

DISCUSSION PAPER

# Medical Training Board

---

The Future of the  
Medical Workforce

---



30 September 2008

**MEDICAL TRAINING BOARD**

**The Future of the Medical  
Workforce**

**Discussion Paper**

30 September 2008

Citation: Medical Training Board. 2008. *The Future of the Medical Workforce: Discussion paper*. Wellington: Ministry of Health.

Published in September 2008 by the  
Ministry of Health  
PO Box 5013, Wellington, New Zealand

ISBN 978-0-478-31828-9 (online)  
HP 4684

This document is available on the Ministry of Health's website:  
<http://www.moh.govt.nz>



MANATŪ HAUORA

# CONTENTS

Introduction	1
Definitions	3
PART 1: GETTING IT RIGHT	4
Options	6
The Issue	7
Demand for Doctors: In the Right Place, at the Right Time, and with the Right Skills	11
Meeting Demand	15
Meeting Demand: More Doctors with the Right Skills	17
Meeting Demand: Impact of Systems	22
Bringing it all Together	25
Appendix 1: Literature review from Scotland and Ireland	30
Appendix 2: Self-sufficiency and Sustainability	35
Appendix 3: The Medical Training Board's Forecasting Model and Assumptions	39
PART 2: STATISTICS	49
Statistics: Medical Training Board	51
Bibliography	76

# LIST OF FIGURES

Figure 1: Increase in the demand for health services 2010-2040	9
Figure 2: The effect of health services change on the medical workforce	10
Figure 3: Of every extra dollar of funding, the proportion needed to be spent on the population aged 65 years and over 2008-2041	12
Figure 4: Approach to estimating demand pressures for New Zealand medical graduates during training	20
Figure 5: Predicted increases in doctor numbers by type of change implemented 2010-2040	26
Figure 6: Matching supply and demand determinants for doctors to 2040	28
Figure 7: Uncertainty and determinability of known influences on the medical workforce	40
Figure 8: A strategic focus for developing information on the known influences on the medical workforce	47
Figure 9: Percentage shares of New Zealand's total health funding 1995/96 and 2003/04	51
Figure 10: Aggregate real (\$ million 2003/04) health expenditure, 1925–2004	51
Figure 11: Relationship between health expenditure and GDP in 30 OECD countries, 2003	53
Figure 12: 1950-2006 – Vote Health Expenditure (\$2006), level and as a percentage of GDP	53
Figure 13: Components of population change in New Zealand	54
Figure 14: Long-term trends in mortality and morbidity in New Zealand	55

Figure 15: Components of the medical workforce in New Zealand in 2006	59
Figure 16: Vocational training completions and retirements	62
Figure 17: Comparison of additions to registered medical doctors, with retirements and other losses: replacement of current New Zealand graduate doctors	63
Figure 18: Summary measures of changes in the demand for health services in New Zealand	63
Figure 19: Diagnosed diabetes for adults, by gender, 1996/97, 2002/03 and 2006/07 (age standardised prevalence)	64
Figure 20: Medicated high cholesterol for adults, by age group and gender (unadjusted prevalence)	64
Figure 21: Diagnosed IHD (angina or heart attack) for adults, by age group and gender (unadjusted prevalence)	65
Figure 22: Osteoporosis for adults, by age group and gender (unadjusted prevalence)	65
Figure 23: Trends in the length of stay in public hospitals: average length of stay, 1988/89–2006/07	66
Figure 24: Trends in day case surgery rates for selected types of condition	66
Figure 25: Trends in doctors by Employment Capacity	67
Figure 26: Cohort retention rate for international medical graduates by country of graduation 2000–2005	70
Figure 27: Average hours worked per week and headcount by gender	71
Figure 28: Trends in population, nurses and doctors per 100,000 population	72
Figure 29: Trends in New Zealand graduates and international medical graduates	73
Figure 30: Forecast changes to the stock of doctors in five-yearly periods	75

