



# The New Zealand Medical Workforce in 1999

## Summary

96% of practising doctors responded to the Medical Council's 1999 survey. The major findings were:

**The size of the workforce:** 8616 doctors were in active employment, an increase of 1.5% from 1998.

**Demographics:** Women are now 31.9% of the workforce, up 0.6% from 1998. The proportion of overseas-trained doctors is 33.9%. Maori doctors at 2.2% and Pacific Islands doctors at 1.2% continue to be markedly under-represented compared with the general population.

**Work by vocational group:** The fastest growing areas since 1990 have been anaesthetics, emergency medicine, internal medicine, occupational medicine, paediatrics, primary care, psychiatry, public health medicine and venereology / sexual health medicine.

**Geographical distribution:** In local authority regions, full-time equivalent general practitioners ranged from 41 to 142 per 100,000 people with an average of 87.

### Introduction

For nearly three decades the Medical Council of New Zealand has collected medical workforce data annually. Summaries have been published by the Councils and also by the Ministry of Health (1990<sup>2</sup>, 1994<sup>3</sup> and 1997<sup>4</sup>, including time series data) and the Clinical Training Agency (1995)<sup>5</sup>. The purpose of this report is to present to doctors the most relevant results of the 1999 survey. In June 2000 a fuller analysis of 2000 data will commence including a focus on measuring trends in retention of New Zealand doctors.

### Method

The sampling frame for the workforce survey questionnaire includes doctors with General or Probationary registration, a current annual practising certificate (APC), and a New Zealand address at 31 March 1999. The questionnaire was posted out in February 1999 with APC applications, and those not

responding were sent two reminder letters. All data were collected by 30 June 1999.

The only change for 1999 is the addition of a question asking hours on-call but not worked. This report also includes statistical information drawn from the Council's registration database, to avoid duplicating questions in the APC application (age, sex, registration date, graduation country and graduation year).

Geographical analysis uses territorial authorities and Health Funding Authority localities. Addresses of work sites were coded using census area unit data previously supplied by Statistics New Zealand. HFA populations were determined by amalgamating territorial authority population estimates for June 1999<sup>6</sup>. Full time equivalents (FTEs) are calculated proportionately, so that 44 hours per week equals 1.1 FTE. Results were generated using Access software.

Ethnicity refers to the cultural group or groups people identify with. Multiple responses are reported here as a single category, according to a simplified version of Statistics New Zealand's prioritisation standard. Where a respondent reports they identify with more than one ethnic group, the Statistics NZ prioritisation algorithm is applied to report a single ethnicity.

## Results

### Response:

At 31 March 1999 the medical register recorded a total of 9067 doctors practising medicine in New Zealand. 8704 doctors completed the questionnaire giving a response rate of 96.0%. Of the respondents, 8616 worked for four or more hours per week in New Zealand. The results in this supplement include only this group, who are described as "in active employment".

### Size of the medical workforce:

The workforce grew to 8616 active doctors, up 1.5% on 1998. This provides one doctor per 442 people in March 1999, compared to one per 386 people in Australia at December 1996<sup>7</sup>. This ratio has increased by 21% since 1990 and 45% since 1980. The largest contributors to recent growth are shown in *Table 1*.

### Medical Work by Vocational Group:

The rate of growth for each vocational group is shown in *Table 2*, with the fastest growing areas since 1990 being anaesthetics, emergency medicine, internal medicine, occupational medicine, paediatrics, primary care, psychiatry, public health medicine and venereology / sexual health medicine. There was a marked increase in the number of general practitioners who gave their work type as primary care (16.9%, up from 4.3% in 1998).

The proportion of the total workforce undertaking training towards inclusion on the vocational register was 28%, half of which were GPs, with the percentage of GPs vocationally registered now also over 50%. Groups where more than one third of the doctors described themselves as being in vocational training were general practice, emergency medicine, occupational medicine and general surgery.

### Hours worked:

The median hours per week for all active doctors was 49 hours, for women 40 hours and for men 50 hours. Median hours declined with increasing age, from 56 hours per week for those aged 20-29 years to 48 hours per week for those aged 50-59. Doctors aged 65-69 had a median figure of 36 hours per week.

House officers (56) and registrars (56) had the highest median hours per week. For specialists the median was 50 hours and for GPs 42 hours.

Hours on-call: The mean time on-call was 23 hours per week, in addition to the average working week of 47 hours. *Table 3* shows each employment capacity and the proportions falling into each group of on-call hours.

