

Please cite this paper as:

Zurn, P. and J. Dumont (2008), "Health Workforce and International Migration: Can New Zealand Compete?", *OECD Health Working Papers*, No. 33, OECD Publishing. [doi:10.1787/241523881673](https://doi.org/10.1787/241523881673)



OECD Health Working Papers No. 33

Health Workforce and International Migration

CAN NEW ZEALAND COMPETE?

Pascal Zurn^{*}, Jean-Christophe Dumont

JEL Classification: F22, I10, J12

**HEALTH WORKFORCE AND
INTERNATIONAL MIGRATION: CAN NEW
ZEALAND COMPETE?**

Pascal Zurn and Jean-Christophe Dumont

33

Unclassified

DELSA/HEA/WD/HWP(2008)3

Organisation de Coopération et de Développement Economiques
Organisation for Economic Co-operation and Development

22-May-2008

English text only

**DIRECTORATE FOR EMPLOYMENT, LABOUR AND SOCIAL AFFAIRS
HEALTH COMMITTEE**

Cancels & replaces the same document of 13 May 2008

Health Working Papers

OECD HEALTH WORKING PAPER NO. 33

**HEALTH WORKFORCE AND INTERNATIONAL MIGRATION:
CAN NEW ZEALAND COMPETE?**

Pascal Zurn and Jean-Christophe Dumont

JEL classification: I10, F22, J2

JT03246266

Document complet disponible sur OLIS dans son format d'origine
Complete document available on OLIS in its original format

DELSA/HEA/WD/HWP(2008)3
Unclassified

English text only

DIRECTORATE FOR EMPLOYMENT, LABOUR AND SOCIAL AFFAIRS

OECD HEALTH WORKING PAPERS

This series is designed to make available to a wider readership health studies prepared for use within the OECD. Authorship is usually collective, but principal writers are named. The papers are generally available only in their original language – English or French – with a summary in the other.

Comment on the series is welcome, and should be sent to the Directorate for Employment, Labour and Social Affairs, 2, rue André-Pascal, 75775 PARIS CEDEX 16, France.

The opinions expressed and arguments employed here are the responsibility of the author(s) and do not necessarily reflect those of the OECD

**Applications for permission to reproduce or translate
all or part of this material should be made to:**

**Head of Publications Service
OECD
2, rue André-Pascal
75775 Paris, CEDEX 16
France**

Copyright OECD 2008

ACKNOWLEDGEMENTS

The authors would like to express their gratitude to Christine Le Thi for providing statistical support, as well as to John Martin, Martine Durand, Peter Scherer, Jean-Pierre Garson, Simon Chapple and other colleagues for their valuable comments. The authors are also grateful to all the experts who kindly accepted to meet with the authors during the OECD secretariat mission in New Zealand and provided very valuable information and data.

The OECD Secretariat thanks the New Zealand Department of Labour for their financial contribution and support in organizing and assisting the OECD secretariat mission in New Zealand.

This paper is one in a series of case studies undertaken as part of a project on Health Workforce and International Migration. The project was jointly undertaken by the OECD and the World Health Organization: one of the co-authors is a WHO official who was seconded to the OECD to work on the project. We are grateful to the Swiss authorities for the financial support which supported this secondment.

The Health Workforce and International Migration project has received direct financial support from Australia and Canada, and has benefitted from voluntary contributions in support of the Health Systems Performance work programme from other member countries.

The Health Workforce and International Migration project has been co-financed by a grant provided by the Directorate General for Health and Consumer Protection of the European Commission. Nonetheless, the views expressed in this report should not be taken to reflect the official position of the European Union.



SUMMARY

1. This paper examines health workforce and migration policies in New Zealand, with a special focus on the international recruitment of doctors and nurses.
2. The health workforce in New Zealand, as in all OECD countries, plays a central role in the health system. Nonetheless, maybe more than for any other OECD country, the health workforce in New Zealand cannot be considered without taking into account its international dimension.
3. New Zealand has the highest proportion of migrant doctors among OECD countries, and one of the highest for nurses. There is no specific immigration policy for health professionals, although the permanent and temporary routes make it relatively easy for doctors and nurses who can get their qualification recognised to immigrate in New Zealand. At the same time, New Zealand also has high emigration rates of health workers, mainly to other OECD countries. International migration is thus at the same time an opportunity and a challenge for the management of the human resources for health (HRH) in New Zealand.
4. Increasing international competition for highly skilled workers raises important issues such as sustainability and ability to compete in a global market. In this context, new approaches to improve the international recruitment of health workers, as well as developing alternative policies, may need to be considered. As for international recruitment, better coordination and stronger collaboration between main stakeholders could contribute to more effective and pertinent international recruitment.

RESUMÉ

5. Ce document examine les effectifs de professionnels de la santé et les politiques migratoires de la Nouvelle-Zélande, en se concentrant plus particulièrement sur le recrutement international de médecins et d'infirmières.

6. En Nouvelle-Zélande comme dans tous les pays de l'OCDE, ces professionnels jouent un rôle crucial dans le système de santé. Dans ce pays, pourtant, peut-être plus que dans tout autre pays de l'OCDE, on ne saurait étudier les travailleurs de la santé sans prendre en compte la dimension internationale de cette population.

7. La Nouvelle-Zélande compte la proportion de médecins immigrés la plus élevée de tous les pays de l'OCDE, celle des infirmières immigrées comptant aussi parmi les plus fortes. Le pays ne s'est pas doté d'une politique d'immigration particulière concernant ces professions même si Les filières d'immigration permanente ou temporaire font qu'il est relativement facile pour les médecins et les infirmières qui parviennent à faire reconnaître leurs diplômes d'aller s'installer en Nouvelle-Zélande. En parallèle, le pays présente également des taux élevés d'émigration de travailleurs de la santé (principalement vers les autres pays de l'OCDE). En matière de gestion des ressources humaines de la santé, les migrations internationales représentent donc à la fois une chance et une difficulté pour la Nouvelle-Zélande.

8. La concurrence internationale croissante pour attirer des travailleurs hautement qualifiés soulève des problèmes importants comme la soutenabilité et la capacité à affronter cette concurrence sur un marché mondialisé. Dans ce contexte, il faudrait peut-être réfléchir à de nouvelles stratégies pour améliorer le recrutement international de travailleurs de la santé et élaborer d'autres mesures possibles. Quant à ce recrutement, l'amélioration de la coordination et le renforcement de la collaboration entre les principales parties prenantes pourraient contribuer à le rendre plus effectif et plus approprié.

TABLE OF CONTENTS

SUMMARY	4
RESUMÉ	5
INTRODUCTION	8
Main findings	8
1. OVERVIEW	10
Health workforce density: occupational, regional and trend variations	10
Demographic characteristics of the health workforce: feminization and ageing	14
Immigrant and expatriate health workforce: New Zealand in a global context	16
2. HEALTH WORKFORCE MANAGEMENT: TAKING ADVANTAGE OF INTERNATIONAL MOBILITY	21
2.1 Health Care reforms and health workforce planning	21
Health care reforms	21
Health Workforce planning	22
2.2 Education policies and recognition of foreign qualification	25
Medical Education	25
Nursing and midwifery education	28
Recognition of foreign-medical qualifications	30
2.3 National and international recruitment	33
Estimating—and responding to—shortages of health personnel	34
International recruitments: immigration policy as a management tool of the health workforce?	35
2.4 Retention and emigration	38
Retention and turnover in the workforce	38
Retention in, and return to, New Zealand	39
2.4 Retirement	42
3. FUTURE PERSPECTIVES	43
4. CAN NEW ZEALAND COMPETE?	44
CONCLUDING REMARKS	45
BIBLIOGRAPHY	47
ANNEX 1	50
Foreign-born health professionals by main country or region of origin, New Zealand	50
ANNEX 2	54
Medical education pathway in New Zealand	54
ANNEX 3	55

Work and residence permits for medical doctors and nurses in New Zealand.....	55
---	----

Figures

Chart 1a. Practising doctors per 1 000 population in OECD countries, 2004.....	11
Chart 1b. Practising nurses per 1 000 population in OECD countries, 2004.....	12
Map 1. Regional distribution of registered nurses and midwives and medical practitioners in New Zealand, density by 100 000 population.	12
Chart 2a. Evolution of practising doctors in New Zealand and OECD average, 1980-2006.....	13
Chart 2b. Evolution of practising nurses in New Zealand and OECD average, 1980-2004.....	13
Chart 3b. Age distribution of registered nurses and midwives in New Zealand, 1994-2004.....	14
Chart 4. Percentage of women medical practitioners in New Zealand, 1980-2006.....	15
Chart 5. Foreign-born doctors, nurses and highly skilled in New Zealand (15-64), selected years, 1996-2006, percentages.....	16
Table 1. Main 15 countries of birth of immigrant health professionals working in New Zealand (15+), 2001.....	17
Chart 6. Foreign-trained doctors and nurses in New Zealand, selected years 1985-2005, numbers and percentages.....	18
Table 2. Health professionals born in New Zealand working in other OECD countries, main countries of residence, circa 2000.....	18
Chart 7. Expatriation rates and percentages of foreign-born doctors and nurses, selected OECD countries, circa 2000.....	19
Chart 8. Expatriation rates of health professionals and highly skilled, selected OECD countries, circa 2000.....	20
Chart 9. Health expenditures per capita in New Zealand and OECD countries, 1990-2004.....	22
Chart 10. Yearly number of intake and medical graduates, New Zealand, 1986-2006.....	26
Chart 11. Average number of medical graduates per 100 000 population, OECD countries, 1995-2004.....	27
Chart 12. Yearly number of nursing graduates, New Zealand, 1996-2004.....	28
Chart 13. Average number of nursing graduates per 100 000 population, OECD countries, 1996-2003.....	29
Chart 14. Employment rate by main region of birth for people (15-64) with Post-School qualification in medical field, percentages, New Zealand, 2001 and 2006.....	32
Chart 15. Yearly registrations of foreign educated doctors and registered nurses and midwives, 1996-2005, numbers and percentages, of all new registrations in New Zealand.....	37
Chart 16. Percentage of New Zealand graduates and overseas-trained doctors retained in the New Zealand workforce 1990, 1995 and 2000.....	40
Chart 17. Yearly long term and permanent arrivals and departures of health professionals (except nursing) and nurses, 1992-2006.....	40
Chart 18. Yearly permanent and long term arrivals of New Zealand doctors and nurses to Australia, 1998-2006.....	41

Boxes

Box 1. Māori health workforce.....	15
Box 2. Self-sufficiency for the medical workforce in New Zealand?.....	23
Box 3. Which role for health workforce planning?.....	24
Box 4: The Health Practitioners Competence Assurance Act 2003.....	30
Box 5. Type of medical registration.....	33
Box 6. Job Vacancy Monitoring Programme.....	34
Box 7. Occupational Shortage Lists.....	36

INTRODUCTION

9. The health workforce in New Zealand, as in all OECD countries, plays a central role in the health system. In New Zealand, it accounts for about 70% of the costs of delivering public health services and 5.5% of the workforce (Health Workforce Advisory Committee, 2002; *OECD Health Data, 2007*). Despite the key role of the health workforce in the health system, it has not been at the core of the various health system reforms in New Zealand. Nonetheless, health workforce issues have captured more attention recently, and there is now a growing recognition of their importance.

10. Maybe more than for any other OECD country, the health workforce in New Zealand cannot be considered without taking into account its international dimension. New Zealand has the highest proportion of migrant doctors among OECD countries, and one of the highest for nurses. At the same time, New Zealand also has high emigration rates of health workers, mainly to other OECD countries. International migration is thus at the same time an opportunity and a challenge for the management of the human resources for health (HRH) in New Zealand. This emphasises the need to better understand and strengthen the interactions between training, career development and international migration of health workers, a necessity reinforced by the increasing international competition for talent, and in particular health professionals.

11. This paper examines health workforce and migration policies in New Zealand, with a special focus on the international recruitment of doctors and nurses. In the first section, an overview of the health workforce is presented. Health workforce policies are discussed in the second section with a focus on international mobility. The third section addresses more specifically the current and future challenges related to in- and out-migration.

Main findings

- With 2.2 practising physicians per 1 000 population, New Zealand has a lower density than the OECD average (3.1%). The reverse is true for nurses (9.5% as compared to 8.7%). The geographical distribution of doctors and nurses is an important issue in New Zealand, as in many other OECD countries. Ageing and feminization of the health workforce are two other features that are shared by many other countries.
- The importance of in- and out-migration is a key characteristic of the health workforce in New Zealand. New Zealand has the highest ratios of foreign-born and foreign-trained doctors in OECD countries (respectively 52% and 36% in 2005-06) and among the highest for nurses (29% and 24%, respectively). New Zealand also has the third highest and the second highest expatriation rates for doctors and nurses (28.5% and 23%, respectively).
- The number of New Zealand-born doctors living in other OECD countries represents half the number of foreign-born doctors in New Zealand. The number of New Zealand-born nurses living in other OECD countries is matched by the number of foreign-born nurses in New Zealand (about 7 500).

- There is no specific immigration policy for health professionals, although the permanent and temporary routes make it relatively easy for doctors and nurses who can get their qualification recognised to immigrate in New Zealand.
- The increasing use of temporary migration gives rise to a large number of short-term stays of health workers in New Zealand, in particular for doctors. While this is certainly a good policy to address workforce shortages in rural areas, short-term migration raises issues in terms of turnover. More generally, in the New Zealand context, retention of health professionals is a key issue because attrition rates (for doctors) and turnover rates (for nurses) tend to be quite high.
- Despite repeated calls for “self-sufficiency” in recent official reports, New Zealand trains proportionally less medical graduates than OECD countries on average. It also has very few foreign medical students. As for nurses, the training rate is close to the OECD average, but out-migration, notably to Australia, partly offsets this effort.
- A broad portfolio of policies, in line with the recommendations of the Health Workforce Advisory Committee and more recently of the Health Workforce Taskforce, including improving salaries and working conditions, developing further skill-mix approaches, attracting back health workers who left New Zealand, reinforcing the links between education and management of the health workforce policies, would need further consideration.
- Strengthening coordination between the main actors—the Department of labour, the Ministry of Health, the Ministry of Education, and the Tertiary Education Commission, but also with and between District Health Boards (DHBs)—could help to better address short and long-term shortages.
- To date, immigration has been a very significant part of the supply of health workers in New Zealand. However, further increase in the number of overseas-trained health professionals might place New Zealand in a delicate position, as it could become too dependent on immigration in a context where many other OECD countries are also looking to recruit foreign doctors and nurses.

1. OVERVIEW

12. While the evolution of the health workforce over the past 25 years shows similar trends to those observed for the OECD as a whole, density for doctors tends to be lower than the OECD average but it is higher for nurses. Recent changes in terms of the regional distribution, gender mix and ageing of the health workforce are mostly shared with other OECD countries. At the same time, New Zealand is characterised by both large immigration and emigration of doctors and nurses.

Health workforce density: occupational, regional and trend variations

13. As depicted in Chart 1a, with 2.2 practising physicians per 1 000 population, New Zealand is below the OECD average of 3.1‰. As for nurses, with 9.5 practising nurses per 1 000 population, New Zealand is slightly above the OECD average of 8.7‰. Results are more contrasted in terms of skill mix, as the number of nurses per doctor amounts to 4.3 which is significantly higher than the OECD average of 2.8. As far as other health professionals are concerned, the population ratio for pharmacists is quite close to the OECD average at 0.75‰, while the corresponding figure for dentists is 50% lower than the OECD average (0.4‰ as compared to 0.62‰).

14. Because the population of New Zealand is relatively small (about 4 million), the moderate density figures translate into low numbers of doctors and nurses. Indeed, it is estimated that there are 9 000 practising physicians and around 38 000 practising nurses and midwives in New Zealand (OECD, *Health Data*, 2006). About a third of the practising physicians are in general practice. While General Practitioners are essentially working in ambulatory practices, this is not the case for specialists who mainly work in public hospitals. Moreover, the proportion of specialists working in public hospitals increased over time, from 49% in 2000 to 74% in 2005 (Medical Council, 2007). In some specialities such as vascular surgery, neurosurgery or paediatric surgery, no more than 20 physicians are registered.⁴ In this context, if a few specialists opt to emigrate this can have a major impact on health care delivery.

15. New Zealand is also characterised by significant imbalances in the geographic distribution of health professionals, as are most OECD countries. The lowest ratios of medical practitioners to population are found in rural regions in the North Island and in the West coast of the South Island (see Map 1). On the other hand, the highest ratios are in the larger urban regions, mainly Auckland, and Capital and Coast (Wellington and Kapiti) regions.

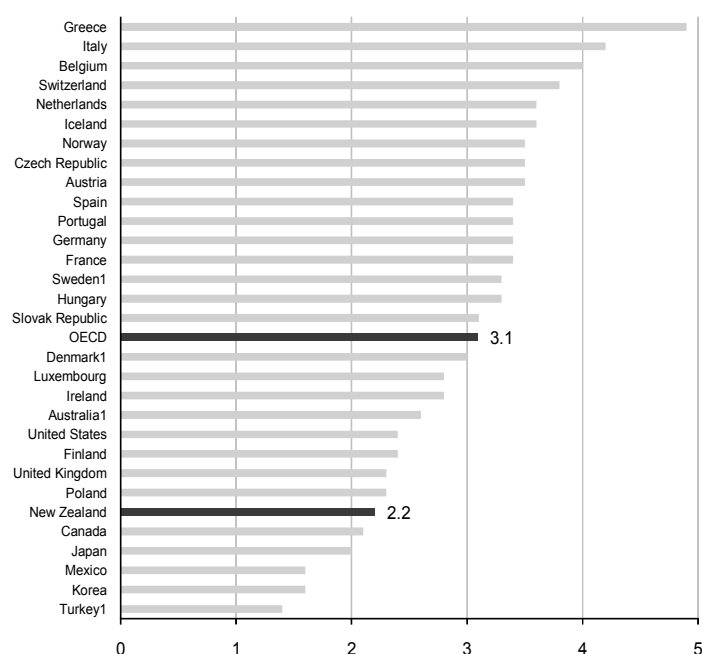
16. The differences are even more marked when performing the analysis on the basis of Territorial Authorities⁵. While in the cities of Auckland, Dunedin and Hamilton, there are more than 400 full-time-equivalent doctors per 100 000 population, the corresponding figure is below 40 in the districts of Otago, Wairoa, Westland, Waimakariri and Southland (Medical Council of New Zealand, 2004). A large part of

⁴ There are only five specialists registered in breast medicine, 12 in rehabilitation medicine and 13 in oral and maxillofacial surgery.

⁵ There are 74 territorial authorities in New Zealand, including 16 city councils and 58 district councils. They provide local services.

these differences, notably for specialists, can be attributed to the presence of hospitals in cities. Geographic distribution of registered nurses appears to be more even, complementing to some extent the “lack” of other types of health professionals in some regions (e.g. West Coast).