## LIST OF TABLES

Table 1: Current health expenditure as a percentage of GDP, 1994–2004	52
Table 2: Population of District Health Boards 1996–2036	56
Table 3: Variation in doctor patient ratios around New Zealand: GP workforce by DHB locality of main work site	57
Table 4: Territorial location of registered doctors, included international medical graduates: medical workforce by territorial authority of main work site	58
Table 5: The medical workforce in New Zealand	59
Table 6: Medical workforce by occupation	60
Table 7: Vocational training branch by gender	61
Table 8: Vocational training posts funded by the Clinical Training Agency	62
Table 9: Comparison of District Health Board reliance on international medical graduates	68
Table 10: Retention of medical graduates in New Zealand medical practice, class years 1995 to 2006	69
Table 11: Retention of international medical graduates 2000–2005	69
Table 12: Medical school entrant levels in selected countries from 1985 to 2005	70
Table 13: Comparison of sessions worked per week by surveyed Waikato general practitioners	71
Table 14: Doctors registered for practice in New Zealand	72
Table 15: Changes in the medical workforce	73
Table 16: Vocational groups of doctors registered for practice in New Zealand	74

# INTRODUCTION

This discussion paper from the Medical Training Board proposes that New Zealand will need to train more doctors in the coming decades. Estimating just how many will never be an exact process. What is clear, however, is that there will be a significant effect on the doctor numbers judged necessary irrespective of whether New Zealand plans to expand the health system based on existing structures, roles and systems or whether change occurs in health systems, structures and roles, thereby accelerating the pressures for system-wide leadership. The Medical Training Board has estimated the impact of these generally unknowable, and certainly unknown, effects on the reach that the medical community has in serving the health needs of New Zealanders.

As New Zealand doctors become increasingly scarce in parts of the health service, the country has relied on seeking alternative sources of doctors, which in itself can only ever be a partial answer. Some New Zealand doctors are working fewer hours, thus exacerbating the imbalance. The visible implications of pressure on the health system may have been obscured by the large and rapid build up in the number of overseas-trained and partly-trained doctors in New Zealand. As a consequence, New Zealand has placed huge, but only occasionally visible, pressures on the whole system of training doctors and may have slowed the preparedness of the health sector for the much larger changes it will face over the next few decades.

Part 1 of this discussion paper, entitled "*Getting it Right*", presents the Training Board's analysis of the number of doctors New Zealand is likely to have to train over the next thirty odd years. It takes account of potential influences whose impacts are able to be known and makes reasonable assumptions about those whose impacts are difficult to predict. Part 2 of the paper includes the initial stages of a statistical portrait of the medical workforce and medical training environment today. The Medical Training Board intends to report each year on the most relevant statistics, to develop a longitudinal picture that tracks New Zealand's development in supplying the medical workforce required to meet changing and increasing health needs.

The Training Board recognises that perceptions vary about the conditions and responsiveness of the medical workforce today and the country's preparedness for tomorrow, depending on where one sits in the system. Some of the information and ideas in this discussion paper naturally fall within the mandate of the Medical Training Board and for some this is not so clear. The Board makes no apologies for that. It aims to bring together enough information to act as a base for further discussion and debate.

The complexity of the health service and the duration of medical training lead to a multiplication of the potential influences on the system. These need to be accounted for. The judgements that the Training Board has used in determining what is of consequence naturally reflect both the advice the Board has received, and the judgment and experience of the members of the Board. Many of the things that the Board considers of importance to medical training, and to the demand for doctors, are well outside the ambit of those normally involved in training to rectify. The Training Board has found a number to be of such significance that its concerns could not have been reported competently without reference to them. The aim of this paper is to compellingly challenge existing practice, at a time when receptiveness to change appears to be strong.

The Medical Training Board believes it is necessary to have a very long time horizon for its work, because of the scale of change in the national and regional population composition, the long time period taken for doctors to complete vocational training, and the huge shifts expected in the care and management of chronic conditions. The paper has attempted to identify when particular levers for change might take effect and influence the number of doctors in New Zealand. As the Board will have more robust data over time, it is proposed to review its estimates in three years.

The Board is most grateful to those who have peer reviewed its discussion paper: Rienk Asscher from The Treasury, John Bryant from Statistics New Zealand, Dr John Morton from Canterbury District Health Board, Jean Pierre de Raad from the New Zealand Institute of Economic Research (NZIER), George Salmond, and Graeme Scott who is the Director of LECCG.

In drafting this paper, the Training Board is especially indebted to Lindsay Beck and David Adair of the Clinical Training Agency for their statistical modelling. James Hogan assisted with statistical analysis and Angela Yeoman with editing the report. Statistics New Zealand and the Public Health Intelligence Group of the Ministry of Health also provided their expertise and assistance.