### Geographical distribution:

The rate of full time equivalent GPs ranged from 74 per 100,000 population for the Manawatu-Wanganui HFA locality to 95 per 100,000 for Otago-Southland (*Table 4*). The disparity between the smaller territorial authorities was more apparent, with FTEs for general practice ranging from 41 per 100,000 population (Grey District) up to 142 per 100,000 for the Queenstown district (*Table 6*). Of the fifteen city-based territorial authorities, only one had a majority of overseas qualified doctors (Invercargill). In contrast, 27 out of the 59 remaining district authorities had a majority of doctors with primary medical training from overseas.

Publications by the Australian Medical Workforce Advisory Committee<sup>8</sup> identify reducing the rural/urban gap as a major health goal. 1998 analysis by urban area categories confirmed a similar though relatively smaller gap in New Zealand.

### Work environment:

88.7% of medical hours worked were performed at the main work site, 9.7% at the next main site, and 1.6% at all other sites. Employment patterns are complex as 44% of doctors work at multiple work sites, typically with different employers.

Sixty-one percent of work performed by specialists was for public hospitals and 30% for the combined private sector (private hospitals, commercial companies, group and sole private practice). Sixty-three percent of all GP hours were worked in group private practice, with 29% in sole practices.

### Distribution by sex and ethnicity:

The overall proportion of women continued to increase to 31.9%, up from 23.9% in 1990 and 16.4% in 1980. Because of the increasing numbers of women training as doctors, their median age in the workforce (38 years) was significantly younger than men (43 years). The proportion of women varied widely among occupational groups (0% to 47%), with internal medicine, ophthalmology, rehabilitation medicine and all branches of surgery except paediatrics being less than 15% (*Table 5*).

The increasing numbers of female GPs

working shorter hours in urban practices has been highlighted in Australia recently\*. In New Zealand the median hours per week by female GPs is 32, and 46 for male GPs.

The proportions of doctors identifying as Maori and Pacific Peoples were 2.2% and 1.2% respectively. These are markedly under-representative of the New Zealand population, at 14.5% and 4.8% respectively in the 1996 census. Projections by Statistics New Zealand forecast these proportions to rise to 17% and 8% by 2016 (based on medium assumptions)\*. Recent admission initiatives have boosted the combined number of Maori and Pacific students entering medical schools in 1999, to 22% of the intake at Auckland and 8% at Otago. The 1999 proportion of Maori among house officers was 3.8%.

#### Overseas trained doctors:

The proportion of doctors who obtained their primary medical qualification in another country was 33.9% (Table 5), up from 29.3% in 1990 but equivalent to 1980. This proportion is much lower in Australia at 18%. Qualifications held by overseas trained doctors by country were the United Kingdom 38.8%, South Africa 20.6%, Australia 7.6%, India 7.3%, Sri Lanka 6.5%, Iraq 2.1%, Canada 1.7%, Pacific Island countries 1.6%, Eire 1.5%, Germany 1.5%, Hong Kong 1.4%, United States 1.4%. Forty-nine other countries with less than 30 doctors each make up the remaining 7.9%.

Short-stay overseas trained doctors with temporary registration were not included in the 1999 survey, but made up 3.2% of the total workforce in 1998. A comparable figure for Australia is 1.1% of the 1996 workforce.

## Discussion

#### Response rate and accuracy:

Survey results since 1996 have not been adjusted for non-response. Careful analysis of registration information for non-respondents in 1998 estimated that point-in-time workforce calculations (eg, total hours worked) are 1% less than the actual total.

#### Hours worked:

Past data on hours has been treated with some caution, since some doctors may have included time "on call" which was not spent doing medical work. The 1999 questionnaire contained a separate question asking on-call hours not worked, which clarified this separation. 1999 results for hours worked showed no significant change, giving confidence that past and present estimates of hours and full-time equivalents have been accurate.

#### Workforce trends:

The last detailed analysis of medical workforce trends over time was completed for the Clinical Training Agency in 1995. A more in-depth study of New Zealand trends than is possible in this summary will commence in June 2000.

## Further information

Additional detailed analysis of this survey is provided by the Medical Council to the Ministry of Health and individual information requirements can be discussed with the analytical unit, New Zealand Health Information Service. A selection of data is also available from the NZHIS website at <http://www.nzhis.govt.nz/stats/medpracstats.html>.

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#### Access to data:

The Medical Council has a policy allowing approved researchers to complete further analysis of workforce survey data. Contact the information officer for further details.

## Acknowledgements

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The Medical Council particularly thanks all the practitioners who took time to complete the workforce survey.