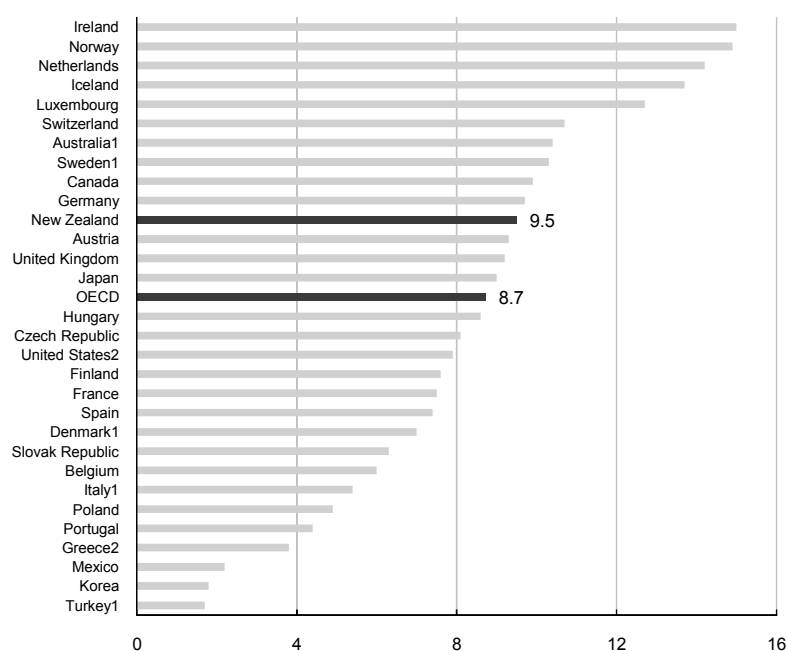
Chart 1a. Practising doctors per 1 000 population in OECD countries, 2004



Note: (1) 2003

Data for New Zealand refer to general practitioner and specialist and others physicians who work in industry, administration and research

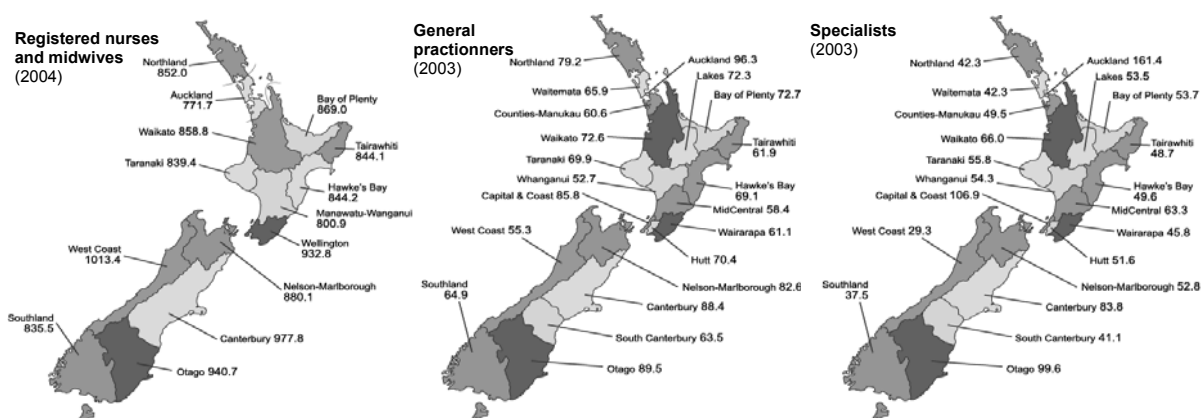
Source: OECD Health Data 2006

Chart 1b. Practising nurses per 1 000 population in OECD countries, 2004

Note: (1) 2003; (2) 2002

Data for New Zealand refer to enrolled and registered nurses according to the annual practising certificate data.

Source: OECD Health Data 2006

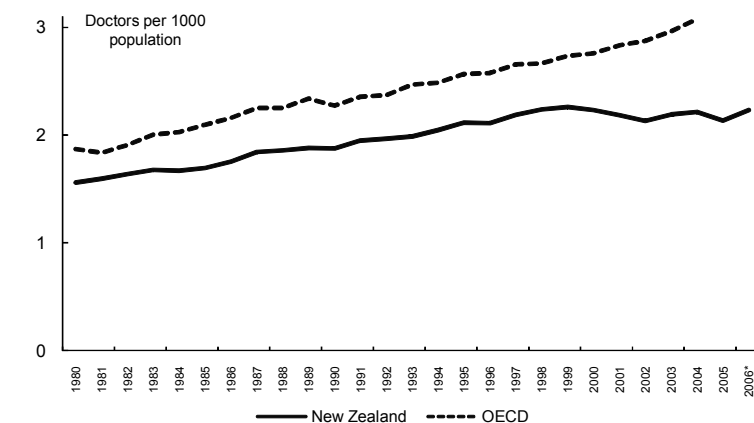
Map 1. Regional distribution of registered nurses and midwives and medical practitioners in New Zealand, density by 100 000 population.

Source : New Zealand Health Information Service

17. Over the past decades, the number of health workers has increased in New Zealand (see Chart 2). Between 1980 and 2004, the number of active medical practitioners grew from 1.56 per 1 000 population to 2.22 in 2004, corresponding to an average annual growth rate of 1.5%. However, this increase is lower than for the OECD as a whole (2.1%), reinforcing the discrepancy in terms of density.

18. The density of nurses (registered nurses and enrolled nurses altogether) grew slightly faster from 6.1‰ to 9.5‰ over the same period (1980-2004).⁶ In contrast to a more steady increase in the number of medical practitioners, changes in the nursing workforce are characterised by significant fluctuations in certain periods and a relative stability in density over the past decades.

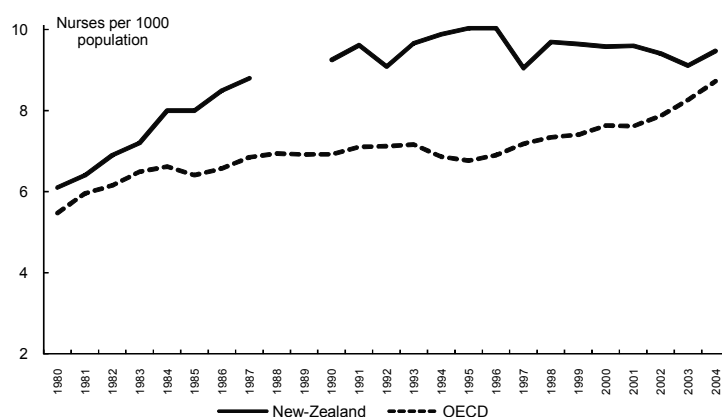
Chart 2a. Evolution of practising doctors in New Zealand and OECD average, 1980-2006



Note: OECD average comprises all countries for which data are available for each year

Sources: OECD Health Data 2006 for the OECD average and New Zealand Health Information Service

Chart 2b. Evolution of practising nurses in New Zealand and OECD average, 1980-2004



Note: Nurses in New Zealand include active registered nurses, midwives and active enrolled nurses

OECD average comprises all countries for which data are available for each year

Sources: OECD Health Data 2006 for the OECD average and New Zealand Health Information Service

⁶

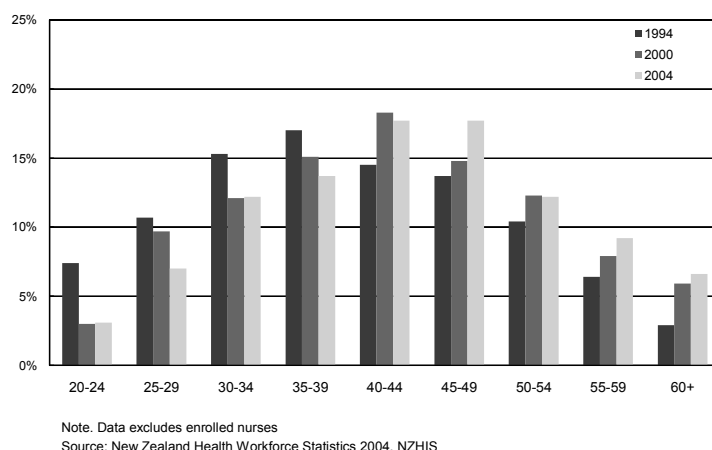
These trends are not specific to New Zealand, as OECD Health Data suggests that in 17 out of 28 OECD countries for which data are available the ratio of nurses to doctors in 1990 was above that in 2005 (*OECD Health Data*, 2007).

Demographic characteristics of the health workforce: feminization and ageing

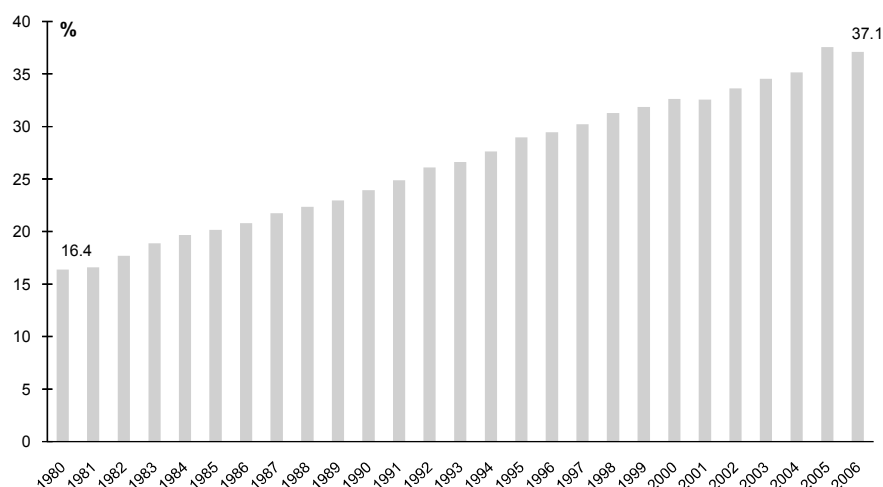
19. New common trends have emerged in the health workforce of OECD countries in recent years, which may impact both the supply and the demand for health care. While health workforce ageing, feminization and new working patterns may result in a reduction in the supply of health workers, population ageing and technological changes are anticipated to increase the demand for health care services.

20. With regard to the ageing of its health workforce, New Zealand is not an exception: the average age is estimated at 45 for nurses and 44 for doctors. In 1990, about 35% of medical practitioners were under 35 years of age but by 2003 this percentage had fallen to 23% (see Chart 3a). This trend is even more marked for general practitioners and for registered nurses and midwives.

Chart 3b. Age distribution of registered nurses and midwives in New Zealand, 1994-2004



21. As illustrated in Chart 4, feminization of the medical workforce has been one of most notable changes over the past three decades in New Zealand. Women doctors now represent 37% of all medical practitioners compared to 16.4% in 1980. They also count for about 50% of the current medical trainees (Health Workforce Advisory Committee, 2002; Medical Council of New Zealand, 2004). The feminisation of the medical workforce brings changes in working patterns as female doctors tend to concentrate more in primary care (family medicine, paediatrics, and psychiatry) and to work more part-time than their male counterparts. However, growing numbers are training in specialist branches such as radiation, oncology, pathology and several areas of surgery (Health Workforce Advisory Committee, 2002). In comparison, the nursing workforce is still quite gender-biased with only about 6% of male registered nurses and midwives.

Chart 4. Percentage of women medical practitioners in New Zealand, 1980-2006

Source: New Zealand Medical Workforce Statistics, NZHIS

22. As a result of multiple factors, including legislative changes⁷, doctor's working hours have decreased over time in most OECD countries. In New Zealand, the average hours worked per week by medical practitioners decreased from 48 in 2001 to 45.8 in 2004 (Medical Council of New Zealand, 2001; , Medical Council of New Zealand, 2004). The results of the 2005 Royal New Zealand College of General Practitioners (RNZCGP) Membership Survey suggest that among the 25-45 age cohort, very few GPs really want to be in full-time general practice, whether it is salaried or self-employed. There is a preference for locum work, part-time general practice, sub-specialties, non-GP medical work, and even non-medical work. One reason for this could be the desire for more balance between work and private life. This trend is shared by many OECD countries. It is expected to continue and accentuate as the workforce is ageing and feminising. This will probably contribute to reinforce the future need for medical practitioners and it raises critical issues with regard to ways of ensuring continuity of service.

Box 1. Māori health workforce

The indigenous Māori population is underrepresented in the health workforce. While Māori population represented about 15% of New Zealand population in 2003, Māoris made up only 2.7% of the medical workforce and 6.3% of the nursing workforce. Despite the low proportion of Māori in the health workforce, their number is increasing. Policies have been developed in order to increase their participation. Specific Māori health workforce plans have been established. At national level, the Raranga Tupuake Māori Health Workforce Development Plan has strategies to increase the number of Māori in the workforce at all levels, to expand the skill base of Māori currently in the workforce and enable equitable access for Māori to future training opportunities. The latter includes collaboration between the Minister of Health and traditional Māori healers to explore options for training and career pathways. District Health Boards as major employers also have a key role in Māori workforce development. For instance, the MidCentral District Health Board developed a Māori Health Workforce Strategy which aims, among other things, to involve Māori at all levels including planning, development and the delivery of health care programs and services.

Sources: Health Workforce Advisory Committee, 2006; *Nursing Council of New Zealand, 2003*; Ministry of Health (2005) *Raranga Tupuake Māori Health Workforce Development Plan Discussion document*, MoH, Wellington; MidCentral District Health Board (2005) *Māori Health Workforce Strategy*, Mid Central DHB.

⁷

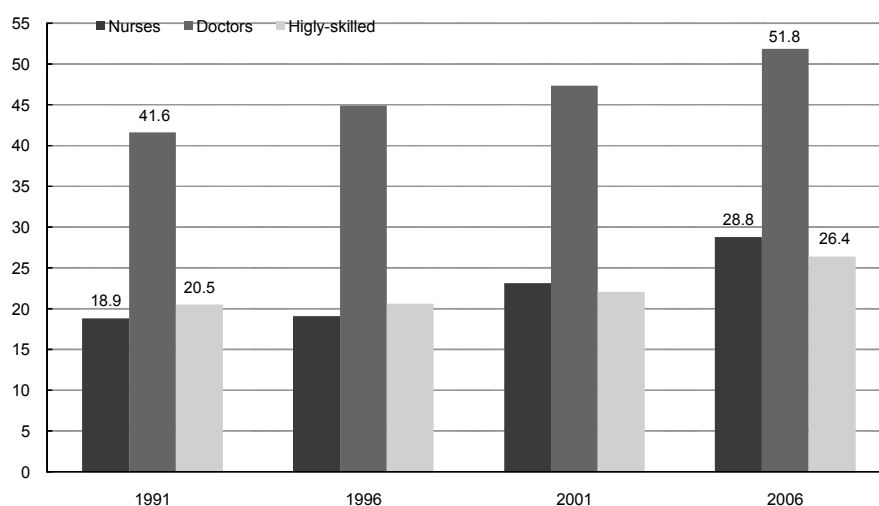
One important evolution refers to recent legislative changes on working hours, notably for junior doctors. New Zealand has been a pioneer in this area because, since the implementation of the New Zealand Resident doctors' (NZRDA) Multi-Employer Collective Agreement (MECA) in 1985, junior doctors have been limited to 72 hours of work per week (maximum 16 consecutive hours). The current agreement between employers and trade unions is to work towards a 60-hour work week limit (see Landrigan 2006).

Immigrant and expatriate health workforce: New Zealand in a global context

23. A major feature of the New Zealand health workforce is the importance of immigrant health workers. According to the 2006 census, about 52% of the medical doctors (5 200), 29% of the nurses (10 500) and 39% and 23% of the dentists (590) and pharmacists (720), respectively were born abroad (see Annex 1).

24. Immigration not only plays an important role in shaping New Zealand health workforce but its role in clearly increasing (see Chart 5). The share of foreign-born increased by 10 percentage points among doctors and nurses over the past 15 years. This increase was larger than the equivalent increase in the foreign-born among the high-skilled workforce in New Zealand.

Chart 5. Foreign-born doctors, nurses and highly skilled in New Zealand (15-64), selected years, 1996-2006, percentages



Source: New Zealand Census of Population and Dwellings, Statistics New Zealand

Notes: Nurses refer to nursing and midwifery professionals and nursing associate professionals. Unknown place of birth data are excluded from calculations of percentages. The professionals are defined by NZSCO99 (occupations) 1, 2 and 3.

Table 1. Main 15 countries of birth of immigrant health professionals working in New Zealand (15+), 2001

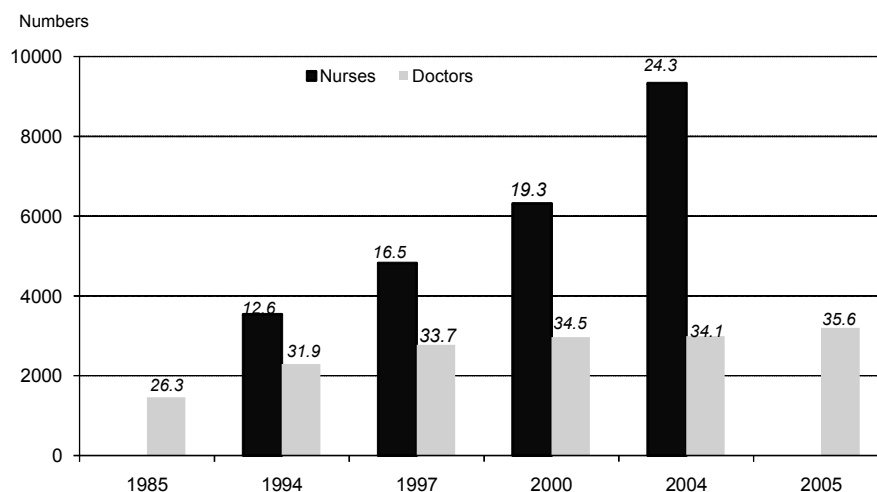
Nurses		Health professionals (except nurses)				
ISCO→	223 & 323	ISCO→	222	2221	2222	2224
Country of birth ↓		Country of birth ↓	Doctors	Dentists	Pharmacists	
United Kingdom	3291	United Kingdom	2046	1512	135	147
Australia	615	South Africa	702	555	24	60
South Africa	432	India	330	273	30	18
Philippines	426	Sri Lanka	300	273	15	6
Fiji	405	Australia	282	186	12	30
Netherlands	309	Malaysia	213	141	27	36
Samoa	285	China	174	111	24	27
Ireland	186	Fiji	168	102	9	42
China	177	Iraq	147	96	27	15
Tonga	171	United States	123	93	6	6
Malaysia	138	Canada	90	66	6	6
Canada	135	Germany	81	57	3	3
India	114	Netherlands	78	42	9	3
Germany	111	Zimbabwe	75	60	3	6
United States	105	Ireland	63	51		3
Total foreign-born	7698	Total foreign-born	5790	4215	426	507
Total native-born	25425	Total native-born	9207	4779	999	1797
Foreign-born (%)	23.2	Foreign-born (%)	38.6	46.9	29.9	22.0

Source: New Zealand Census of Population and Dwellings, authors' calculations

25. As of 2001, about 43% and 36% of the immigrant nurses and doctors were from the United Kingdom, which is the main origin country (see Table 1). The second most important origin country is Australia for nurses (8%) and South Africa for doctors (13%). OECD countries as a whole account for about half of the immigrant doctors and 65% of the nurses. Pacific Islanders also make a significant contribution to the New Zealand health workforce, notably for nurses, especially taking into account the small size of their countries of origin.