Marilyn Goddard and Sandra Cumming from the Ministry of Health have well supported the Training Board in its work, and the publishing team at the Ministry of Health has been of much help in the timely release of this report.

Len Cook

Chair  
Medical Training Board

## DEFINITIONS

• CPD	Continuing Professional Development.
• CTA	Clinical Training Agency, Ministry of Health, funds medical clinical training as well as some non-medical clinical training.
• DHB	District Health Board. New Zealand has 21 regionally-based Boards that provide secondary and tertiary health care.
• Epidemiology	The branch of medicine concerned with the incidence and distribution of diseases and other factors relating to health (Concise Oxford English Dictionary).
• GDP per capita	Gross Domestic Product (the country's wealth), per person.
• GPs	General Practitioners.
• Locums	Doctors who choose short-term employment by more than one DHB at a time rather than permanent employment with one DHB. Locums are increasing in number among registrars.
• M10 directive	A salary-band system for doctors-in-training that links to specified ranges of hours worked; introduced in 1986.
• OECD	Organisation for Economic Cooperation and Development.
• PGY 1, PGY2	Post Graduate Year 1, Post Graduate Year 2.
• PHOs	Primary Health Organisations. Groups of primary health care providers established through the Primary Health Care Strategy.
• Prevocational years	The years between graduation from university and entry to a medical college vocational training programme (includes the trainee intern year, PGY1 And PGY2).
• Primary Health Care Strategy	New Zealand strategy focusing on improving access to primary health care and placing emphasis on population health and health promotion/disease prevention.
• Tertiary Education Commission	The New Zealand organisation which funds tertiary education including medical education.
• Training posts	Positions within DHBs and general practices for clinical training.
• Vocational qualification	A qualification gained after having completed a medical college vocational training programme and identifying the area of medicine a person is registered in (e.g. general practice, anaesthetics).

**PART 1:**  
**GETTING IT RIGHT**



# OPTIONS

---

The Medical Training Board suggests:

- changing the rationing of students into medical school;
- increasing the focus on general practice;
- co-ordination of funding for medical training;
- establishing a national medical training body strengthening linkages between training and delivery aspects of the health service;
- implementing clear performance assessment expectations; and
- increased accountability for the obligations on secondary schools to develop more Maori and Pacific people in the sciences and in medicine.

The Medical Training Board suggests options that:

1. increase the number of medical school entrants by 100, by 2012;
2. aim to attract a larger share of medical school entrants into general practice;
3. relate medical school graduate numbers and trainee posts for vocational training to workforce need;
4. strongly link the funding determined by the Tertiary Education Commission with that of the health service (through the Clinical Training Agency);
5. strengthen linkages between medical schools, the health service, and medical colleges; and
6. improve the way secondary schools work to lift the representation of Maori and Pacific students studying in the field of science, including as doctors.

# THE ISSUE

Medicine, including service delivery, treatments and outcomes, has changed markedly over the last century, and the pattern and rate of change is likely to continue for the foreseeable future.

Throughout the changes, the role of the doctor has remained pivotal.

New Zealand needs the right number of doctors and the right types of doctors, in the right locations, providing the right care.

New Zealand needs to make this occur through design, based on insights and understanding of the many unknowns that heighten uncertainty about how to balance the demand and supply of health services.

Overall, New Zealand's health service has long compared well with other OECD countries. Recent OECD studies, however, have highlighted the comparative vulnerabilities of New Zealand in its health workforce, particularly its relatively high number of international medical graduates and New Zealand's ability to compete for medical graduates in an increasingly global medical workforce market.<sup>1</sup> Other vulnerabilities include New Zealand's small size, the geographical spread of its population, and the need for a critical mass of population in any one place if specialist doctors are to provide value for money.

## International comparisons

As New Zealand faces pressures associated with demographic changes, epidemiological trends and technological and treatment advances, there will be greater challenges for New Zealand's health service in meeting the demands for its services and in comparing favourably with other OECD countries.

A literature review of some of the countries facing issues similar to those in New Zealand is included in Appendix 1. This review concludes that historical arrangements for the provision of health services and the training of medical professionals are unsustainable in other countries like New Zealand such as Scotland and Ireland.

Background on New Zealand's reliance on international medical graduates, in an attempt to cope with unsustainable practices in New Zealand's health system, is included in Appendix 2.