#### Endnotes

- i Medical Council of New Zealand, The New Zealand medical workforce 1998, May 1999.
  - ii Hannah A, Roser B, Linton M. The New Zealand health workforce 1990, Wellington, Department of Health, 1996.
  - iii New Zealand Health Information Service, The New Zealand health workforce 1994, Wellington: Ministry of Health, 1996.
  - iv New Zealand Health Information Service, New Zealand medical practitioners 1997, Wellington: Ministry of Health, 1999.
  - v Hannah, A. The New Zealand medical practitioner workforce 1995, Christchurch: Clinical Training Agency, 1996.
  - vi Subnational population estimates: as at 30 June 1999 1998, New Zealand: Statistics New Zealand, 1998.
  - vii Australian Medical Workforce Advisory Committee, Australian medical workforce 1996, Australia: AMWAC, 1997.
  - viii Australian Medical Workforce Advisory Committee, Female participation in the Australian medical workforce, Australia: AMWAC 1996.
- Demographic trends 1998, New Zealand: Statistics New Zealand, 1998.

**Table 1: Changes in the medical workforce 1990 to 1999**

Capacity	Active doctors 1999	Percent increase 1990-99	Percent increase 1998-99
General practice	3,191	31.4	1.0
House officer	936	37.8	2.9
M.O.S.S.	290	67.6	11.1
Primary care other than GP	166	0.6	-5.1
Registrar	1,167	46.1	1.7
Specialist	2,647	35.6	4.4
Other	217	51.7	-23.9
No answer	2	-	-
<b>Total</b>	<b>8,616</b>	<b>35.9</b>	<b>1.5</b>

**Table 2: Vocational groups at main work site (house officers excluded) <sup>1</sup>**

Vocational group <sup>a</sup>	No. of doctors in main work site	Percent of total doctors	Percent change 1990 to 1999 <sup>b</sup>	Average hours worked (all sites)	No. in vocational training	Trainees as percent of vocational groups	Vocational registration current APC NZ address
Anaesthetics	528	6.9	124	51	140	27	346
Basic Medical Science	50	0.7	163	49	-	-	-
Dermatology	42	0.5	20	46	4	10	41
Diagnostic Radiology	266	3.5	91	46	64	24	199
Emergency Medicine	155	2.0	7,650	45	100	65	10
General Practice	2,590	33.7	7	41	1,077	42	1,594
Internal Medicine	808	10.5	129	50	183	23	510
Obstetrics & Gynaecology	224	2.9	68	51	49	22	185
Occupational Medicine	51	0.7	132	42	23	45	12
Ophthalmology	108	1.4	48	48	19	18	93
Paediatrics	249	3.2	147	51	72	29	166
Pathology	184	2.4	24	44	33	18	145
Primary Care	837	10.9	-	40	-	-	-
Psychiatry	478	6.2	160	44	144	30	269
Public Health Medicine & Mgmt	202	2.6	173	44	34	17	96
Radiotherapy	38	0.5	90	49	8	21	28
Rehabilitation Medicine	12	0.2	-	44	3	25	1
Surgery: Cardiothoracic	21	0.3	-62	57	4	19	18
Surgery: General	248	3.2	-30	57	85	34	193
Surgery: Neurosurgery	15	0.2	-	50	1	7	15
Surgery: Orthopaedic	223	2.9	-	57	35	16	160
Surgery: Other	48	0.6	-	53	1	2	-
Surgery: Otolaryngology	82	1.1	-	50	13	16	68
Surgery: Paediatric	16	0.2	-	58	1	6	9

Surgery: Plastic	52	0.7	-	54	14	27	32
Surgery: Urology	53	0.7	-	54	13	25	39
Venereology	19	0.2	375	31	5	26	3
Invalid response	52	0.7	-	-	31	-	-
Not recorded	29	0.4	-	-	31	-	-
<b>Total</b>	<b>7,680</b>	<b>100.0</b>	<b>75</b>	<b>46</b>	<b>2,187</b>	<b>28</b>	<b>4,232</b>

<sup>1</sup> includes registrars, MOSSs and others not on the vocational register

<sup>2</sup> based on vocational groups, except for categories "basic medical science", "primary care other than GP" and "other surgical sub-specialties"

<sup>3</sup> the percentage change 1990-99 is calculated for specialists and GPs only as comparable 1990 data is not available