26. The information based on place of birth could give a distorted image of the role of international migration in shaping the health workforce if a significant share of these foreign-born were actually *trained* in New Zealand and not in their origin country. In the case of New Zealand, however, the two indicators are very close for nurses. Around 24% of nurses in New Zealand were foreign-trained in 2004 (see Chart 6). This is not the case for doctors, as approximately 36% of active medical practitioners in New Zealand were foreign-trained in 2005⁸.

⁸ Part of the discrepancy for medical doctors is likely to be due to the fact that overseas medical graduates working on temporary registration are not included in the statistics

Chart 6. Foreign-trained doctors and nurses in New Zealand, selected years 1985-2005, numbers and percentages

Sources: New Zealand Health Information Service and Medical Council of New Zealand

27. Another key feature of the New Zealand health workforce relates to the importance of out-migration. Travelling overseas is viewed as a positive thing and an integral part of the lifestyle choices of many young New Zealanders. Health professionals are certainly no exception in this respect. Circa 2000, the number of New Zealand-born individuals living in other OECD country amounted to about 1 900 for doctors, 7 600 for nurses, 410 for pharmacists and 330 for dentists (see Table 2). In total, we estimate that 23% of New Zealand-born nurses and 29% of doctors were working in another OECD country in their occupation. To a certain extent, these figures might even underestimate the importance of out-migration, as they do not cover emigration of New Zealanders born outside New Zealand and do not include people who were trained as health professionals but are working in another occupation overseas.

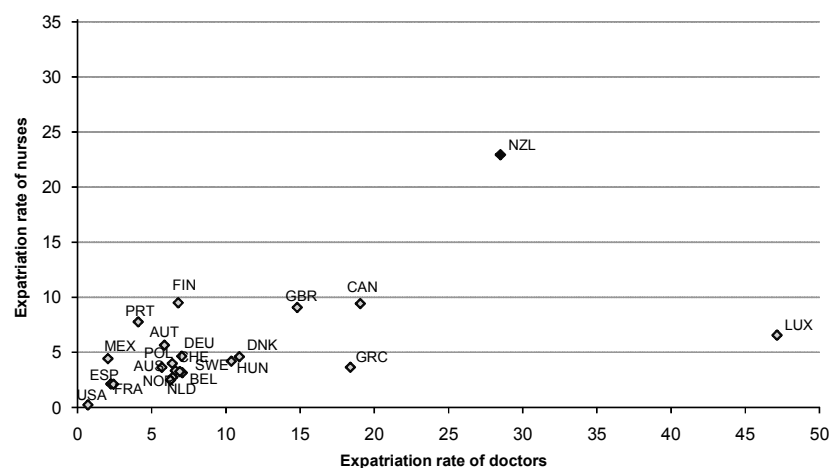
Table 2. Health professionals born in New Zealand working in other OECD countries, main countries of residence, circa 2000

ISCO→ Country of residence ↓	Nurses 223 & 323	Health professionals (except nurses)			
		222	2221 Doctors	2222 Dentists	2224 Pharmacists
Australia	5443	2566	1086	168	293
Canada	295	135	115	20	
Ireland	60	18	6		6
United Kingdom	1283	774	398	130	104
United States	405	286	245	10	10
Total	7564	3854	1904	328	413
Expatriation rate (%)	22.9	29.5	28.5	24.7	18.7

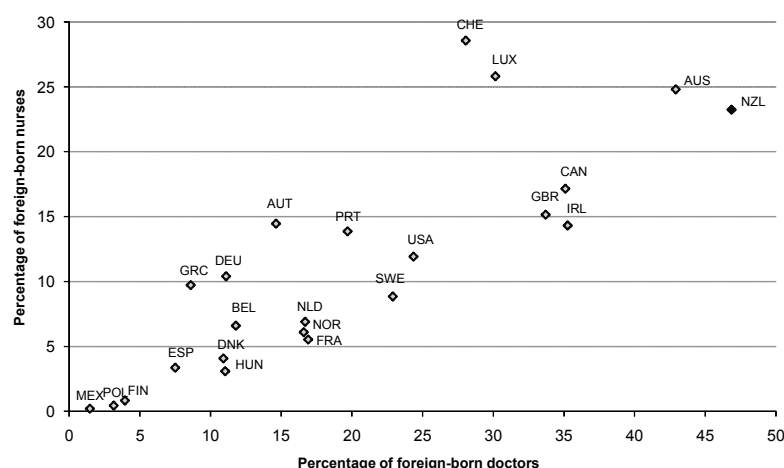
Note: Total refers to 14 OECD countries

Source: OECD database on immigrants and expatriates

Chart 7. Expatriation rates and percentages of foreign-born doctors and nurses, selected OECD countries, circa 2000



Source: Dumont and Zurn (2007)



Source: Dumont and Zurn (2007)

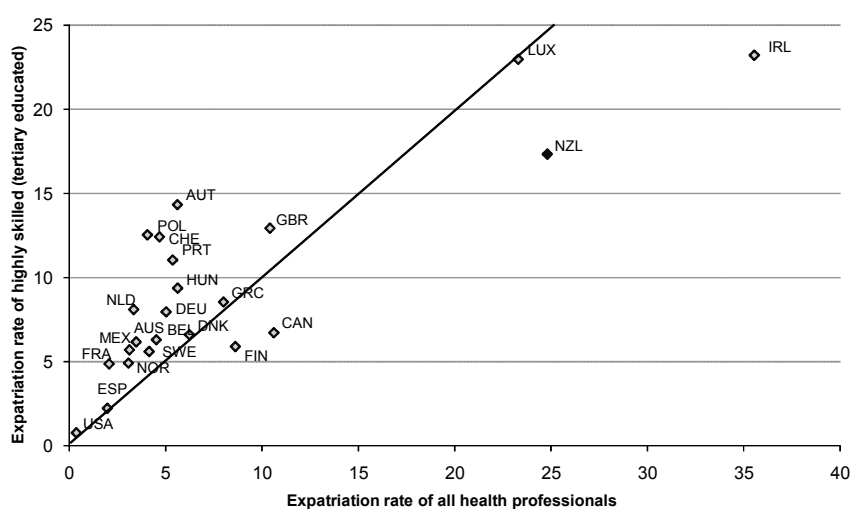
28. Australia is the main destination country for New Zealand migrants. Nonetheless, its importance varies across health professions. While it is estimated that 51% of New Zealand-born dentists living abroad are in Australia, this figure rises to 72% for nurses. The United Kingdom comes second, followed by the United States and Canada. These four countries capture more than 98% of the emigration to other OECD countries of New Zealand-born health professionals.

29. In comparison to other OECD countries, New Zealand stands out both in terms of immigration and emigration. In 2001, among OECD countries, New Zealand had the highest share of foreign-born doctors. It is followed by Australia, Ireland, Canada, and the United Kingdom, with percentages ranging between 34% and 43%. By contrast, figures range from a low of 1.5% to 4% in Mexico, Poland and Finland. For nurses, figures are generally lower but New Zealand is still near top of the list. Switzerland, Luxembourg, Australia and New Zealand have the highest share of foreign-born nurses ranging from

23.2% to 28.5%. At the same time, New Zealand also has one of the highest expatriation rates among OECD countries, only exceeded by Ireland (see Chart 7).

30. In comparison to the highly skilled in general, it was already pointed out that the share of foreign-born tended to be higher amongst health professionals than among the highly skilled group as a whole (see Chart 5). Chart 8 compares the expatriation rate of health professionals and of people holding a tertiary degree for selected OECD countries around 2000. In the case of New Zealand, the former outstrips the latter, meaning that proportionally more doctors and nurses emigrate than other highly skilled workers to work in other OECD countries. This is also true for Canada, Finland and Ireland, but not in most other OECD countries.

Chart 8. Expatriation rates of health professionals and highly skilled, selected OECD countries, circa 2000



Sources: Dumont and Zurn (2007) and OECD database on immigrants and expatriates

31. The previous results clearly show the magnitude of out-migration for health professionals. Tables 1 and 2 show that the number of New Zealand-born doctors living in other OECD countries is equivalent to approximately 50% of the number of foreign-born doctors in New Zealand. The results for nurses are even more striking, as the number of New Zealand-born nurses living in other OECD countries is almost equivalent to the number of foreign-born nurses in New Zealand. In other words, one could argue that immigration replaces on a one to one basis the “lost New Zealand-born nurses” due to emigration.

2. HEALTH WORKFORCE MANAGEMENT: TAKING ADVANTAGE OF INTERNATIONAL MOBILITY

32. In New Zealand as in a lot of countries, many factors contribute to shape the health workforce and the number of institutional stakeholders involved in policy development is large. In the following, a brief overview of recent health care reforms and health workforce planning is presented before focusing on education, recruitment and retention policies, with a special focus on the role of international migration.

2.1 Health Care reforms and health workforce planning

Health care reforms

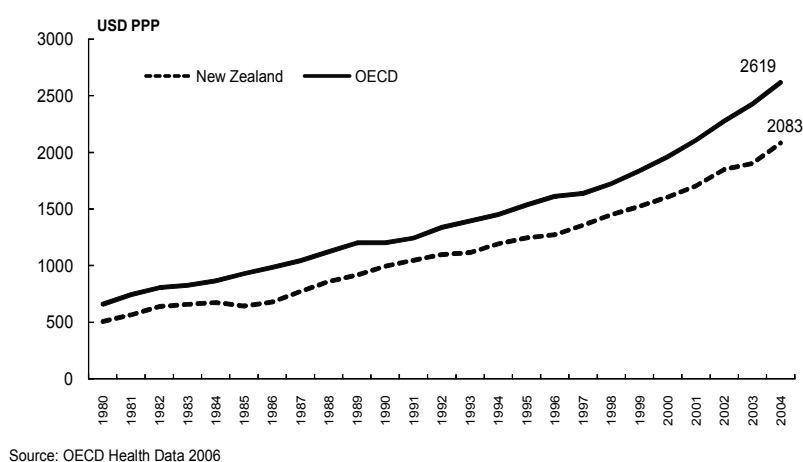
33. The New Zealand health system has always remained predominantly publicly funded, mainly through taxation. The importance of the role of public funding is emphasised by the Social Security Act 1938 which marked the introduction of a comprehensive health system that mandated the provision of free care for all (French *et al.*, 2001). This law intended to create a national health service, universally accessible and state-funded. Hospitals became publicly owned, providing fully subsidized treatment to patients. However, medical practitioners insisted on remaining independent and finally succeeded in retaining their private status. The Social Security Act has had a strong and long-term influence on the New Zealand health system and it was not until the 1980s that major reforms took place. However, the health workforce, and in particular the international mobility of health professionals, were not among the main priorities of these reforms. Four time periods can be identified for the health reform priorities in New Zealand (Easton, 2002; Ashton 2002, 2005; Gauld, 2003).

- **First period: 1983-1992:** During the 1970s, there was a perception that the health system was becoming increasingly complex and needed reform. Then, in the 1980s, decentralization was introduced with the creation of 14 Area Health Boards (AHBs) dealing with health care funding and service management. It was expected that the introduction of the Areas Health Boards would allow efficiency gains, but health expenditures per capita continued to grow (see Chart 9), particularly primary medical care subsidies. The AHBs were initially introduced by the National Government in 1983, but their role was expanded under the Labour Government (1984-1990) in the context of public sector reforms in New Zealand.
- **Second period: 1993-1996:** During this period, a market-oriented reform was introduced by the National Government (1990-1996). In particular, the purchaser-provider split model was adopted. Under this system, purchasers used public funds to contract with competing public and private providers for the provision of health services. Purchasers were encouraged to buy services from the best value providers. In addition, budgets were integrated for primary and secondary services under one purchaser. However, these reforms were not necessarily supported by individuals working in the health system and the outcomes failed to match expectations, particularly in terms of securing efficiency gains in the hospital sector.
- **Third period 1996-1999:** At the end of the 1990s, New Zealand's first election under proportional representation produced a National-led coalition government (1996-1999) which abandoned the idea of competition as a main driver for the health system. Instead, the key guiding principle of collaboration instead of competition was introduced.

- **Fourth period: 2000 and onwards:** One key element of this restructuring process, under the leadership of a Labour led coalition government (2000 up to present), set out in the New Zealand Public Health and Disability Act 2000 is the establishment of 21 District Health Boards (DHBs). Each DHB is responsible for providing or purchasing health services, including primary care, for the residents in its district. The DHBs are financed by the Ministry of Health on the basis of a formula accounting for the demographics of each district. The new health system combines centralised and decentralised components. While funding has remained centralised—the Ministry of Health is the key funding agent in the health system—health needs assessment, planning, provision and purchasing of health care are decentralised through the activities of the DHBs.

In the primary sector, in 2001, the implementation of the Primary Health Care Strategy and the creation of Primary Health Organizations (PHOs) was an important change to the largely hospital-centered string of reforms over the past 20 years. PHOs are non-profit organizations which contract with DHBs to provide a comprehensive set of preventive and treatment services for their enrolled population. The first PHOs were formed in 2001 and patient enrolment began in 2002. As of July 2007, there were 82 PHOs, covering 3.9 million people, or 97-98% of the New Zealand population. PHOs are funded for each person enrolled with them (capitation basis) supplemented with a co-payment via a fee-for-service system. In rural areas, due to recruitment difficulties, some DHBs recruit general practitioners (GPs) directly and pay them often a very competitive salary.

Chart 9. Health expenditures per capita in New Zealand and OECD countries, 1990-2004



34. Unfortunately, there is no clear view on the impact and outcomes of each reform. However, the restructuring appears to have made little impact on the trends that commonly describe health system performance (Ashton, 2002), although it is also likely that the life of each reform was too short to have a long-term impact on the health system (Gauld, 2003).

Health Workforce planning

35. Prior to the adoption of a market-oriented approach in the 90's, health workforce planning was playing an important role. Then, planning became less important, as market mechanisms were believed to contribute to health workforce equilibrium. As a result, workforce planning was neglected, as illustrated by the dismantling of most of the previous health workforce planning structures and processes. However, by the late 1990s and early 2000s, it appeared that these "laissez-faire" arrangements were not working so well. Persistent recruitment difficulties, a degraded infrastructure to support health workforce planning and development, an inadequate information base in most respects, lack of communication and co-operation between stakeholders including between the 21 DHBs (HWAC, 2003b), all contributed to the idea that

health workforce planning needed consideration again. As a result, various measures in the field of health workforce planning and development were adopted.

36. Special committees were set up to address health workforce issues. One such committee, the Health Workforce Advisory Committee (HWAC), was established in 2001 under the New Zealand Public Health and Disability Act 2000 in order to advise the Minister of Health on any workforce issues, and also to assess independently workforce capacity and foreseeable workforce needs.

37. In addition, specific concerns about the medical workforce, in particular, shortages, reliance on overseas-trained doctors, and lack of coordination between the medical education and the health sector, led the Health Workforce Advisory Committee to establish a Medical Reference Group⁹. The latter argued the case for the idea of self-sufficiency for New Zealand (see Box 2)—its report recommends increasing the number of medical graduates—and for workforce planning. It stresses the need for leadership and co-ordination of medical workforce development in New Zealand, and proposed the development of a national body, with a coordinated planning function and capacity to provide a nationally consistent strategic overview of workforce development by aligning health and education policies and funding.

Box 2. Self-sufficiency for the medical workforce in New Zealand?

Over the past decade, self-sufficiency for the medical workforce has been advocated by different advisory committees, taskforces as well as the Ministry of Health.

"We believe that the strategic aim should be for New Zealand to be self-sufficient in its production of medical practitioners" (Health Workforce Advisory Committee -2006, p. vii)

"Consideration should be given to New Zealand becoming net self-sufficient for medical graduates" (Ministry of Health, 2006b, p. 19)

The workforce taskforce recommends that:

"The number of medical graduates produced by the training system be increased to ensure that New Zealand moves towards achieving ongoing self-sufficiency for its medical workforce" (Workforce Taskforce 2007, p.1). This is part of the recommendation of the Workforce Taskforce.

The fact that the idea of "self-sufficiency" has gained importance in New Zealand might be surprising. New Zealand is indeed a very open economy and immigration plays an important role in most economic sectors. Advocating for self-sufficiency for the medical workforce would mean to recognize a "medical exceptionalism". In this context, it is not totally clear what self-sufficiency means and which policies will ensure it.

Sources: Health Workforce Advisory Committee (2006), *Fit for Purpose and For Practice: Advice to the Minister of Health on the Issues Concerning the Medical Workforce in New Zealand*, Wellington; Ministry of Health (2006b), *Training the medical workforce 2006 and beyond*, MoH, Wellington; Workforce Taskforce (2007), *Reshaping Medical Education and Training to Meet the Challenges of the 21st Century: A Report to the Ministers of Health and for Tertiary Education from the Workforce Taskforce*, Wellington.

38. The Health Workforce Advisory Committee has produced a series of reports addressing health workforce issues. However, after six years of existence, some claimed that it did not produce enough real practical recommendations for the government. The committee concluded its work in September 2006. More recently a Health Workforce Taskforce has been established in order to design more practical plans to streamline workforce planning and address issues around training, recruitment and retention of the full range of health professionals.

⁹ Health Workforce Advisory Committee (2006), *Fit for Purpose and For Practice: Advice to the Minister of Health on the Issues Concerning the Medical Workforce in New Zealand*, Wellington.

39. DHBs are also involved in health workforce planning. Initially, medical workforce development was largely left to individual employers, mainly each DHB. Then, efforts were undertaken to develop a more global and integrated approach. In particular, District Health Boards New Zealand (DHBNZ)¹⁰, which groups all 21 DHBs, aims at coordinating DHB policy and at introducing common approaches in terms of recruitment and planning. In 2003, DHBNZ developed an overarching “Workforce Action Plan”, which focuses on information, relationships and strategic capability. In 2004/5, DHBNZ developed a “Future Workforce Project” focusing on DHB collective priorities and actions for health workforce development in the next five years. Eight priorities were identified aiming at nurturing and sustaining the workforce or developing workforce capacity. Although, DHBNZ acts more as a facilitator, it has a potential to play a greater role in reinforcing coordination between the different stakeholders and in insuring workforce development.

40. While health workforce policy has been the object of greater attention in New Zealand over the past decade, at the same time, the growing number of stakeholders involved in health workforce policy developments has contributed, to a certain extent, to a fragmentation and to some duplication of activities in health workforce planning. Furthermore, despite its intrinsic value the role attributed to health workforce planning remains an issue of debate (Box 3).

Box 3. Which role for health workforce planning?

Health workforce planning is advocated by many to facilitate the attainment of an adequate supply of health personnel in order to meet population demand for health. In fact, all OECD countries are involved, to different degrees, in health workforce planning activities.