OECD figures show that New Zealand has been falling further below the OECD average in its doctor/patient ratio over the last couple of decades:

- In 1980 New Zealand's doctor/patient ratio was around 1.6 per 1,000 population, while the OECD average was 1.9.
- In 1990 the ratio in New Zealand was 1.8 per 1,000 population compared with the OECD average of 2.2.
- By 2006, New Zealand's ratio was 2.2 per 1,000 population while the OECD average rose to 3.1 in the same period.<sup>2</sup>

<sup>1</sup> OECD. 2008. *Health Workforce and International Migration: Can New Zealand Compete?*

<sup>2</sup> OECD. 2008. *Health Workforce and International Migration: Can New Zealand Compete?*

---

This report predicts how many more doctors New Zealand is going to need by 2012, by 2021 and by 2041, and why. It considers ways of achieving those predictions.

The New Zealand health service is complex. The sustained implementation of changes to medical training will depend on how far they address the many concerns that exist.

Canadian Stephen Birch states that: *“productivity depends on a variety of factors, including the intensity of work (proportion of paid hours given to patient care), how work is organised, technological inputs, and inputs of other types of professionals”*.

This model or approach to analysing the demand for doctors underpins the methods of the Medical Training Board.

---

While New Zealand does not compare well with other OECD countries in its doctor/patient ratio, the nurse/patient ratio is above the OECD average. In combination, this may suggest that the New Zealand doctor and nurse ratios reflect a difference in the delivery of health services that is well established in New Zealand, as well as the lower wealth of New Zealanders relative to populations in most other OECD countries.

## Demand and supply

Whether or not the key elements of the New Zealand health service are changed over time, the number of doctors needed for the future is greater than the number needed now. This paper endeavours to build an approach to forecasting future demand for health services, together with the supply of doctors that might be needed to meet that demand. In this, the Medical Training Board has taken account of the impact of changes that might be made in health systems, roles and structures over the next three decades.

The training system must bring about opportunities for ongoing change in demand and supply at local, regional and national levels. It must be robust to demographic trends, and provide a strong foundation for strategic structural and systems-related shifts in the New Zealand health service.

## Forecasting model

The Medical Training Board's forecasting model of demand and supply of doctors is adapted from a needs-based analytical framework developed in Canada by Stephen Birch.

That conceptual framework assumes that the requirement for human resources depends on four separate elements: demography, epidemiology, standards of care, and provider productivity.<sup>3</sup>

Assumptions about the trends in these elements in the New Zealand context have been drawn from the forecasts of the Ministry of Health, as developed for its *Long-Term System Framework*.<sup>4</sup>

---

<sup>3</sup> Birch S, Kephart G, Tomblin-Murphy G, O'Brien-Pallas L, Alder R, and MacKenzie A. January 2007. *Health Human Resources Planning and the Production of Health: Development of an Extended Analytical Framework for Needs-Based Health Human Resources Planning*; SEDAP Research Paper No. 168; A Program for Research on Social and Economic Dimensions of an Aging Population.

<sup>4</sup> Ministry of Health. 2008. Draft. *Long-term System Framework: Environmental Scan*.

Statistics and assumptions of health service demands from the Ministry of Health's long term study of the health service, together with demographic projections from Statistics New Zealand, are used in the Training Board's model to predict doctor demand in New Zealand.

The New Zealand health system is largely publicly-funded. Approximately 78 percent of total health expenditure is paid for by government funds.

Additional trainee doctors will involve a cost to the state, as well as to the individual trainees. This can be compared to the cost to the state of continuing to pay the higher costs of locums, as well as the cost to society of **not** training enough doctors to meet demand.

The conceptual framework and the assumptions from these forecasts of the demand for health services upon which the Medical Training Board's predictions about doctor supply and demand are based, are discussed in the body of this report. Additional detail is included in Appendix 3.