**Table 3: Proportion of all doctors by on-call hours grouped and employment capacity**

On-call hours grouped	General practice	Primary care other than GP	House officer	Registrar	Medical officer special scale	Specialist	Other
no on-call hours	38	69	49	41	54	27	68
1 - 4	10	3	0	2	3	4	4
5 - 9	8	3	7	6	3	5	6
10 - 19	11	5	15	14	8	14	3
20 - 49	19	13	10	17	21	31	12
50 and more hours	14	7	19	19	11	18	7
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

**Table 4: GP workforce by HFA locality of main work site**

HFA Locality <sup>1</sup>	Number of GPs	GPs at all work sites	FTEs for HFA locality population	FTEs for GPs per 100 000 population
Northland	121	128	144,400	89
Auckland	979	981	1,175,400	83
Waikato	286	320	366,800	87
Bay of Plenty	215	208	240,800	86
Tairāwhiti/Hawkes Bay	149	160	192,200	83
Taranaki	79	87	105,600	82
Manawatu-Wanganui	149	170	230,400	74
Wellington	370	351	429,300	82
Nelson-Marlborough	113	107	121,300	88
Canterbury/West Coast	478	462	522,600	88
Otago/Southland	252	268	281,500	95
<b>Total</b>	<b>3,191</b>	<b>3,241</b>	<b>3,810,300</b>	<b>85</b>

<sup>1</sup> Ruapehu TLA is included in Waikato HFA although a smaller part is in Manawatu-Wanganui



**Table 5: Demographics of doctors working in the main occupational groups**

Capacity/work at main work site	Median age 1998	Percent women			Percent overseas trained		
		1980 <sup>1</sup>	1990	1999	1980	1990	1999
House officer	27	32	44	47	27	21	21
Registrar	32	23	29	35	42	22	36
Medical officer special scale	44	38	32	41	52	50	59
Primary care other than GP	41	49	42	38	42	39	33
Other	44	46	25	35	43	32	27
Specialists and GPs (vocational groups)							
Anaesthetics	46	19	16	19	41	39	41
Basic medical science	48	12	16	21	31	42	29
Dermatology	44	3	17	23	30	20	23
Diagnostic radiology	44	8	14	25	24	27	35
Emergency medicine	39	-	0	29	-	50	48
General practice	42	13	24	36	35	30	34
Internal medicine	47	4	7	13	24	34	31
Obstetrics & gynaecology	46	10	17	29	24	28	42
Occupational medicine	48	-	5	18	-	41	29
Ophthalmology	47	6	11	11	18	16	17
Paediatrics	45	21	23	26	38	39	34
Pathology	47	15	22	24	21	26	38
Primary care	64	0	-	17	0	-	50
Psychiatry	47	19	28	31	41	50	57
Public health medicine & mgmt	44	12	23	24	44	36	27
Radiotherapy	42	-	5	16	-	55	64
Rehabilitation medicine	41	-	-	0	-	-	40
Surgery: cardiothoracic	46	-	-	8	-	-	15
Surgery: general	50	-	-	2	-	-	29
Surgery: neurosurgery	47	-	-	8	-	-	50
Surgery: orthopaedic	46	-	-	3	-	-	14
Surgery: other subspecialties	43	-	-	7	-	-	22
Surgery: otolaryngology	46	0	2	5	31	24	27
Surgery: paediatric	45	-	-	27	-	-	45
Surgery: plastic	51	-	-	3	-	-	15
Surgery: urology	52	-	-	2	-	-	15
Surgery: all ex otolar (80,90)	-	0	1	-	20	23	21
Venereology	43	17	50	33	33	50	50
<b>All the above groups</b>	<b>44</b>	<b>16</b>	<b>24</b>	<b>32</b>	<b>33</b>	<b>29</b>	<b>34</b>

<sup>1</sup> all surgical subspecialties except otolaryngology were combined in 1980 and 1990 data