Indeed, there are also a number of relevant reasons, related to health labor market particularities and complexities, explaining why public intervention in health workforce management can be of social value. One important reason is that medical education is expensive and an oversupply of medical doctors does generate a significant social cost. Another reason is the time lag in medical education. Supply adjustment for medical doctors is not immediate as it can take up to 10 or more to train a medical specialist. Such lags may cause cycles of alternate shortages and surpluses of health workforce, in particular doctors. Specific policies, for instance through various set of incentives, can play a major role in minimizing the cyclical imbalances in the health labour market. But planning health labour supply is not an easy task and no single country has found the key to solving disparities between health workforce supply and demand (Kolars, 2001).

First, fixing numerical limits essentially supposes a solid capacity to anticipate future demand. This seldom proves to be an easy task and there are many examples of prophecies of shortages or over-supply which never materialise. Uncertainties related to future population health needs and technological progress, as well as methodological sensitivity, contribute to weaken forecasting exercises. As a result, health workforce planning may mainly serve as a broad-brush tool.

Also, while workforce planning could represent a promising area to consider the dynamic between domestic training and international recruitment, this is rarely the case. In the United Kingdom, the period from 1999 to 2005 was one of unprecedented staffing growth for the NHS in England, fuelled by the availability of significant growth in funding which resulted in increasing international recruitment and enhanced domestic training capacity. However, financial deficits emerged in the NHS from 2004-05 onwards, attributed, in part at least, to the costs of workforce expansion (House of Commons, Health Committee, 2007). The deficits have, in turn driven a sudden downturn in workforce size. This situation has exposed a disconnection between financial planning and workforce planning. It also shows, to some extent, the lack of coordination between migration and domestic training policies as a larger numbers of UK based graduates have more difficulties entering the health care labour market (Buchan, 2007).

Sources: Buchan J. (2007), UK case study, forthcoming; Kolars J. (2001) Forecasting physician supply and demand, *Medical Education* 35(5), 424-425.

¹⁰

DHBNZ was formed by all 21 District Health Boards in December 2000 to provide a sector group through which DHBs could coordinate their activities at a national level. The overall purpose of DHBNZ is to assist DHBs in meeting their objectives.

2.2 Education policies and recognition of foreign qualification

41. Decisions about the number and the type of health workers trained are critical and affect the development of the health workforce. In addition, in the context of New Zealand, given the importance of foreign-trained health workers, it is important to have a good understanding of the condition of their insertion in the health workforce. In the following, medical and nursing education pathways will be examined, as well as the process for the recognition of foreign qualifications.

Medical Education

42. Undergraduate medical education in New Zealand spans six years and is provided by two universities, Auckland and Otago (MoH, 2006b). This is followed by pre-vocational training that lasts two years (PGY 1, PGY 2) or more. It corresponds to a transitional period into professional practice, recognised with a registration in a general scope of practice with the Medical Council. Then, once a choice for a specific area of medicine is made, vocational training needs to be completed in order to be recognised by the relevant Medical College. The last phase lasts between three years for general practice to eight years for some hospital specialties (see Annex 2)

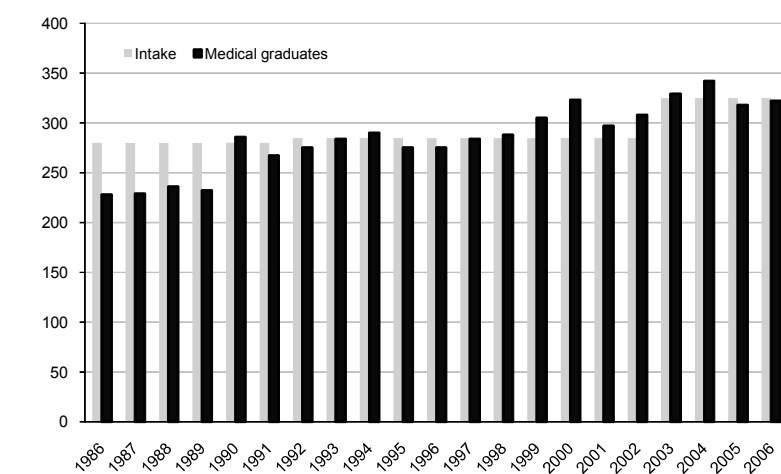
43. Various actors are involved in the funding of medical education in New Zealand. Funding is mainly provided by the Education Ministry through the Tertiary Education Commission (TEC), by the Ministry of Health through the Clinical Training Agency (CTA), and by the DHBs. While medical education until graduation is funded by the TEC, the internship (1 or 2 years) and the postgraduate training are mainly funded by the CTA. To a lesser extent, DHBs also play a role in postgraduate training. In 2002, it was estimated that 121 million NZ\$ (1US\$ = 2.16 NZ\$, 2002) was spent on medical education and clinical training (MoH, 2006b). While TEC expenses on undergraduate education represented 43 million NZ\$, CTA expenditures on clinical training represented 62.9 million NZ\$, and DHBs expenditures 15 million NZ\$. There seems to be some lack of coordination between the Ministry of Education and the Ministry of Health. Some claim that there is a lack of global vision for medical education, and argue, for instance, that there is a mismatch between the number of available vocational positions (funded by the Ministry of Health) and the actual number of medical students starting vocational training (the number of medical students is determined by the Ministry of Education).

44. A recent report by the Health Workforce Taskforce (March 2007) emphasises, among other things, (i) the need for further cooperation in the field of education and training of medical practitioners through the creation of a Medical Training Board and (ii) that “the number of medical graduates produced by the training system be increased to ensure that New Zealand moves towards achieving ongoing self-sufficiency for its medical workforce”.

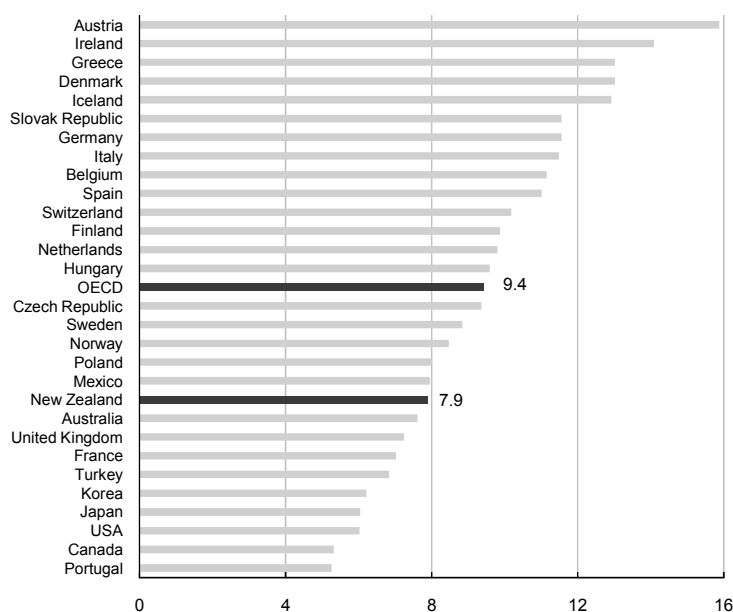
45. One major characteristic of the medical education system that New Zealand shares with other OECD countries is the capped system on funded places for domestic students. The intake of first-year students is currently fixed at 325 (TEC, personal communication, 2006). The government quota has been lifted twice in the past 20 years. In 1987, the intake at Otago was lifted from 150 to 170 students, and again in 2004, to 190. The University of Auckland had its quota raised from 115 to the current figure of 135 in 2004 (TEC, personal communication, 2006). The increase in the quotas in 2004 aimed at allowing more students from rural areas in medical schools. In addition to the 325 domestic students, about 30-40 international students are admitted each year. These students pay the full cost of their studies, which represents a source of revenue for the University. These students mainly come from the Middle East and most are funded by their government. Most students return to their country after graduation, despite the fact that for foreign-born medical students completing their degree in New Zealand, it would be relatively easy to stay on a permanent basis in New Zealand.

46. Between 1986 and 2006, the number of medical graduates increased from 228 to 322 per year (see Chart 10). Most of the jump in the number of graduates occurred post 1990, presumably a lagged effect of the first relaxation of the *numerus clausus* rule in the late 1980s. Presumably, the second relaxation in 2004 will see a further jump in the number of graduates from 2010 on. New Zealand tends to have lower graduation rates than most OECD countries. While the average graduation rate per 100 000 population in New Zealand is estimated at 7.9 between 1995 and 2004, the corresponding figure for the OECD amounted to approximately 9.4 (OECD, 2006). For New Zealand, a graduation rate of 9.4 per 100 000 population would correspond to 365 graduates per year, as compared to the average of 305 between 1995 and 2004 (see Chart 11)—equivalent in a steady-state (and assuming no attrition) to a 12% increase in the current annual intake to medical schools.

Chart 10. Yearly number of intake and medical graduates, New Zealand, 1986-2006



Source: New Zealand Health Information Service

Chart 11. Average number of medical graduates per 100 000 population, OECD countries, 1995-2004

Note: Average is calculated with the latest available data for each country
Source: OECD Health Data 2006

47. Any decision to increase the number of medical students will not only need to address the capped system constraints, but also recruitment difficulties for faculty members. Indeed, recruitment and retention problems within academic medicine are common. This persistent problem is largely attributed to higher salaries proposed by DHBs. Salary gaps in 2005 between university health professionals involved in medical education and health professionals employed by DHBs to deliver health services were estimated at between 30 and 60 000 NZ\$ (1US\$ = 1.42 NZ\$, 2005) (*MoH, 2006b*). However, the recent wage increases in favour of faculty members should contribute to ease such recruitment and retention difficulties.

48. Although medical education is largely subsidized by the government for domestic students, the increasing indebtedness of students is a source of widespread concern and discussion (*HWAC, 2005*; *Moore et al., 2006a*; *Pole, 2006*), and is thought to play a role in the choice of the medical specialty and even in out-migration.

49. The cost of undergraduate medical education in 2002 was estimated at 199 000 NZ\$, of which 71% is met by the Government and 29% by the student (*MoH, 2006b*). This represents about 10 000 NZ\$ per year. As a result, students usually take out a loan in order to pay the fees and to cover their living expenses. At the end of their studies, they may end up with a large debt, about 70-80 000 NZ\$ for doctors and even more for dentists.

50. *Moore et al. (2006b)* found that indebtedness was a key element for those considering emigration to Australia or to other countries where wages are higher, so that they can reimburse their debt more easily. Student indebtedness is also said to play an important role in the choice of medical specialty. For a substantial number of medical graduates, debt was one of the main factors explaining the lack of attractiveness of work areas like general practice, public health and psychiatry.

51. The debt issue is abundantly debated and various measures have been adopted to address this concern. They include the introduction by the government of a capped rate of student loan interest at 7% in an effort to give greater certainty to students, the institution of a “step-up scholarship” that provides a

significant subsidy to tuition fees, and more recently, an interest write-off for graduates choosing to stay in New Zealand (Pole, 2006). However, at the same time, those efforts are partially off-set by the Universities continual increase of medical fees. Policies of writing off interest for students are also criticised by some who claim that it does not represent an efficient allocation of public resources and might encourage more borrowing and slower repayment.

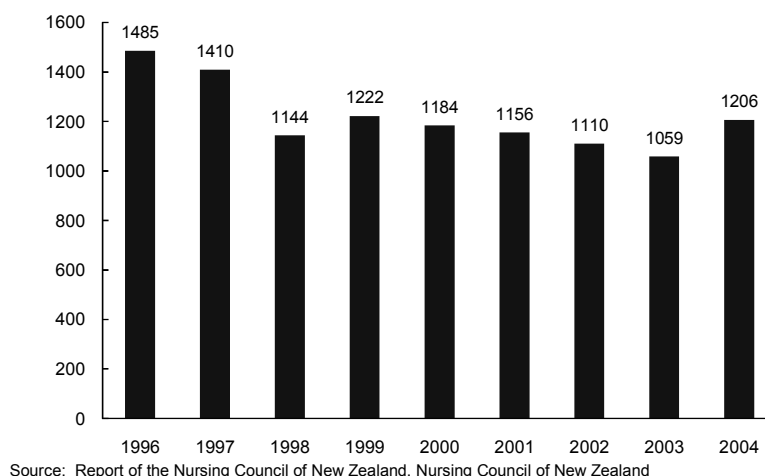
Nursing and midwifery education

52. In contrast to medical education, the number of places in nursing and midwifery schools is demand-driven although the availability of clinical placements has constrained enrolments. However, from 2008, the demand-driven system will be replaced by a global budget system under which each University will submit a budget proposal to the TEC.

53. Registered nurses in New Zealand, the largest nursing category, are educated via a three-year Bachelor of Nursing degree. There are 16 educational institutions offering programs leading to registration¹¹. Due to this relatively large number of nursing educational institutions and the low number of students, in particular in rural areas, concern about the average quality of nursing training programmes has been expressed in New Zealand. However, closing nursing programmes in rural areas is seen as difficult, since it is likely to make rural recruitment more difficult.

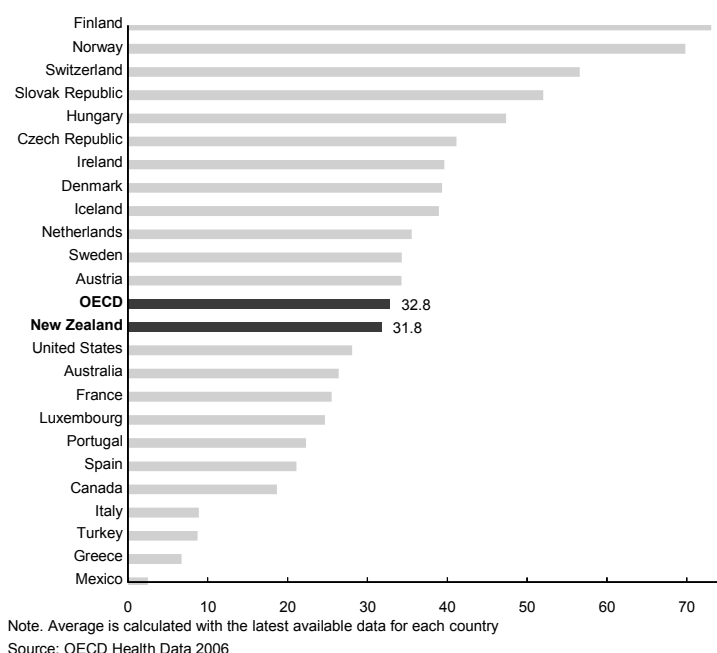
54. By contrast to medical graduates, over the past decade, the number of nursing graduates has decreased, from 1 485 in 1996 to 1 206 in 2004. The number of nursing graduates per 100 000 population is slightly below the OECD average, 31.8 per 100 000 population in New Zealand against 32.8 for the OECD (see charts 12 and 13).

Chart 12. Yearly number of nursing graduates, New Zealand, 1996-2004



¹¹

Auckland University of Technology, Christchurch Polytechnic Institute of Technology, Eastern Institute of Technology, Manukau Institute of Technology, Massey University, Nelson Marlborough Institute of Technology, Northland Polytechnic, Otago Polytechnic, Southern Institute of Technology, UCOL Universal College of Learning, UNITEC New Zealand, University of Auckland, Waiariki Institute of Technology, Waikato Institute of Technology, Western Institute of Technology at Taranaki, Whitireia Community Polytechnic.

Chart 13. Average number of nursing graduates per 100 000 population, OECD countries, 1996-2003

55. The second level nurse, the Enrolled Nurse, is the second largest category. Enrolled Nurses were educated in employer-based programmes under the Nurses Act 1977. However, these programmes were discontinued by health boards in 1993. The Health Practitioners Competence Assurance Act 2003 (Box 4) saw the reinstatement of a second-level nursing programme in educational institutions under a new scope of practice and title, Nurse Assistant. Since 2004, the Enrolled Nurse scope of practice has not been open for new applicants. Applicants from that date are registered as Nurse Assistants. There are approximately 3 800 Enrolled Nurses in New Zealand (New Zealand Health Information Service, 2004). Enrolled Nurses work under the direction of a Registered Nurse or Midwife. The responsibilities of Enrolled Nurses include assisting patients with the activities of daily living and performing delegated interventions from the nursing or midwifery care plan.

56. Currently, there are about 135 nurse assistants in New Zealand (North, personal communication, 2007). Nurse assistants represent a “second-tier person” working under the supervision of a registered nurse or midwife in a range of areas. They deliver nursing care to individuals in community, residential and hospital settings. To become a nurse assistant, it is compulsory to follow a program length of 1000 hours, with the students required to complete a minimum of 350 hours theory and 650 hours practice. Nurse Assistants are prepared in polytechnic institutes. There are three nurse assistant programmes in New Zealand with further programmes under consideration¹².

57. Another new category is that of Nurse Practitioner. Legislation establishing Nurse Practitioner was enacted in September 2005. Nurse practitioners have an expanded nursing role in clinical settings. In addition, they have developed the skills and knowledge to expand their role to include tasks that may have been ‘traditionally’ performed by other health professionals, such as prescribing medications and ordering diagnostic tests (Nursing Council, 2006). There are only about 40 individuals practising as Nurse Practitioners within New Zealand. To become a nurse practitioner, one should be on the nursing register, have a minimum of four years of experience in a specific area of practice, have a Masters Degree, and have

¹² Northland Polytechnic (aged care) and Christchurch Polytechnic Institute of Technology (long term and rehabilitation care).

passed the Nursing Council assessment of Nurse Practitioner competencies and criteria. There are six master programmes to become a Nurse Practitioner in New Zealand and there is an education equivalences process available to those who have not undertaken one of these approved programmes¹³.

58. As for midwifery, pre-registration education is through a three-year Bachelor of Midwifery programme. There are five pre-registration midwifery programmes in New Zealand¹⁴. Students are mainly direct entry (i.e. with no previous health profession education). However, a midwife may also be a registered general and obstetric or comprehensive nurse who has undertaken further education to gain midwifery qualifications. Midwifery students who hold a previous nursing registration or those with other degrees or other relevant experience are likely to gain credit under these policies and complete a shorter programme (New Zealand College of Midwives, 2006).

Box 4: The Health Practitioners Competence Assurance Act 2003

Health professionals are regulated professions and registration is essential to practise. A new approach towards health profession regulation was adopted with the Health Practitioners Competence Assurance (HPCA) Act 2003 which came into effect in 2004. While the main purpose of the Act is to protect the public from harm and applies only to those practitioners where there is a risk of harm, this act differs from previous legislations. The main differences are the extension of the ongoing competency requirements, which applied previously to only the medical profession, to other regulated professions; a certification regime for all professions which allows for flexibility in the overall health workforce; the delegation to the registration authorities of all clinical decision-making to allow them to respond to changing circumstances without the need for legislative change; the introduction of scopes of practice to allow the development of new roles; and the separation of the registration function from the disciplinary function. The HPCA Act applies to all registered health practitioners including medical practitioners (doctors, surgeons and other specialists), dentists, midwives, nurses, pharmacists, physiotherapists, podiatrists and psychologists.

Under the HPCA act, 'scopes of practice' are used to describe the tasks performed by a professional group, instead of "areas of specialty" as was previously the case. For instance, under the HPCA, the previous nursing registers have been replaced by four scopes of practice: registered nurse, nurse practitioner, nurse assistant and enrolled nurse. As mentioned earlier, enrolled nurses who graduated before 2000 keep their previous title, but those educated after 2000 have the title of nurse assistant. The act also established the separate Midwifery Council (from the Nursing Council) which has jurisdiction over the education, registration, discipline and competence of all midwives in New Zealand.