### The predicted additional need for doctors

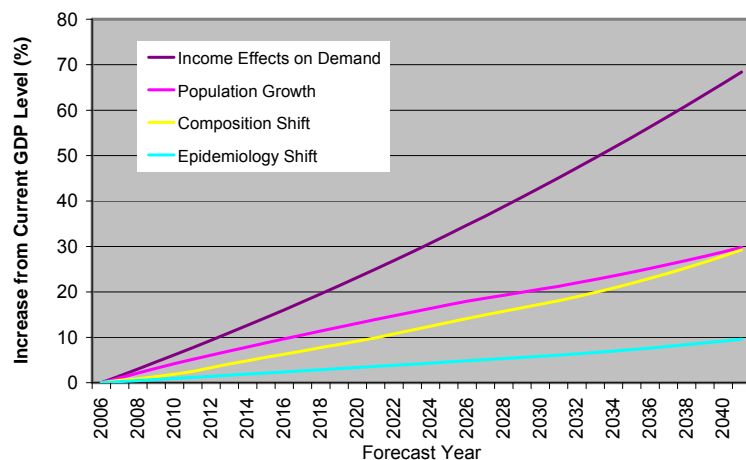
Based on assumptions of future demand, the Medical Training Board estimates that if an additional 100 doctors were to be added to the health service within one to three years, the number of doctors in New Zealand would steadily accumulate to meet the needs the Board now judges as apparent, over the next three decades.

The Training Board's estimate of the future number of doctors that New Zealand needs to be trained in order to meet future demand will need to become greater if the other factors assumed in the model (such as changes to health systems and an increased reach of health services) do not eventuate.

Any significant increase of the number of doctors in New Zealand before then will come from decisions about roles, systems and structures in the health service, as well as training processes and the employment arrangements for those currently being trained.

Figure 1 shows the contributors of the forecast increased demand for health services over the next three decades by the Ministry of Health.

**Figure 1: Increase in the demand for health services 2010-2040**



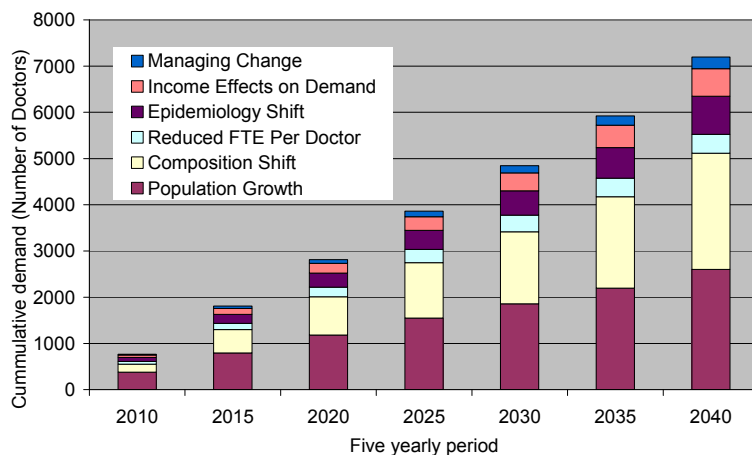
---

If the proposals in this report are implemented, then an additional 400 New Zealand-trained doctors will be in the medical workforce by 2021, and over 1,700 by 2041.

---

Figure 2 shows the main contributions to increased doctor numbers.

**Figure 2: The effect of health services change on the medical workforce**



This report discusses the extent of increased demand and how many new doctors New Zealand might need to meet that demand. It proposes ways to achieve those predictions.

# DEMAND FOR DOCTORS: IN THE RIGHT PLACE, AT THE RIGHT TIME, AND WITH THE RIGHT SKILLS

---

For the foreseeable future, health services overall will need to continually expand. It is very hard to forecast how needs might change, but some of the strongest influences can be identified.

The health service already faces huge change from population growth, population aging and the shifting mix of health conditions and prospects. Regionally, there are huge differences in the impact of population change.

In the past decade, the urgency of these changes has been met by increasing health funding to pay for the costs of locums and the costs of pay increases, but not for increases in the number of trained doctors.

Change is expected to be unrelenting, but it cannot be assumed that large budget increases will be sustainable in the long run.

---

The year to year volatility of population change in New Zealand makes the short-term forecasting of the supply and demand of doctors very difficult. This volatility undoubtedly is a disruptive influence on the capacity to detect long term shifts in demand. For example, over the past 25 years for nearly one-third of the consecutive two-yearly periods, population growth in Auckland has been close to five percent or higher, the highest regional growth rate in New Zealand.

## Population size, composition and geographic distribution

Changes in population size and composition are the most readily measurable influences on the demand for medical services. The population is projected to increase in size by an average of 0.7 percent a year between 2006 and 2036.<sup>5</sup>

One reason why the demand for health services is projected to increase significantly more over the same period than might be expected from the population increase is because people are living significantly longer. This leads to expectations of a large increase in those needing treatment and care for chronic conditions associated with ageing.

