they are applied, <https://www.stats.govt.nz/methods/2013-census-confidentiality-rules-and-how-they-are-applied>, published 3/09/2013. Retrieved 30/07/2020