A review of the operation of the Act is underway to identify implementation issues requiring any further changes.

Source: Nursing Scope of Practice under the Health Practitioners Competence Assurance Act, 2004 (http://www.nurse.org.nz/leadership/ls_global_shortage.htm); Nursing Council of New Zealand, Scope of practice, <http://www.nursingcouncil.org.nz/scopes.html>

Recognition of foreign-medical qualifications

59. Overseas health professionals must meet both the immigration requirements set by the immigration services and the registration requirements set by professional bodies. Until the mid 90s, there were no real links between the immigration process and the foreign recognitions of qualification. At that

¹³ Auckland University of Technology (Master of Health Science in Advanced Nursing Practice), Eastern Institute of Technology (Master of Nursing), Massey University (Master of Nursing), Otago Polytechnic (Master of Nursing), The University of Auckland (Master of Nursing), University of Otago (Christchurch School of Medicine).

¹⁴ Otago Polytechnic in Dunedin, Christchurch Polytechnic Institute of Technology (CPIT) in Christchurch, Massey University in Wellington, Waikato Institution of Technology in Hamilton and Auckland University of Technology (AUT) in Auckland.

time, New Zealand was keen to attract skilled and highly qualified people and passing the minimum-point threshold for immigration gave an automatic right to settle in New Zealand. However, despite being granted residence on the basis of their qualifications, a number of highly skilled individuals, including doctors, did not meet standards set down by the relevant professional bodies in order to practise in New Zealand. Hence, highly skilled permanent immigrants faced increasing difficulties in finding jobs which matched their qualification and foreign work experience.

60. In 1995, the policy for skilled migrants was refined, with increased emphasis on the transferability of human capability to New Zealand, via for example, qualification recognition, English-language ability, etc. As a result, even if requirements are separate, there is now a more harmonized approach between the immigration and registration process. In most of cases, eligibility for registration or registration is required in order to qualify for skilled immigration. The sequence in general is as follows for health professionals wanting to work in New Zealand: be eligible for registration or be registered, have a job offer, obtain a work or residency permit. Most of the time, eligibility for registration is also a pre-requisite for the work or residency permit. However, registration is not a pre-requisite for individuals migrating to New Zealand through the family or the international humanitarian stream. Available evidence suggests that few humanitarian immigrants have medical qualifications, although the situation is less clear for nursing.

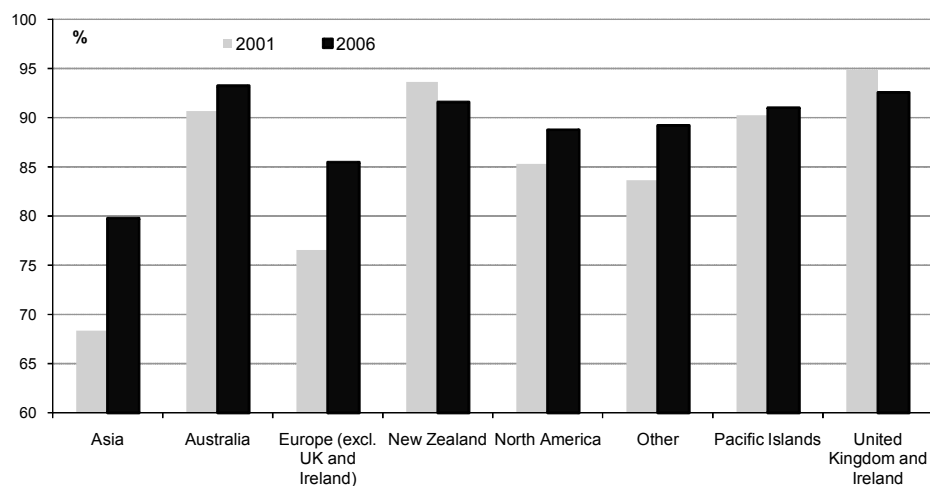
61. The New Zealand Censuses of Population and Dwelling show that employment rates of people aged 15-64 with post school qualifications in the medical field (results are similar for nursing and midwifery studies) tend to have high employment rates but that people born in Asia and those originating from non-English-speaking European countries face more difficulties to integrate in the labour market (Chart 14). Part of the discrepancy may be due to difficulties in getting qualifications recognised, but more in-depth studies would be needed here to ascertain this point. In any case the improvements recorded between 2001 and 2006 may reveal that this is less of an issue than it was in the past.

62. The Medical Council of New Zealand is responsible for the registration of doctors in New Zealand. Getting registered can be done via several routes depending on the country in which the medical degree was obtained, previous work experience and purpose of the stay (Box 5). The first pre-requisite is to meet English-language requirements, as determined by the International English Language Testing System (IELTS). Individuals graduated in the United Kingdom or Ireland and with one-year of clinical experience can get provisional general registration. For individuals who graduated in other countries, a pass in USMLE¹⁵ steps one and two is required to prove medical knowledge. Furthermore, they must also pass the New Zealand registration examination (the NZREX clinical) to demonstrate clinical ability. Provisional registration can also be obtained by individuals who worked continuously for at least three years in a health system considered as comparable¹⁶. As for vocational registration, it applies for individuals with training and experience as a specialist overseas.

¹⁵ United States Medical Licensing Examination.

¹⁶ Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Norway, Republic of Ireland, Sweden, Switzerland, The Netherlands, United Kingdom, United States

Chart 14. Employment rate by main region of birth for people (15-64) with Post-School qualification in medical field, percentages, New Zealand, 2001 and 2006



Source: New Zealand Census of Population and Dwellings, Statistics New Zealand
 Note: Data refer to field of study NZCED 0601, medical studies

Box 5. Type of medical registration

Provisional general: All new registrants, regardless of seniority, must work under supervision for at least their first 12 months in New Zealand to become familiar with the culture. During this time they are registered within a provisional general scope of practice and their performance will be assessed by senior colleagues. They will be required to complete certain requirements to be registered within a general scope. The only exception to this supervised period is for New Zealand and Australian graduates who have already completed their internship in Australia.

General: A doctor who has completed the requirements of a provisional general scope will be registered within a general scope of practice. Examples are junior doctors who have completed their first post-graduate year and may be in vocational training, doctors who have not started, or have chosen not to do, vocational training, or doctors nearing retirement who no longer meet the requirements for registration within a vocational scope of practice. The doctor must establish a professional collegial relationship with another doctor who is registered within the same or related vocational scope, and must participate in appropriate continuing professional development to maintain and improve competence and to be recertified each year.

Provisional vocational: Doctors who have completed their vocational training and who are not already registered in New Zealand must work under supervision for at least 12 months. They are registered within a provisional vocational scope of practice. During this time they must complete Council's requirements for registration in a vocational scope. Those requirements may include working in a formal assessment position and/or passing an examination.

Vocational: A doctor who has completed his or her vocational training as a consultant and has appropriate qualifications and experience can be registered within a vocational scope of practice. These vocational scopes are recognised by the medical Council. A doctor registered in a vocational scope must participate in an approved continuing professional development programme to maintain competence and be recertified each year.

Special purpose scope: A doctor who satisfies the registration criteria to visit New Zealand for one of the following defined and specific reasons will be registered within a special purpose scope of practice: i.e. as a visiting expert; as a sponsored trainee; for post-graduate training and/or experience; as a medical researcher; as a locum specialist working in New Zealand for less than six months; to help in an emergency, or for any other reason approved by Council.

These doctors will be required to work under supervision for the duration of their employment or appointment. This 'special purpose' scope of practice is not a pathway to permanent registration.

Source: New Zealand Medical Council

63. The Nursing Council of New Zealand is responsible for the recognition of qualifications of foreign-educated nurses. The main principles governing registration include that the applicant has undertaken a nursing programme that is similar in all specified content and length to the equivalent programme in New Zealand, and is able to speak and write in the English language when English is not the applicant's first language. Tests recognised by the Nursing Council are CGNFS, IELTS, and OET. As international recruitment is regulated by both immigration and registration proceedings, the registration process can also be used to facilitate or discourage immigration. For instance, the required minimum level for the IELTS has been raised: a score of not less than 7 in each of the four sections of the exam is now required instead of an overall average 7 previously. As a result, registration is more difficult for overseas nurses. Applicants who do not meet the requirements for nursing registration may be required to undergo further training within a New Zealand educational institution.

2.3 National and international recruitment

64. Although there has been a substantial increase in the number of health workers over the past decades in New Zealand, the increasing dependency on foreign health worker is fuelling concerns on health worker shortages.

Estimating—and responding to—shortages of health personnel

65. Whether or not a shortage of health workers exists is a critical question but the answer to this question tends to vary according to the approaches adopted or to the stakeholder perspective. Nonetheless, it is commonly agreed that difficulties do prevail in recruiting nurses and medical practitioners, in particular for some medical and nursing specialties, and more generally, in rural areas.

66. One tool to evaluate and monitor shortages is the Job Vacancy Monitor (JVM) system of the Department of Labour (Box 6). The JVM is a monthly analysis of job advertisements published in selected newspapers. Their assessment of occupations for 2006 indicate that skill shortages for health professionals (excluding nurses and midwives) remain severe with only 41% of advertised vacancies being filled (Department of Labour, 2007). Nurses and midwives moved out of the extreme shortage category in 2006, but remain difficult for employers to find, with a little over half the advertised vacancies being filled. On this basis, it was considered that there is not a genuine shortage of individuals with the required skills in nursing despite employers having considerable difficulty filling vacancies for nurses and midwives (Department of Labour, 2005b). Recently, there has been a slight easing of the health labour market: JVM data recorded a decline of 12% in advertised vacancies between 2005 and 2006 for the highly skilled in the health sector (Department of Labour, 2006)¹⁷. However, skill shortages appear to be chronic for some specialities like anaesthetics, radiology, obstetrics, and psychiatric nurses.

Box 6. Job Vacancy Monitoring Programme

The Job Vacancy Monitoring Programme is designed to provide new insights into skill shortages in New Zealand. It aims to identify which skilled occupations are in shortage, and to better understand the supply and demand forces contributing to these shortages. The programme currently consists of three components:

Job Vacancy Monitor: a monthly analysis of job advertisements appearing in 25 daily newspapers and two IT internet job boards. This component started from November 2002.

A Survey of Employers who have Recently Advertised (SERA), with two sub-components:

SERA Extensive: a large sample survey of employers to establish whether the advertised positions were filled, and the number and suitability of applicants.

SERA Intensive: an in-depth survey of a small number of employers who advertised vacancies in occupations in shortage to gain an understanding of the forces contributing to the shortage.

Occupation reports: The results of the SERA surveys are analysed together with other data sources to form a series of occupational reports, produced on an annual basis.

Source: Department of Labour, <http://www.dol.govt.nz/publications/jvm/>

67. DHBs which employ the majority of health professionals in New Zealand play a key role in recruitment. Until recently, each DHB was recruiting on its own, creating some competition between them, and leading to some inefficiency in the recruitment process from a national perspective. Common approaches of recruitment between DHBs are now favored, especially for international recruitment. For

17 There are, however, a number of limitations in using vacancy data. In general, vacancy rates may understate the extent of shortages. There may be “suppressed” vacancies (where a post is not advertised because management has no expectation of successful recruitment), and “hidden” vacancies (where a post is filled, but by an individual with insufficient skills or experience to successfully meet the requirements of the job). In addition, there seems to be room for more collaboration between the Department of Labour and the Ministry of Health (and other institutions involved in health workforce planning) regarding the identification of health worker shortages.

instance, efforts are developing to better share information on health personnel needs across DHBs or by pooling resources for recruitment, and also to develop a brand in order to facilitate global recruitment for New Zealand. Recruitment agencies are not playing a significant role for international recruitment in New Zealand, but the Department of Labour has a Relationship Management Team aiming at organising expos and recruitment campaigns abroad.

68. Among the policies to improve recruitment, remuneration and financial incentives are among the most common. Information on the employment status of doctors and nurses indicates that the average wage in medicine in 2001 was 62 000 NZ\$ (Maré and Liang, 2006). The mean income in the field of medicine is comparable in New Zealand with accounting and law and legal studies.

69. Until 2000, every hospital would negotiate individually with their employees. Now, health workers employed by DHBs have common contracts through the Multi-Employer Collective Agreement (MECA). As the wage has been aligned on the Auckland DHB MECA, most doctors and nurses have seen their wage increased, except those in Auckland. Medical specialists have also benefited from wage increases due to the competition between DHBs to recruit them. As for nurses, they have benefited recently from a substantial wage increase. However, most international studies investigating the labour supply decisions of nurses tend to find that, at least in the short-run, nursing labour supply appears to be fairly unresponsive to wage change (Shield, 2004; Chiha and Link, 2003; Antonazzo *et al.*, 2003). In other words, an increase in the wage does not necessarily lead to a substantial increase in labour participation in the short-run.

70. Another type of approach to address potential shortages is through the development of a flexible workforce in New Zealand. In particular, as noted above, the use of nurse practitioners has been encouraged but this promising initiative is still in its infancy since only 40 nurse practitioners have been trained so far, and not all are in employment which fully used their training and skills.

International recruitments: immigration policy as a management tool of the health workforce?

71. In terms of international recruitment of health workers, New Zealand has no specific migration programmes. Health professional migration policy is defined in the context of skilled migration. However, for those professions listed on shortage occupation lists which include most health professions, immigration is facilitated. The fact that shortage occupation lists are used in immigration policy illustrates that health workforce concerns are integrated, to a certain extent, in the immigration policy.

72. Immigration plays an important role in building New Zealand society. The proportion of foreign-born population in New Zealand is one of the highest among OECD countries, at 19.4% in 2005 (OECD, 2007). Over the past 20 years, the number of individuals migrating to New Zealand has increased and diversified. While Europe and Australia still represent the main source countries, Asia is playing a bigger role.

73. New Zealand immigration policy has undergone various changes. Major changes in the selective migration policy were introduced, notably in 1995, which aimed at better taking into account language proficiency, implementing recognition of qualifications and prioritizing those with a job offer. In recent years, the usual distinction between temporary and permanent migrants was questioned. As a result, the principles and the procedure governing the permanent migration program were amended to give priority to people with New Zealand experience and qualifications, creating bridges between temporary and permanent programs. These changes have had a significant impact on the ability of foreign students to stay in New Zealand after graduation. In 2005, about 30% of those who entered with a temporary permit in 2002 gained permanent residence in New Zealand (DoL, The Migration Trend, 2006).

74. The number and composition of permanent residence migration inflow is set annually with regard to a range of factors, including the impact of a given level of approval on the economy, social cohesion and infrastructure, and the desirability of stability (New Zealand High Commission, 2003). In 2005/6, around 52 000 people were approved for permanent New Zealand residence. Basically there are three entry routes to permanent migration to New Zealand: (i) Skilled/Business, (ii) Family Sponsored and (iii) International Humanitarian.

75. The Skilled Migrant Category (SMC) represents the main path to residence, as over half of all people approved in 2005/6 gained residence through this category. To be eligible in the skilled migration category, one must be under 55 years old and score at least 100 points in their Expression of Interest (people with 140 points or more are automatically selected).¹⁸ Additional points are given to occupations, recognised prior to arrival, that are included in the Long-Term Skill Shortage List (LTSSL) (Box 7). This list includes almost all health occupations. Additional bonus points are also granted for an employment offer for the regions outside Auckland, and for work experience in New Zealand. In 2005/06, 220 doctors and 780 nurses entered through the Skill Migrant Category. Figures for the previous year were respectively 320 and 920 (see Annex 3).

Box 7. Occupational Shortage Lists

The Department of Labour currently maintains two occupational shortage lists: the Immediate Skill Shortage List (ISSL), formerly the Occupational Shortage List (OSL) and the Long-Term Skill Shortage List (LTSSL), formerly the Priority Occupation List (POL). The ISSL and the LTSSL are reviewed biannually by the Department of Labour. During the review, submissions are sought from industry groups about both the nature and extent of skill shortages in their area.

The ISSL Skill Shortage List contains professions which are currently in high demand in New Zealand and lists the qualifications and /or experience required for work permits and the recommended standard for work permit applicants with an offer of employment.

The LTSS List contains professions which are currently in extraordinarily high demand in New Zealand and lists the qualifications and /or experience required for residence permits and bonus points under the Skilled Migrant Category

From an employer's point of view, the occupation shortage lists obviate the need to demonstrate that there is no New Zealand citizen or resident available suitably qualified by training and experience to do the job offered. Therefore, once a job has been offered to a potential employee, the person will be able to obtain a work visa or permit provided that they have the recognized skills and qualifications.

76. As for temporary migration, one important category for health professionals is the "Work to Residence", which allows getting a work visa as a step towards gaining permanent residence. A major entry route for the "Work to Residence" is the "Talent Program". It includes the case of a person with a job offer from an accredited employer (most DHBs are accredited employers) and listed on the LTSSL. In this situation the employer can recruit directly from abroad for a period up to two years renewable and transferable to a permanent permit. A person with a job offer which is included in the ISSL (most medical occupations are also included in this list) can get the same type of work permit without having to pass a labour market test. In other cases, the employer must demonstrate that there are no suitably qualified and/or experienced New Zealand citizens or residents available to do the job. In 2005/06, there were about 1 470 work applications approved for medical doctors and 1 060 for nurses. The latter is on the decrease as

¹⁸

All individuals meeting the criteria are then pooled and ranked according to specific selection criteria. People who score between 100 and 140 points and have a job or job offer in New Zealand will be selected in sufficient number to meet the New Zealand Immigration Programme numbers. However, not all eligible individuals in the pool will necessarily be invited to apply for residence. Individuals who are not invited to apply for residence remain in the pool for three months. If they are not selected after this period, they can lodge a new Expression of Interest.

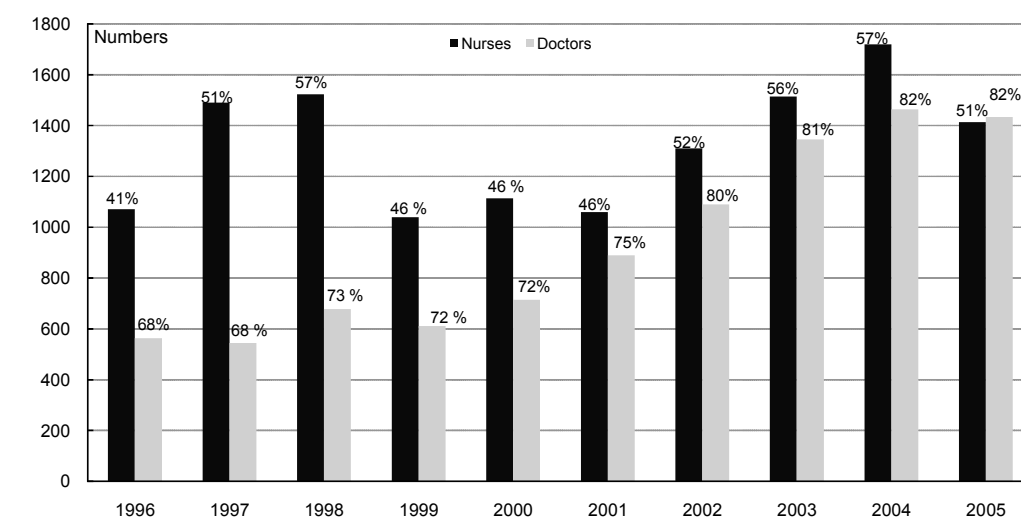
compared to previous years (1 350 in 2004 and 1 630 in 2003) while the former is mostly stable (see Annex 3).