**Table 6: Medical workforce by territorial authority of main work site**

Territorial authority	No. of GPs	FTEs GPs	FTEs per 100 000	Ave hours GPs	No. of all doctors	FTEs all per 100 000	O'seas doctors % of all	Territorial authority pop'n
<b>CITIES</b>								
North Shore City	158	155	83	39	397	241	34	187,700
Waitakere City	106	108	63	41	147	88	36	170,700
Auckland City	393	383	100	39	1,685	524	29	381,800
Manukau City	192	198	70	41	565	242	35	281,700
Hamilton City	121	128	109	42	540	562	41	117,100
Napier City	52	55	101	42	66	128	44	54,600
Palmerston North City	65	71	94	43	262	414	39	75,200
Porirua City	33	31	66	38	69	153	49	47,600
Upper Hutt City	29	30	80	41	31	84	26	37,300
Lower Hutt City	76	77	78	41	210	235	31	98,200
Wellington City	165	171	102	41	713	507	22	166,800
Nelson City	41	42	101	41	112	316	21	41,400
Christchurch City	354	349	107	39	1,021	372	25	324,300
Dunedin City	107	115	96	43	457	465	30	119,700
Invercargill City	47	49	97	42	136	320	51	50,800
<b>DISTRICTS</b>								
Far North District	50	57	101	46	58	117	57	56,600
Whangarei District	58	60	86	42	171	294	40	70,000
Kaipara District	13	15	83	46	15	94	60	17,800
Rodney District	58	65	88	45	65	99	22	73,800
Papakura District	36	36	86	40	43	104	28	41,800
Franklin District	36	39	74	43	39	81	41	52,200
Thames Coromandel District	25	28	106	45	36	151	58	26,600
Hauraki District	14	15	83	42	14	83	36	17,700
Waikato District	16	19	46	48	17	49	59	41,000
Matamata-Piako District	19	22	75	47	20	76	40	29,600
Waipa District	31	32	79	41	34	86	59	40,300
Otorohanga District	7	8	76	43	7	76	29	9,950
South Waikato District	15	16	65	43	19	88	63	24,400
Waitomo District	7	8	84	46	10	124	50	9,540
Taupo District	22	23	71	42	35	112	46	32,500
Western BOP District	20	21	53	41	22	57	32	38,600
Tauranga District	94	92	106	39	226	299	31	87,100
Rotorua District	61	61	91	40	151	256	36	67,200
Whakatane District	28	29	84	41	62	199	65	33,900
Kawerau District	5	5	62	37	7	92	100	7,510
Opotiki District	7	8	84	47	7	84	57	9,830
Gisborne District	32	39	84	49	79	209	47	46,600
New Plymouth District	52	51	75	39	149	240	40	68,300
Stratford District	9	12	129	53	10	130	50	9,240

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South Taranaki District	18	19	67	42	21	82	71	28,300
Ruapehu District	9	11	67	49	12	82	67	16,650
Wairoa District	5	6	62	49	5	62	100	9,890
Hastings District	51	56	82	44	174	313	32	68,100
Cent. HB District	9	10	73	42	9	73	67	13,000
Wanganui District	35	38	85	44	109	282	65	44,900
Rangitikei District	10	12	75	48	11	84	55	16,050
Manawatu District	12	15	53	50	14	59	21	28,600
Tararua District	11	11	60	40	11	60	64	18,450
Horowhenua District	16	20	65	50	22	84	68	30,500
Kapiti Coast District	44	48	115	43	54	137	41	41,200
Masterton District	13	12	55	38	35	170	57	22,700
Carterton District	4	3	51	34	4	51	50	6,690
South Wairarapa District	6	7	81	48	6	81	67	8,870
Tasman District	38	35	87	37	41	95	46	40,000
Marlborough District	34	39	96	45	61	176	34	39,900
Chatham Islands	0	0	-	-	-	0	-	740
Kaikoura District	4	4	118	43	5	160	60	3,620
Buller District	5	6	62	51	6	71	83	10,350
Grey District	8	6	41	29	20	162	60	13,900
Westland District	4	5	57	48	7	89	57	8,280
Hurunui District	5	6	64	50	9	105	56	9,810
Waimakariri District	19	20	56	42	21	64	14	35,400
Banks Peninsula District	9	8	100	35	10	113	40	7,900
Selwyn District	16	17	62	42	20	78	30	27,400
Ashburton District	18	20	78	45	29	129	48	25,600
Timaru District	30	32	75	43	74	210	36	42,500
Mackenzie District	i	5	112	63	i	112	100	4,250
Waimate District	i	4	57	57	i	57	33	7,520
Waitaki District	20	22	107	45	28	147	39	21,100
Cent. Otago District	15	17	117	46	18	146	56	14,650
Queenstown-Lakes District	22	23	142	42	23	144	17	16,050
Clutha District	15	17	96	46	16	104	38	17,900
Southland District	17	16	54	38	17	54	47	30,300
Gore District	9	9	73	42	11	80	64	13,000
<b>Total</b>	<b>3,191</b>	<b>3,302</b>	<b>87</b>	<b>41</b>	<b>8,616</b>	<b>264</b>	<b>34</b>	<b>3,811,040</b>

<sup>i</sup>to prevent identification of individuals, categories which contain less than 4 doctors are omitted