77. Finally, another entry route is the “Working Holiday Scheme”. This program is for individuals aged between 18 and 30 years who aim to experience life in New Zealand (about 28 500 persons were granted this type of visa in 2005/06). People entering through this route are able to work for part of their total permit duration whose maximum period is two years. There are about 25 bilateral agreements with origin countries for this program which is capped except for the United Kingdom, Germany, Japan, the Netherlands, Norway and Sweden. It seems that some medical doctors, notably from the United Kingdom, enter through this route, mainly for temporary stay.

78. In New Zealand, international recruitment of health workers is important as illustrated on a long period by registration data¹⁹. It accounted for over 80% of annual registrations of doctors over the period 2002-2005, and over 50% of all nursing registrations (New Zealand Medical Council, 2006; New Zealand Nursing Council, 2006). The annual number of overseas registrations of medical practitioners rose from 452 in 1990 to 1 414 in 2005.

79. Over time, the main source countries have remained relatively similar, with the exception of South Africa. For the latter, there has been a large increase in medical migration, especially in 1995, which was associated with the end of Apartheid. However, concern expressed about the brain drain by the South African authorities has led to a decrease in active recruitment from South Africa thereafter. More generally, concern about the impact of migration on lower income source countries has led New Zealand to sign the Commonwealth Code of Practice for the International Recruitment of Health Workers.

Chart 15. Yearly registrations of foreign educated doctors and registered nurses and midwives, 1996-2005, numbers and percentages, of all new registrations in New Zealand



Sources: Nursing Council of New Zealand and Medical Council of New Zealand

Note. Percentages represent share of foreign-trained in total annual new registrations

80. For nurses, the United Kingdom has remained the main source country. At the same time, new source countries are emerging. There has been a significant increase in the yearly registration of Filipino-trained nurses in recent years (from around 50 in 2000 to 150 in 2005). Also, registration from nurses

¹⁹ The registration figures should, however, be considered with caution as they cannot necessarily be equated to the number of doctors or nurses entering the country at a point in time.

trained in India and Zimbabwe has become more important. While almost no registrations were recorded in New Zealand from nurses trained in India and Zimbabwe in 2000, registrations from each of these countries reached 100 in 2005. By contrast, yearly registrations from nurses trained in South Africa have significantly diminished (from 200 in 2001 to around 50 in 2005).

81. Over time, there has been an increasing use of temporary migration which has given rise to a large number of short-term stays of health workers in New Zealand, in particular for doctors. For instance, temporary registration²⁰ for medical doctors rose from 165 in 1990 to 758 in 2003 (HWAC, 2005).

82. A number of short stays are doctors coming for a locum in rural areas. In rural areas, where recruitment difficulties are particularly notable, especially for general practitioners, special programs have been developed. For instance, the New Zealand Rural General Practice Network, a not-for-profit society, is representing the interests of rural general practice and, in particular, the rural health workforce. It developed to help the recruitment for long-term services or for short-term locum services in rural areas. In particular, the locum program is rather successful in helping to replace doctors when they are on continuous training or on holiday.

2.4 Retention and emigration

83. Retention is also a critical element in health workforce policy as staff turnover has a cost. Moreover, in the context of New Zealand, as mentioned before, emigration is significant, particularly to Australia and the United Kingdom, and thus retention and return migration is an important issue.

Retention and turnover in the workforce

84. For nurses, turnover across DHBs is estimated to range between 12% and 25% (North *et al.*, 2006a). Higher turnover occurs in DHBs in metropolitan areas, areas where there is high competition for nurses, and in certain clinical areas such as mental health and emergency services. North *et al.* (2006b) estimated at 19 900 NZ\$ the cost per nurse leaver, and between 5 000 NZ\$ and 13 000 NZ\$ the costs associated with recruitment, hiring and training.

85. In order to improve retention in the job, efforts have been engaged to address working conditions through, for example, the development of “magnet hospitals” in New Zealand. Internationally, it has been observed that some policies in place in hospitals are more successful in recruiting and retaining health care staff. These hospitals have been designated as “magnet hospitals”. Research shows superior outcomes for magnet hospitals, such as lower risk-adjusted hospital mortality, higher ratings of quality of care, higher patient satisfaction, lower rates of nurse burnout and higher rates of nurse job satisfaction. It appears that developing some of the features of a “magnet hospital” is certainly a promising strategy to improve retention. Becoming a magnet hospital requires meeting 14 principles including having strong nursing leadership, a flat organisational structure, a participatory management style, and promoting work autonomy. A New Zealand Magnet Advisory Group was established in February 2002. Several DHBs are now actively pursuing the possibility of introducing magnet concepts in New Zealand's health and disability sector. Hutt Valley DHB has been the first to receive magnet hospital accreditation in June 2007 (Nursing New Zealand, 2007).

²⁰

Until recently, doctors visiting New Zealand for up to three years were recorded in a temporary registration category. This applied mainly to doctors trained in one of the following countries: United Kingdom, Republic of Ireland, Canada, United States, and South Africa. This scope of practice no longer exists under the current legislation and these doctors are now registered in either a provisional general or special-purpose scope depending on their circumstances

86. Other types of retention strategies are also being developed at the DHB level. For instance, in the Capital and Coast DHB, combined approaches have been developed to improve nurse turnover which was around 33%. Following a large wage increase (about 20%), new training approaches, and better work-related advantages, turnover rates are significantly lower, around 17%. Other approaches are based on engaging staff and include granting awards for long term staff.

87. Finally, “recruiting back” health professionals to the health workforce is a policy raising growing interest as there is a pool of health workers, especially nurses who are either inactive or work in another sector. But, to date this interest has not been translated into a specific policy. For instance, 14% of the Registered Nurses and Midwives who purchased an Annual Practicing Certificate in 2000 were either in non-nursing or midwifery job, or not in paid employment. This percentage was even higher for enrolled nurses (21%) (New Zealand Health Information Service, New Zealand Nurses and Midwives 2000, NZHIR, 2002). A study on this particular group found that 76% of registered nurses and midwives, and 79% of enrolled nurses, would consider returning to the clinical workforce (New Zealand Health Information Service, Non-practicing nurses and midwives 2000, NZHIS, 2000). The survey also found that the main factors that would attract nurses back to the clinical workforce were more flexible hours of work, availability of return-to-work programmes, salary increases, and provision of child-care facilities. For enrolled nurses, an improved image of nursing was also a major factor.

Retention in, and return to, New Zealand

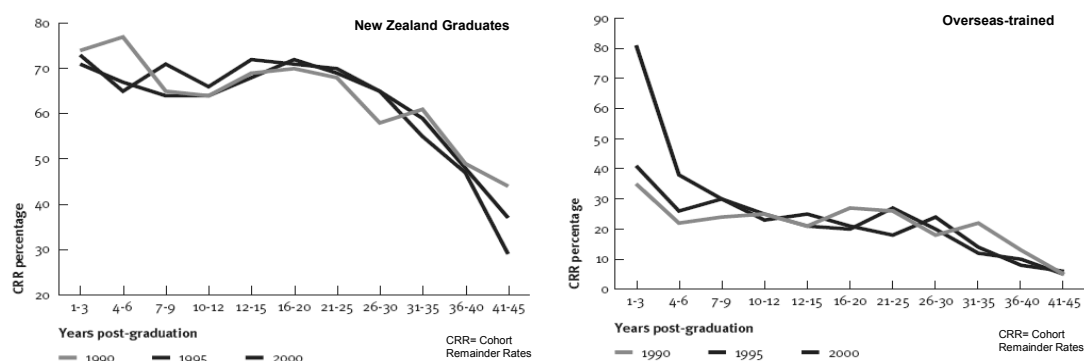
88. “Recruiting back” health worker who emigrated is also attracting more attention. In theory, there is big pool of potential “returnees” for New Zealand to attract. Efforts are underway to better understand why people leave through exit surveys, and strategies to attract back health workers who went overseas are being developed. Alumni programs exist at the Wellington and Auckland public hospitals in order to maintain contact between the hospital and former nurses.

89. At the same time, there is an acknowledgement that many leave, at least temporarily, especially to Australia, and, to a certain extent, a general acceptance that young individuals will leave New Zealand for an overseas experience. In health occupations, a nursing career is even sometimes promoted as allowing travels around the world. Higher wages, especially for junior doctors who have to reimburse their student loan, professional opportunities and the quest for a new lifestyle are among the main factors motivating health professionals to migrate from New Zealand.

90. Retention of junior doctors is a serious concern in New Zealand. As depicted in Chart 16, by the third year after graduation, approximately 30% of doctors from a graduate year will be lost. This retention rate has showed little change over the past decade.²¹ It can also be noted that about 10% of graduate students do not register immediately after graduation; this figure reached almost 20% in 2004. As for foreign-trained doctors, data on retention show a marked decrease in the first year after registration. In the year after initial registration, less than 50% of international medical graduates remain in New Zealand (Medical Council, 2006). This percentage is 33% in the third year after registration. This illustrates the short-term pattern of the migration of health professionals to New Zealand, casting doubts on the role that migration might play to address long-term supply needs. Reasons for low retention rates could be due *inter alia* to a strong preference for short-term stays, remigration to other OECD countries or difficulties in getting qualifications fully recognized. Further analysis should be carried out to disentangle these different factors and identify appropriate policy responses.

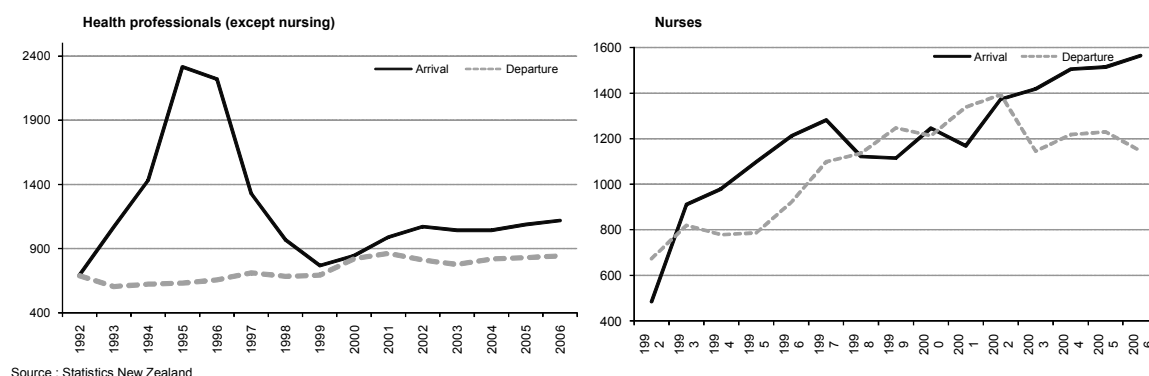
²¹ The first-year retention of 101% for the 2004 graduates is rather high and may be due to either doctors who completed their internship overseas or took a year off before registering in the following year.

Chart 16. Percentage of New Zealand graduates and overseas-trained doctors retained in the New Zealand workforce 1990, 1995 and 2000



91. Over time, the number of health professionals leaving New Zealand has increased. Data on long-term and permanent departures²² indicate that the number of departures of health professionals (excluding nursing) from New Zealand grew moderately (from 689 in 1992 to 843 in 2006) while for nurses it almost doubled (674 in 1992 and 1 147 in 2006) (see Chart 17).

Chart 17. Yearly long term and permanent arrivals and departures of health professionals (except nursing) and nurses, 1992-2006



92. Since 2001, long-term and permanent departure and arrival data are also available by place of birth. It shows a constant negative net migration for nurses born in New Zealand. The figure averages at 300 a year, corresponding to about 25% of the nurses graduating each year. The yearly net outflow for New Zealand born health professionals (except nursing) is more limited as it reaches about 100.

93. Australia attracts a large share of New Zealand health professionals. Geographical proximity, cultural similarity, and higher wages, all contribute to this emigration. In addition, except for medical professionals, migration is also facilitated by the Trans-Tasman Mutual Recognition Arrangement (TTMRA) between Australia and New Zealand signed in 1996. The TTMRA established that a person registered to practice an occupation in New Zealand is entitled to practise an equivalent occupation in Australia (and inversely) without the need to undergo further testing or examination. Movement between New Zealand and Australia is also facilitated by the existence of transnational Medical Colleges that set up similar requirements for post-graduate medical training in both Australia and New Zealand.

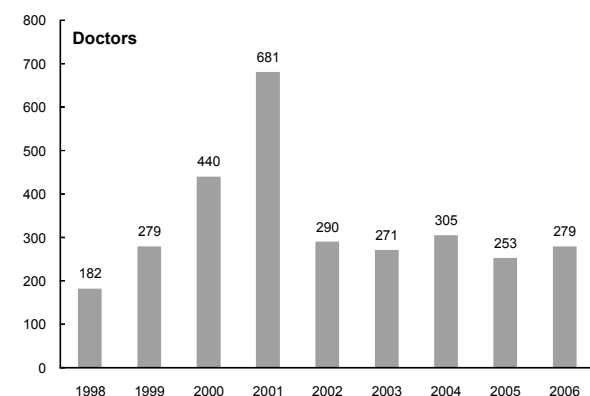
²²

Cautious should be exercised when discussing arrival and departure data, as arrivals and departures data do not reflect persons but indicate movements. Hence, one person can be counted more than once.

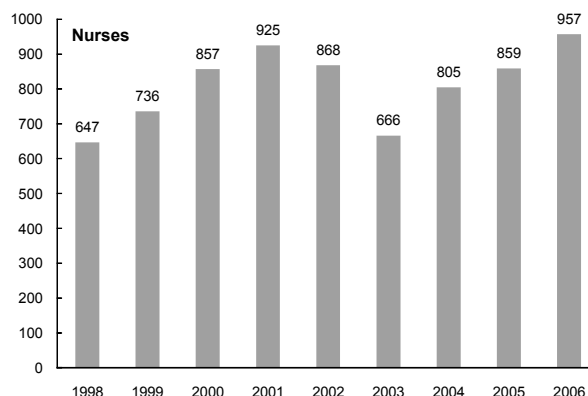
94. Australia is the major destination country for New Zealand health professionals, but the converse is not true. While in the 2001 census the number of New Zealand-born doctors and nurses in Australia is estimated at 1 086 and 5 443, respectively, Australian-born doctors and nurses in New Zealand amounted only to 180 and 582, respectively. In 2001, 59% of New Zealand-born medical doctors living overseas were in Australia (51% for dentists, 72% for pharmacists and 72% for nurses), whereas only 9.3% of Australian-born doctors living overseas were in New Zealand (4% for dentists, 12.5% for pharmacists and 13.5% for nurses). Nonetheless, in relative terms, the proportion of Australian-born health professionals in New Zealand among health professionals and New Zealand-born health professionals in Australia are very similar, at approximately 2%.

95. In terms of outflows of New Zealand doctors, the average annual number of arrivals (settlers, and permanent and long-term stays) in Australia is estimated around 330 per year for the period 1998-2006 (see Chart 18). The corresponding average for nurses is just over 800. These out-migration flows are of large magnitude for a country like New Zealand, compared to the annual number of new nursing and medical graduates.

Chart 18. Yearly permanent and long term arrivals of New Zealand doctors and nurses to Australia, 1998-2006



Note. Data refer to permanent and long term movements and settlers arrivals of doctors
Source: Department of Immigration and Multicultural Affairs



Note. Data refer to permanent and long term movements and settlers arrivals of nurses
Source: Department of Immigration and Multicultural Affairs

96. The relative importance of migration flows from New Zealand to Australia, and the fact that some migrants were perceived as using New Zealand as 'a revolving door' into Australia, especially throughout the 1990s, led Australia to adopt restrictive measures against New Zealanders. In 2001, it was required for New Zealanders to obtain permanent residence if they wished to gain access to social security, to have citizenship or to sponsor other people for permanent residence. Otherwise, New Zealanders must wait two years before being eligible for social benefits.²³ While these restrictions applied to New Zealanders in Australia, the converse did not apply. At the end of the 90's, New Zealanders were also affected by a measure aimed at discouraging the immigration of doctors. It was decided that all doctors entering Australia (including those trained in New Zealand) would not be allowed to bill on the Medicare system (Medicare is Australia's public universal health system) until ten years after they had gained accreditation. However, this period of ten years is reduced to five years for doctors working in rural and remote areas (defined at State level), and does not apply for those working in District Workforce Shortage areas (defined at Federal level). The immediate impact of these measures can be seen on Chart 18 which shows a decrease in long-term and permanent arrivals of doctors from New Zealand to Australia after 2001.

²³

Poot and Sanderson (2007) show that these policy changes affected the duration of stay and the likelihood of return migration from Australia to New Zealand.

97. Emigration of young new Zealanders is a matter of concern although having international experience is strongly encouraged as a way of capitalising knowledge and skills. The key question is: how many come back and when? Unfortunately, evidence to answer these questions is scarce, especially in terms of specific occupations. The new Zealand Government has recently developed a program to foster return migration in general (tax reduction or immunities for those who have been abroad for more than 15 years, facilitated procedure for the immigration of the partner, etc.), but these measures need to be further evaluated.

2.4 Retirement

98. In a context of health workforce ageing, retirement is an important factor to monitor. The ageing of the health workforce is a major change observed in most OECD countries. However, specific information about the retirement rate of health workers is rather scarce. The statutory pensionable age often differs from the actual age of retirement. Evidence suggests that some independent health workers continue working after they have reached pensionable age. At the same time, workers in many countries are choosing to retire earlier. This trend seems to be taking hold among health workers as well and is likely to be reinforced by the increasing presence of women, who retire earlier than their male counterparts.

99. In New Zealand, older workers are an increasing share of the health workforce (*Ministry of Health, 2006a*). While in 1990, 35% of the medical workforce was under 35 years of age, this figure had fallen to 22% in 2004 (*Health Workforce Advisory Committee, 2005*). As the proportion of older doctors and nurses is increasing, substantial retirement outflows can therefore be expected within the next decades. The RNZCGP 2005 Membership survey indicates that retirement is the single most mentioned factor likely to influence future work intentions (*RNZCGP, 2005 RNZCGP Membership Survey: workforce series 2, 2006*). For nurses, it is estimated that about 365 nurses or 1.1% retire each year (Department of Labour, 2005a).

3. FUTURE PERSPECTIVES

100. The New Zealand health system will face serious challenges in the future. Future demand for healthcare services is expected to increase while future supply is thought to be insufficient. As a result, health worker shortages are predicted if nothing is undertaken.

101. Population ageing and its future impact on the demand for health workforce is perceived as a major issue in New Zealand. It is projected that while total population will increase by 16% between 2001 and 2021, the corresponding figure will be 72% for people aged 65 and over (NZIER 2004). The percentage increase for Māori and Pacific Islander people is expected to be even greater.

102. As a result of population ageing, long-term care costs are also expected to rise. Projections of public health spending for long-term care for the period 2005 and 2050 suggest that the increase in public spending on long-term care, in percentage points of GDP, will vary between 1.2 and 2% for New Zealand, which is very similar to the OECD average ranging between 1.3 and 2.2% (Bjornerud *et al.*, 2006).

103. On the supply side, various trends need to be taken into consideration. In particular, a move towards a better balance between work and leisure for health professionals, the introduction of new time directives limiting working hours of health professionals, in particular for junior doctors, and the feminisation of the medical workforce.

104. Relying on three different scenarios, an assessment of future demand and supply of health services was undertaken by the NZIER (NZIER 2004). Each scenario was based on different assumptions about population growth, morbidity rates and the onset of disease and disability in old age. According to the selected scenario, the demand for health services could increase by 40 to 69% between 2001 and 2021. Assuming that demand for labour will grow in line with the health service demands, the study finds that the demand for health professionals will outstrip supply by 2011. Depending on the scenario, the excess labour demand over supply is expected to be equivalent to between 19 000 and 28 000 health professionals, or 28% and 42% of the 2001 health workforce (NZIER, 2004).

105. Of course, these are only scenarios for the future not exact predictions. Moreover, it is not uncommon that predicted shortages or surpluses never materialize. Nonetheless, the results of this projection demonstrate the importance of having a health workforce policy to address future challenges.

4. CAN NEW ZEALAND COMPETE?

106. So far, immigration contributes to a large extent to the supply of health workers in New Zealand. However, increasing the number of overseas-trained health professionals might place New Zealand in a delicate position as it could become too dependent on migration. In this context, one can wonder about the sustainability of New Zealand policy in a context of increasing international competition to attract health workers.

107. In particular, ageing in the United Kingdom, United States, and Australia is likely to have an impact on labour demand for New Zealand and increase relative demand offshore for medical professionals. This would make the New Zealand trained health professionals harder to retain, and the potential pool of foreign recruits more difficult to attract.

108. Given the relative small size of its health workforce and its heavy reliance on immigration, a sudden change in the international migration flows, which could result from policy changes in OECD countries beyond control of New Zealand authorities, could have a dramatic impact on New Zealand. However, at the same time, taking into account the fact that the annual numbers of health professional immigrants to New Zealand are relatively small compared the scale of worldwide flows, it is most likely that New Zealand will be able to recruit the doctors and nurses it needs but at an increasing cost with increasing difficulties to attract the best skills. This will make the education option more attractive but taking into account the length of training it might require immediate action.

109. Furthermore, in order to compete more effectively, New Zealand would need to improve the critical issue of the retention of international health worker migrants, and in particular doctors. As mentioned previously, turnover is very important, as only 33% of international medical graduates remain in New Zealand after registration. A better management of health worker immigration necessitates improving retention. In other words, the sustainability of New Zealand health workforce policy is probably not so much jeopardized by the large reliance on immigration but rather by the failure to retain international health worker migrants in New Zealand on the medium and long term.

CONCLUDING REMARKS

110. Despite the key role of the health workforce in the health system, it has not been at the core of various health system reforms in New Zealand. Nonetheless, in recent years, health workforce issues have captured more attention, and there is now a growing recognition of its importance. Moreover, in the specific context of New Zealand, planning in health human resources is probably more of a challenge than in most other OECD countries because of the key role of in- and out-migration which are only partially determined by New Zealand policies. Increasing international competition for highly skilled workers raises important issues such as sustainability and ability to compete in a global market. In this context, new approaches to improve the international recruitment of health workers, as well as developing alternative policies, may need to be considered.

111. As for international recruitment, better coordination and stronger collaboration between the Ministry of Labour, the Ministry of Health and the DHBs could contribute to more effective and pertinent international recruitment. For instance, the MoH and DHBs could certainly make valuable contributions to the occupational shortage lists regarding the definition and discussion about health workforce shortages. Also, a better coordination between DHBs in terms of international recruitment would be desirable. For instance, a nationwide recruitment process could be considered. In addition, migration policy could also be used to address some the concerns about the quality of the provision of aged care. As most people working in aged care are unskilled, and an important share is coming from the Pacific Islands, developing bilateral agreements with the Pacific Islands in order to set up migration programs with a training component could be considered.

112. The increasing use of temporary migration gives rise to a large number of short-term stay of health workers in New Zealand, in particular for doctors. While locum schemes are certainly a good policy to address workforce shortages in rural areas, having a large number of migrants coming only for short-term stays, raises issues of turnover and its associated costs in terms of recruitment and training costs. Moreover, in order to address rural–urban imbalances, refining the points system in the context of the migration policy could be considered. For instance, instead of awarding the same additional amount of points for people settling outside Auckland as is the case now, one could introduce a points system with greater regional variations, depending on the severity of health workforce shortages.

113. Improving wages and working conditions in the health sector, developing further skill-mix approaches, and attracting back health workers who have left New Zealand, are all complementary approaches that need further consideration.

114. While improving working conditions, skill mix and education are the object of a lot of attention in many countries, attracting back health workers who have left their country has not captured much attention so far. The complexity and the costs associated with such policies are likely to be a serious deterrent. However, as the pool of New Zealand-born nurses and doctors living in other OECD countries is so important—the number of New Zealand-born nurses living in other OECD countries is almost equivalent to the number of foreign-born nurses in New Zealand—it is certainly worth considering specific programs to attract back health workers, e.g. developing alumni networks, hospital twinning etc. Recent measures adopted by New Zealand to facilitate the return of New Zealanders from abroad are encouraging. In this context, focusing efforts on Australia and the United Kingdom would be natural as most New Zealand emigrant health worker move to those two countries. Strengthening collaboration between

Australia and New Zealand on health workforce policy issues could also be a way forward for both countries.

115. As for education, strengthening coordination between the main actors—DHBs, Tertiary Education Commission and the Clinical Training Agency—would facilitate the development of a global and common view, as emphasised in a recent report of the Health Workforce Taskforce (2007). DHBNZ has a potential to play a greater role in this context. The possibility of increasing the annual intake of medical students certainly deserves further investigation. Given the importance of immigration by doctors, increasing the number of doctors trained domestically would seem a serious option, especially since the number of graduates per 100 000 population in New Zealand is below the OECD average. Attracting more foreign students is also a promising route, especially taking into account the flexibility of the New Zealand migration system to accommodate status changes. This may imply, however, reconsidering the cost-sharing of training costs for medical and nursing graduates. An issue which also applies to the case of New Zealanders as we have seen that indebtedness remains one of the main incentives for out migration.

BIBLIOGRAPHY

- Antonazzo, E., *et al.* (2003), “The labour market for nursing: a review of the labour supply literature”, *Health Economics*, Vol. 12, pp. 465–478.
- Ashton, T. (2002), “Running on the spot: lessons from a decade of health reforms in New Zealand”, *Applied Health Economics and Health Policy*, Vol. 1, pp. 97-106.
- Ashton, T. (2005), “Recent developments in the funding and organization of the New Zealand health system”, *Australia and New Zealand Health Policy*, Vol. 2, www.anzhealthpolicy.com/content/2/1/9.
- Brown, E. and A. Duncan (2001), *The Age Care Sector: an inter-union perspective, The New Zealand Nurses’ Association and the Service and Food Workers’ Union*, Wellington.
- Chiha Y.A. and C.R. Link (2003), “The shortage of registered nurses and some new estimates of the effects of wages on registered nurses labour supply: a look at the past and a preview of the 21st century”, *Health Policy*, Vol. 64, pp. 349–375.
- Department of Labour (2005a), “Registered Nurses: Occupational skill shortage assessment,” DoL, Wellington, <http://dol.govt.nz/PDFs/professional-report-registered-nurse.pdf>.
- Department of Labour (2005b), “Overview of the findings from ten professional occupation skill shortage assessment reports”, DoL, Wellington, www.workinsight.govt.nz/PDFs/professional-report-overview.pdf.
- Department of Labour (2006), *Job Vacancy Monitor—December 2006*, Department of Labour, Wellington
- Department of Labour (2007), “Occupations in Shortage in New Zealand: 2006,” DoL, Wellington www.dol.govt.nz/PDFs/jvm-shortage2006.pdf.
- District Health Board New Zealand (2003), *Workforce Action Plan*, DH/DHBNZ, Wellington.
- District Health Board New Zealand (2005), *Future Workforce: 2005-2010*, DHBNZ, Wellington.
- Dumont, J-C. and P. Zurn (2007), “Immigrant Health Workers in OECD Countries in the Broader Context of Highly Skilled Migration”, *International Migration Outlook*, OECD, Paris.
- Easton, B. (2002), “The New Zealand health reforms of the 1990s in context”, *Applied Health Economics and Health Policy*, Vol. 1, pp. 107-112.
- French, S., A. Old and J. Healy (2001), *Health Care System in Transition: New Zealand*, European Observatory on Health Care Systems, Copenhagen.

- Gauld, R. (2001), *Revolving Doors: New Zealand's Health Reforms*, Institute of Policy Studies, Wellington.
- Health Workforce Advisory Committee (2001), *The New Zealand Health Workforce: A stocktake of issues and capacity 2001*, Health Workforce Advisory Committee, Wellington.
- Health Workforce Advisory Committee (2003a), *The New Zealand Health Workforce: Framing future directions*, Health Workforce Advisory Committee, Wellington.
- Health Workforce Advisory Committee (2003b), *The New Zealand Health Workforce: Future Directions Recommendations to the Minister of Health 2003*, Health Workforce Advisory Committee, Wellington.
- Health Workforce Advisory Committee (2005), "Fit for purpose and for practice: a review of the medical workforce in New Zealand", consultation document, Health Workforce Advisory Committee, Wellington.
- Landrigan, C. (2006), "New Zealand junior doctors—An analysis of current scheduling practices and recommendations for the future", Miméo.
- Lazonby, A. (2006), "The Changing Face of the Aged Care Sector", *New Zealand Retirement Policy and Research Centre Working Paper 2006-1*, University of Auckland
- Medical Council of New Zealand (2000), *The New Zealand Medical Workforce in 2000*, MCNZ, Wellington.
- Medical Council of New Zealand (2003), *The New Zealand Medical Workforce in 2001*, MCNZ, Wellington.
- Medical Council of New Zealand (2006), *The New Zealand Medical Workforce in 2004*, MCNZ, Wellington.
- Medical Council of New Zealand (2007), *The New Zealand Medical Workforce in 2005*, MCNZ, Wellington.
- MidCentral District Health Board (2005) *Māori Health Workforce Strategy*, Mid Central DHB
- Ministry of Health (2004), *Disability Support Service in New Zealand: Part 1: Service Provider Survey* MoH, Wellington.
- Ministry of Health (2005), *Raranga Tupuake Māori Health Workforce Development Plan*, MoH, Wellington.
- Ministry of Health (2006a), *Health Workforce Development: an overview*, MoH, Wellington.
- Ministry of Health (2006b), *Training the medical workforce 2006 and beyond*, MoH, Wellington.
- Moore, J., *et al.* (2006a) "Student debt amongst junior doctors in New Zealand; part 1: quantity, distribution, and psychosocial impact", *Journal of the New Zealand Medical-Association*, Vol. 119, No 1129, www.nzma.org.nz/journal/119-1229/1854.

- Moore, J., *et al.* (2006b), “Student debt amongst junior doctors in New Zealand; part 2: effects on intention and workforce”, *Journal of the New Zealand Medical-Association*, Vol. 119, No 1129, www.nzma.org.nz/journal/119-1229/1854.
- New Zealand College of Midwives (2006), <http://www.midwife.org.nz/index.cfm/preregistration>.
- New Zealand High Commission (2003), “Skilled migration inquiry: submission no 57”, www.aph.gov.au/House/committee/mig/skillmig/subs/sub57.pdf.
- New Zealand Immigration Service (2007), *Guide for working in New Zealand: New Zealand the right choice*, NZIS, Wellington.
- New Zealand Nurses Organization (2007) “NZNO congratulates Hutt Valley DHB”, www.scoop.co.nz/stories/GE0706/S00097.htm.
- North, N., *et al.* (2006a) *The cost of nursing turnover and its impact on nurse and patient outcomes: longitudinal New Zealand study*, Te Puawai, April 2005, pp. 25-30, www.nurse.org.nz/leadership/lc_cost_study.htm.
- North, N., *et al.* (2006b), *The rates and costs of nursing turnover and impact on nurse and patient outcomes in public hospital medical and surgical units: report of a national study: 2004-2006*, The University of Auckland, Auckland.
- Notzer, N. and S. Brown (1995), “The Feminization of the Medical Profession in Israel”, *Medical Education*, Vol. 29, No. 5, pp. 377-381.
- Nursing Council New Zealand (2006), *Workforce statistics update*, Nursing Council New Zealand, Wellington.
- Nursing Council of New Zealand (2003), *The report of the Nursing Council of Zealand 2003*, NCNZ, Wellington.
- NZIER (New Zealand Institute of Economic Research) (2004), *Ageing New Zealand and Health and disabilities services: demand projections and workforce implications 2001-2002*
- OECD (2006), *Health Data 2006*, OECD, Paris.
- Pole, R. (2006), “Update on a pandemic: junior doctor debt in New Zealand,” *New Zealand Medical Journal*, Vol. 119(1229), <http://www.nzma.org.nz/journal/119-1229/1849>.
- Poot, J. and L. Sanderson (2007), “Changes in Social Security Eligibility and the International Mobility of New Zealand Citizens in Australia”, CReAm discussion paper n°12/07.
- Shield, M. (2004), “Addressing nurse shortages: what can policy makers learn from the econometric evidence on nurse labour supply?”, *The Economic Journal*, Vol. 114 (November), F464-F498
- Workforce Taskforce (2007), *Reshaping Medical Education and Training to Meet the Challenges of the 21st Century: A Report to the Ministers of Health and for Tertiary Education from the Workforce Taskforce*, Wellington.
- World Health Organization (2000), *World Health Report: Health systems: Improving performance*, WHO, Geneva.

ANNEX 1

Foreign-born health professionals by main country or region of origin, New Zealand

Birthplace and Sex by Occupation (NZSCO90)
1991 Census

Birthplace (Broad Geographic Area)	Occupation (NZSCO90)					Total
	2221 Medical Doctors	2231 Nursing and Midwifery Professionals	3231 Nursing Associate Professionals	2222 Dentists	2224 Pharmacists	
New Zealand						
Male	2,664	1,113	189	828	1,086	5,880
Female	1,080	21,264	3,243	165	870	26,619
Total	3,744	22,377	3,432	993	1,953	32,502
Australia						
Male	105	30	6	9	15	165
Female	60	516	30	3	12	624
Total	165	546	36	9	27	789
Pacific Islands						
Male	87	30	15	6	12	150
Female	33	567	99	0	9	711
Total	120	600	117	6	21	864
UK and Ireland						
Male	876	294	33	72	66	1,341
Female	369	2,742	210	33	66	3,420
Total	1,245	3,036	246	105	129	4,761
Europe (excl. UK and Ireland)						
Male	96	75	3	18	3	198
Female	42	417	39	6	6	510
Total	138	495	45	21	6	708
North America						
Male	60	12	0	6	3	87
Female	42	156	6	6	0	213
Total	105	171	9	12	3	297
Asia						
Male	453	45	0	30	15	546
Female	132	396	15	6	18	570
Total	585	441	15	36	33	1,116
Other						
Male	240	15	0	9	6	270
Female	66	213	9	3	9	303
Total	306	225	9	15	18	576
Not Elsewhere Included ⁽¹⁾						
Male	9	9	0	0	3	21
Female	6	78	6	0	3	93
Total	15	84	6	3	6	114
Total						
Male	4,593	1,629	252	975	1,212	8,664
Female	1,830	26,346	3,666	222	990	33,057
Total	6,420	27,978	3,921	1,197	2,199	41,718

All figures are for the census usually resident, employed population aged 15 to 64 years.

(1) Includes Inadequately Described/Unidentifiable and Not Stated

Note: This data has been randomly rounded to protect confidentiality. Individual figures may not add up to totals, and values for the same data may vary in different tables.

Source: New Zealand Census of Population and Dwellings, Statistics New Zealand

Foreign-born health professionals by main country or region of origin, New Zealand

Birthplace and Sex by Occupation (NZSCO95) 1996 Census

Birthplace (Broad Geographic Area)	Occupation (NZSCO95)					Total
	2221 Medical Doctors	2231 Nursing and Midwifery Professionals	3231 Nursing Associate Professionals	2222 Dentists	2224 Pharmacists	
New Zealand						
Male	2,577	1,116	189	762	705	5,349
Female	1,362	21,261	2,550	198	834	26,205
Total	3,939	22,377	2,742	960	1,539	31,554
Australia						
Male	111	36	3	9	6	171
Female	63	501	42	6	18	630
Total	180	537	45	15	24	801
Pacific Islands						
Male	3	0	0	0	0	6
Female	6	33	0	0	0	42
Total	12	36	3	3	0	51
United Kingdom and Ireland						
Male	912	282	33	84	48	1,365
Female	486	2,694	195	33	66	3,474
Total	1,398	2,976	228	120	114	4,836
Europe (excl. UK and Ireland)						
Male	126	57	0	15	6	207
Female	36	393	36	6	6	477
Total	162	453	36	18	15	681
North America						
Male	3	0	0	0	3	6
Female	3	21	0	3	0	27
Total	9	21	0	0	3	36
Asia						
Male	441	36	0	36	15	528
Female	171	324	6	12	18	534
Total	612	363	6	45	33	1,062
Other						
Male	618	66	12	33	36	765
Female	222	1,053	87	12	39	1,413
Total	840	1,119	99	48	72	2,178
Not Elsewhere Included ⁽¹⁾						
Male	48	18	6	12	9	96
Female	24	270	42	6	12	348
Total	75	288	48	18	21	444
Total						
Male	4,848	1,620	249	954	825	8,493
Female	2,379	26,550	2,961	270	990	33,150
Total	7,227	28,167	3,210	1,224	1,815	41,640

All figures are for the census usually resident, employed population aged 15 to 64 years.

(1) Includes Inadequately Described/Unidentifiable and Not Stated

Note: This data has been randomly rounded to protect confidentiality. Individual figures may not add up to totals, and values for the same data may vary in different tables.

Source: New Zealand Census of Population and Dwellings, Statistics New Zealand

Foreign-born health professionals by main country or region of origin, New Zealand

Birthplace and Sex by Occupation (NZSCO99) 2001 Census

Birthplace (Broad Geographic Area)	Occupation (NZSCO99)					Total
	2221 Medical Doctors	2231 Nursing and Midwifery Professionals	3231 Nursing Associate Professionals	2222 Dentists	2224 Pharmacists	
New Zealand						
Male	2,844	1,236	117	699	798	5,703
Female	1,704	21,909	1,845	228	894	26,580
Total	4,551	23,148	1,962	927	1,695	32,283
Australia						
Male	96	36	0	6	12	159
Female	81	546	24	3	15	672
Total	180	582	27	12	27	828
Pacific Islands						
Male	117	63	6	12	24	219
Female	45	885	45	3	24	1,002
Total	162	945	51	15	48	1,221
United Kingdom and Ireland						
Male	936	387	30	90	57	1,497
Female	582	2,859	126	42	84	3,690
Total	1,518	3,246	153	129	141	5,190
Europe (excl. UK and Ireland)						
Male	132	63	3	27	9	237
Female	102	486	33	15	27	663
Total	234	552	36	42	36	900
North America						
Male	81	24	0	9	6	123
Female	72	207	3	6	9	297
Total	156	234	3	12	15	420
Asia						
Male	639	141	3	84	51	918
Female	315	882	12	48	72	1,329
Total	954	1,023	15	132	123	2,250
Other						
Male	642	48	0	45	42	777
Female	243	633	12	27	69	984
Total	885	681	12	72	108	1,764
Not Elsewhere Included ⁽¹⁾						
Male	9	9	3	3	3	24
Female	6	99	18	3	0	132
Total	15	108	21	6	3	156
Total						
Male	5,496	2,013	168	981	999	9,660
Female	3,156	28,509	2,118	372	1,200	35,349
Total	8,652	30,522	2,286	1,350	2,199	45,012

All figures are for the census usually resident, employed population aged 15 to 64 years.

(1) Includes Inadequately Described/Unidentifiable and Not Stated

Note: This data has been randomly rounded to protect confidentiality. Individual figures may not add up to totals, and values for the same data may vary in different tables.

Source: New Zealand Census of Population and Dwellings, Statistics New Zealand

Foreign-born health professionals by main country or region of origin, New Zealand
Birthplace and Sex by Occupation (NZSCO99)
2006 Census

Birthplace (Broad Geographic Area)	Occupation (NZSCO99)					Total
	2221 Medical Doctors	2231 Nursing and Midwifery Professionals	3231 Nursing Associate Professionals	2222 Dentists	2224 Pharmacists	
New Zealand						
Male	2,805	1,317	138	648	573	5,484
Female	2,034	22,746	1,440	255	1,800	28,275
Total	4,839	24,066	1,578	903	2,373	33,759
Australia						
Male	111	48	6	12	12	189
Female	108	540	21	3	33	705
Total	219	588	30	15	42	894
Pacific Islands						
Male	117	75	18	12	24	246
Female	78	1,062	63	9	39	1,254
Total	198	1,137	81	18	66	1,500
United Kingdom and Ireland						
Male	1,029	549	15	102	63	1,758
Female	738	3,630	123	51	138	4,677
Total	1,764	4,176	141	153	201	6,435
Europe (excl. UK and Ireland)						
Male	174	81	3	27	9	291
Female	165	618	27	27	48	882
Total	339	699	30	51	54	1,173
North America						
Male	123	27	6	15	0	171
Female	84	273	9	9	9	384
Total	207	303	12	21	12	555
Asia						
Male	810	213	6	117	60	1,206
Female	567	1,833	21	87	126	2,634
Total	1,380	2,046	24	204	183	3,840
Other						
Male	750	93	6	75	51	981
Female	348	966	30	45	108	1,500
Total	1,101	1,062	36	120	159	2,478
Not Elsewhere Included ⁽¹⁾						
Male	15	12	6	0	3	33
Female	18	138	21	3	6	186
Total	36	150	27	0	9	216
Total						
Male	5,940	2,412	207	1,002	792	10,356
Female	4,143	31,809	1,752	486	2,304	40,494
Total	10,086	34,218	1,959	1,491	3,099	50,856

All figures are for the census usually resident, employed population aged 15 to 64 years.

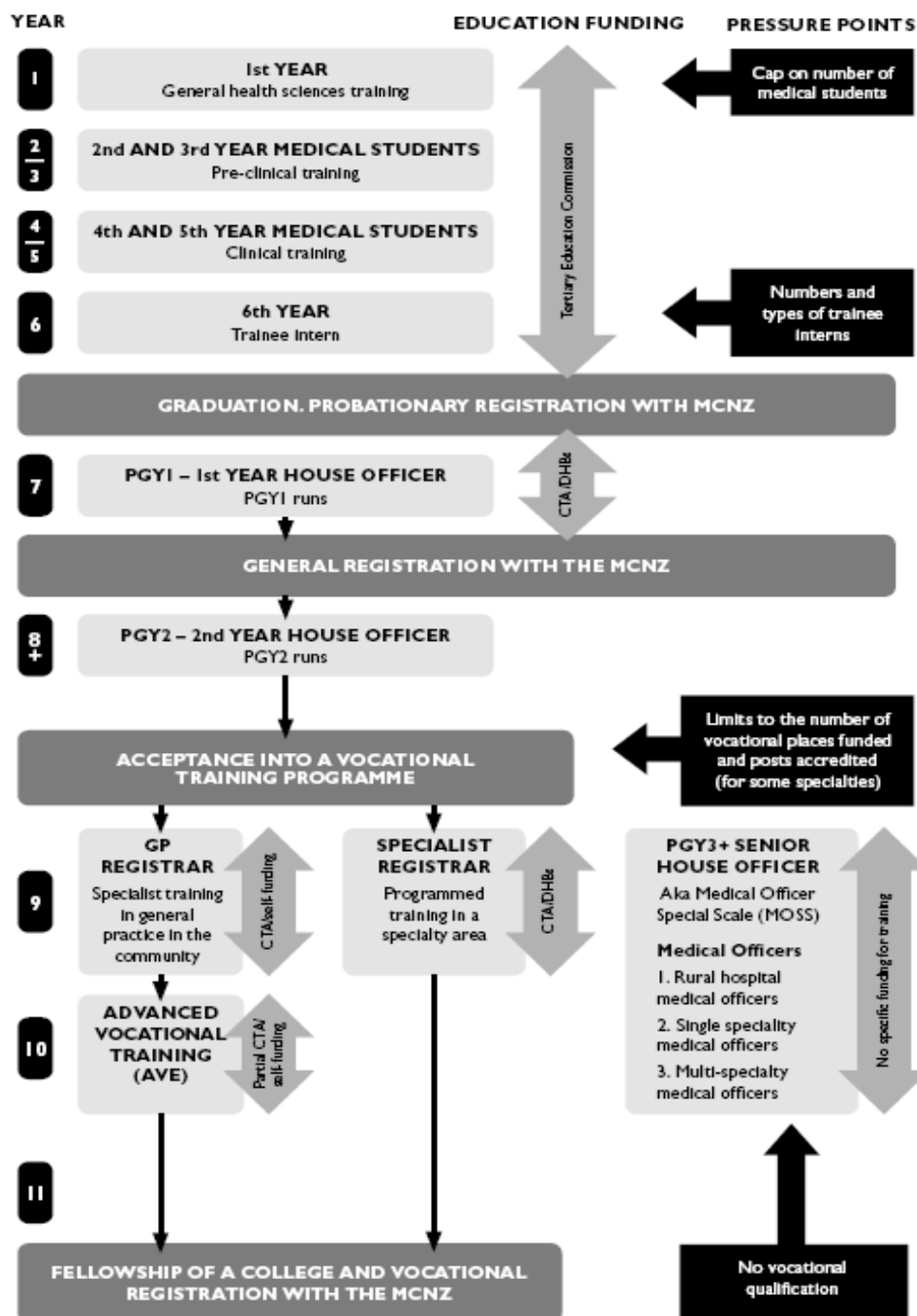
(1) Includes Inadequately Described/Unidentifiable and Not Stated

Note: This data has been randomly rounded to protect confidentiality. Individual figures may not add up to totals, and values for the same data may vary in different tables.

Source: New Zealand Census of Population and Dwellings, Statistics New Zealand

ANNEX 2

Medical education pathway in New Zealand



Source: HWAC, 2006, fit for purpose and for practice

ANNEX 3

Work and residence permits for medical doctors and nurses in New Zealand

Work permits approved to medical doctors, 2002/03 to 2006/07

nationality	2002/03	2003/04	2004/05	2005/06	2006/07	Total
Brunei Darussalam				9	2	11
Canada	13	16	41	42	18	130
Egypt		5	6	5	2	18
Fiji	5	10	8			23
France			6	9	1	16
Germany	10	25	39	35	28	137
Ghana		3	4	7		14
Great Britain	241	820	704	755	330	2850
India	31	65	48	55	54	253
Ireland	18	39	63	72	27	219
Japan	5	10	6	2	5	28
Malaysia	14	84	80	54	27	259
Mauritius	2	4	5			11
Netherlands	5	18	7	17	9	56
Philippines	3	4	9	1	2	19
South Africa	55	145	133	103	71	507
Sri Lanka	8	24	22	16	10	80
Sweden		3	5	4	5	17
United States of America	14	106	144	203	113	580
Other countries	31	79	76	79	59	324
Total	455	1460	1406	1468	763	5552

Work permits approved to nurses and midwives professionals, 2002/03 to 2006/07

nationality	2002/03	2003/04	2004/05	2005/06	2006/07	Total
Canada	5	28	21	28	14	96
China	6	17	32	11	20	86
Fiji	44	56	49	26	19	194
Finland		12	6	8		26
Germany	9	17	12	9	3	50
Great Britain	257	628	564	371	239	2059
India	83	296	184	130	32	725
Ireland	27	43	38	28	7	143
Malaysia	6	5	8	1	3	23
Netherlands	4	7	11	6	6	34
Nigeria	6	9	5	5	3	28
Philippines	108	246	214	213	168	949
Romania	3	1		7	3	14
Singapore	2	9	3	3	2	19
South Africa	42	88	53	38	20	241
South Korea	8	11	6	5		30
Spain		8	1	4	2	15
Switzerland		4		2	2	8
Tonga	6	12	10	7	4	39
United States of America	12	37	48	28	14	139
Zambia	13	19	24	5	1	62
Zimbabwe	10	30	27	85	45	197
Other countries	24	48	34	36	20	162
Total	675	1631	1350	1056	627	5339

Note. Only the second half of the 2002/03 and 2006/07 years are represented in the work permits tables.

Source: Department of Labour, New Zealand Immigration Service (both tables above)

Residence permits approved to medical doctors, 2002/03 to 2006/07

nationality	2002/03	2003/04	2004/05	2005/06	2006/07	Total
Canada			5	2	2	9
Germany	3	2	9	4	2	20
Great Britain	29	78	128	83	44	362
India	5	10	20	15	7	57
Ireland		2	7	8	2	19
Malaysia	4	12	30	22	10	78
Netherlands	1		6	4	1	12
Pakistan		4	3	4	2	13
South Africa	13	38	48	27	15	141
Sri Lanka	1		10	1	2	14
United States of America		3	18	23	9	53
Other countries	13	13	36	31	11	104
Total	69	162	315	222	105	873

Residence permits approved to nurses and midwives professionals , 2002/03 to 2006/07

nationality	2002/03	2003/04	2004/05	2005/06	2006/07	Total
Canada	2	6	6	3	1	18
China		4	23	21	5	53
Fiji	8	35	21	19	11	94
Germany	1	10	8	8		27
Great Britain	66	230	420	407	209	1332
India	16	96	155	90	34	391
Ireland	4	13	13	8	5	43
Malaysia	2	2	4	4	1	13
Netherlands	2	3	5	6		16
Nigeria		4	7	4		15
Philippines	19	78	121	122	77	417
South Africa	21	44	46	28	10	149
South Korea	4	4	12	4	1	25
United States of America	4	8	14	12	7	45
Zambia	2	10	6	7	1	26
Zimbabwe	1	14	15	14	5	49
Other countries	10	24	42	27	12	115
Total	162	585	918	784	379	2828

Note. Data refer to NZSCO Occupations of SMC (Skill Migrant Category) and General Skills principal applicants, by year of application decision. Only the second half of the 2002/03 and 2006/07 are represented in the residence permits tables.

Source: Department of Labour, New Zealand Immigration Service (both tables above)

OECD HEALTH WORKING PAPERS

- No. 32 *THE PREVENTION OF LIFESTYLE-RELATED CHRONIC DISEASES: AN ECONOMIC FRAMEWORK* (2008) Franco Sassi and Jeremy Hurst
- No. 31 *PHARMACEUTICAL PRICING AND REIMBURSEMENT POLICIES IN SLOVAKIA* (2008) Zoltan Kalo, Elizabeth Docteur and Pierre Moïse
- No. 30 *IMPROVED HEALTH SYSTEM PERFORMANCE THROUGH BETTER CARE COORDINATION* (2007) Maria M. Hofmarcher, Howard Oxley, and Elena Rusticelli
- No. 29 *HEALTH CARE QUALITY INDICATORS PROJECT 2006 DATA COLLECTION UPDATE REPORT* (2007) Sandra Garcia-Armesto, Maria Luisa Gil Lapetra, Lihan Wei, Edward Kelley and the Members of the HCQI Expert Group
- No. 28 *PHARMACEUTICAL PRICING AND REIMBURSEMENT POLICIES IN SWEDEN* (2007) Pierre Moïse and Elizabeth Docteur
- No. 27 *PHARMACEUTICAL PRICING AND REIMBURSEMENT POLICIES IN SWITZERLAND* (2007) Valérie Paris and Elizabeth Docteur
- No. 26 *TRENDS IN SEVERE DISABILITY AMONG ELDERLY PEOPLE: ASSESSING THE EVIDENCE IN 12 OECD COUNTRIES AND THE FUTURE IMPLICATIONS* (2007) Gaétan Lafortune, Gaëlle Balestat, and the Disability Study Expert Group Members
- No. 25 *PHARMACEUTICAL PRICING AND REIMBURSEMENT POLICIES IN MEXICO* (2007) Pierre Moïse and Elizabeth Docteur
- No. 24 *PHARMACEUTICAL PRICING AND REIMBURSEMENT POLICIES IN CANADA* (2006) Valérie Paris and Elizabeth Docteur
- No. 23 *HEALTH CARE QUALITY INDICATORS PROJECT, CONCEPTUAL FRAMEWORK PAPER* (2006) Edward Kelley and Jeremy Hurst
- No. 22 *HEALTH CARE QUALITY INDICATORS PROJECT, INITIAL INDICATORS REPORT* (2006) Soeren Mattke, Edward Kelley, Peter Scherer, Jeremy Hurst, Maria Luisa Gil Lapetra and the HCQI Expert Group Members
- No. 21 *THE SUPPLY OF PHYSICIANS IN OECD COUNTRIES* (2006) Steven Simeons and Jeremy Hurst
- No. 20 *CONSUMER DIRECTION AND CHOICE IN LONG-TERM CARE FOR OLDER PERSONS, INCLUDING PAYMENTS FOR INFORMAL CARE: HOW CAN IT HELP IMPROVE CARE OUTCOMES, EMPLOYMENT AND FISCAL SUSTAINABILITY?* (2005) Jens Lundsgaard
- No. 19 *TACKLING NURSE SHORTAGES IN OECD COUNTRIES* (2004) Steven Simoens, Mike Villeneuve and Jeremy Hurst
- No. 18 *PRIVATE HEALTH INSURANCE IN THE NETHERLANDS. A CASE STUDY* (2004) Nicole Tapay and Francesca Colombo
- No. 17 *SKILL-MIX AND POLICY CHANGE IN THE HEALTH WORKFORCE: NURSES IN ADVANCED ROLES* (2004) James Buchan and Lynn Calman
- No. 16 *SHA-BASED NATIONAL HEALTH ACCOUNTS IN THIRTEEN OECD COUNTRIES: A COMPARATIVE ANALYSIS* (2004) Eva Orosz and David Morgan
- No. 15 *PRIVATE HEALTH INSURANCE IN OECD COUNTRIES: THE BENEFITS AND COSTS FOR INDIVIDUALS AND HEALTH SYSTEMS* (2004) Francesca Colombo and Nicole Tapay
- No. 14 *INCOME-RELATED INEQUALITY IN THE USE OF MEDICAL CARE IN 21 OECD COUNTRIES* (2004) Eddy van Doorslaer, Cristina Masseria and the OECD Health Equity Research Group

- No. 13 *DEMENTIA CARE IN 9 OECD COUNTRIES: A COMPARATIVE ANALYSIS* (2004) Pierre Moise, Michael Schwarzingger, Myung-Yong Um and the Dementia Experts' Group
- No. 12 *PRIVATE HEALTH INSURANCE IN FRANCE* (2004) Thomas C. Buchmueller and Agnes Couffinhal
- No. 11 *THE SLOVAK HEALTH INSURANCE SYSTEM AND THE POTENTIAL ROLE FOR PRIVATE HEALTH INSURANCE: POLICY CHALLENGES* (2004) Francesca Colombo and Nicole Tapay
- No. 10 *PRIVATE HEALTH INSURANCE IN IRELAND. A CASE STUDY* (2004) Francesca Colombo and Nicole Tapay
- No. 9 *HEALTH CARE SYSTEMS: LESSONS FROM THE REFORM EXPERIENCE* (2003) Elizabeth Docteur and Howard Oxley
- No. 8 *PRIVATE HEALTH INSURANCE IN AUSTRALIA. A CASE STUDY* (2003) Francesca Colombo and Nicole Tapay
- No. 7 *EXPLAINING WAITING-TIMES VARIATIONS FOR ELECTIVE SURGERY ACROSS OECD COUNTRIES* (2003) Luigi Siciliani and Jeremy Hurst
- No. 6 *TACKLING EXCESSIVE WAITING TIMES FOR ELECTIVE SURGERY: A COMPARISON OF POLICIES IN 12 OECD COUNTRIES* (2003) Jeremy Hurst and Luigi Siciliani

A full list of the papers in this series can be found on the OECD website: www.oecd.org/els/health/workingpapers

RECENT RELATED OECD PUBLICATIONS:

HEALTH AT A GLANCE – OECD INDICATORS 2007 (2007), published biennially

OECD HEALTH DATA 2007 (2007), available in English, French, German, Italian, and Spanish on CDROM (Windows 2000/NT/XP/Vista); online version features these languages, plus Japanese and Russian

OECD REVIEWS OF HEALTH SYSTEMS – SWITZERLAND (2006)

OECD REVIEWS OF HEALTH SYSTEMS – FINLAND (2005)

LONG-TERM CARE FOR OLDER PEOPLE (2005), *OECD Health Project series*

HEALTH TECHNOLOGIES AND DECISION MAKING (2005), *OECD Health Project series*

OECD REVIEWS OF HEALTH SYSTEMS – MEXICO (2005)

TOWARDS HIGH-PERFORMING HEALTH SYSTEMS (2004), *OECD Health Project series*

TOWARDS HIGH-PERFORMING HEALTH SYSTEMS: POLICY STUDIES (2004), *OECD Health Project series*

PRIVATE HEALTH INSURANCE IN OECD COUNTRIES (2004), *OECD Health Project series*

A DISEASE-BASED COMPARISON OF HEALTH SYSTEMS: What is Best and at What Cost? (2003)

For a full list, consult the OECD On-Line Bookstore at www.oecd.org, or write for a free written catalogue to the following address:

OECD Publications Service
2, rue André-Pascal, 75775 PARIS CEDEX 16
or to the OECD Distributor in your country