New Zealand's geographical features and population distribution mean that the distribution of health services across the country is important, and the health system as a whole should be considered.

*Shift in focus to older people:* For most District Health Boards (DHBs), services focused on younger populations will soon reduce, as their populations decline. The smaller DHBs (the majority) will be most affected by this, leaving many services at a level that is appropriate for the population size, but below the critical mass required for a safe service.

Figure 3 below shows that currently some 40 percent of public health resources relate to the needs of people over 65, although this varies between the DHBs from about 32 and 55 percent.

---

<sup>5</sup> Information provided on request by Statistics New Zealand.

Demographic change will mean that within 25 years all District Health Boards (DHBs) will eventually have to apply almost all of their additional capitation revenue to services for people aged 65 years and over.

Over the decade from 2021, it is forecast that all except the five largest DHBs will need to service a shift in focus from the population aged under 65 years, to those aged 65 years and over.

Such service shifts will have a continuing impact on the ability to provide the critical mass needed for safe services in the many specialities, and in the many localities, that exist now.

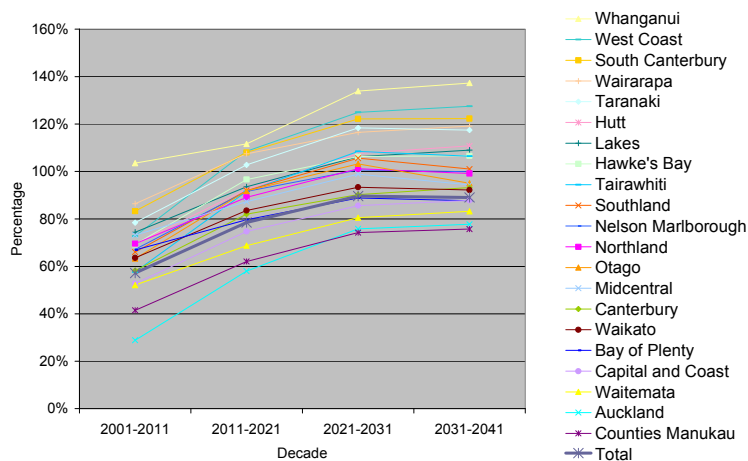
Already, hospitals in some regions are finding innovative ways to continue to maintain the delivery of specialist services in the way they now do.

The ad hoc nature so far of such innovations makes the forecasting of doctor needs very difficult.

It is also shown that of the additional money likely to be spent on health over the decade to 2011, some 57 percent will be allocated on account of growth in the number of people aged 65 and over, while in the following decade to 2021 over 78 percent of the additional allocation of population-based funding nationally will be allocated to this group. In the following two decades to 2041, this share will rise to 89 percent.

DHB data is provided in Figure 3 that encompasses the range of estimates from Counties Manukau and Waitemata at one end of the spectrum, to Wanganui and the West Coast at the other.

**Figure 3: Of every extra dollar of funding, the proportion needed to be spent on the population aged 65 years and over 2008-2041**



Without different ways of delivering specialist services, the costs to a region of the minimum scale needed to guarantee service integrity would result in a level of service not justified by the scale of local demands. The central region has recognised the enormity of this issue in its recent regional plan,<sup>6</sup> but its analytical approach has yet to be given the same emphasis on a national scale.

<sup>6</sup> Central Region District Health Boards. May 2008. *Regional Clinical Services Plan*.

---

There is likely to be continual change over the next three decades in the service mix available at hospitals outside the main centres, as rural and smaller city depopulation and the concentration of population in the main centres typify population shifts around New Zealand.

The significant projected rise in the number of people who will have chronic conditions that need care and management, along with a continuation of the development of the role of the primary care sector, means that New Zealand will need a substantial increase in the number of general practitioners, alongside changes to the nature of general practice.

The shift in the care and management of chronic conditions is expected to necessitate change from the current mix of vocationally-trained specialists, and also to shift the mix of roles among health professionals.

---

*Special issues for Auckland:* The Auckland region has the largest population mass and is the most significant growth centre in New Zealand. It is the main region that is expected to see continued strong growth over each of the next three decades. Over the same period all other regions will begin to decline, some quite significantly.

The Auckland region has a younger than average population and a higher birth rate. As the major business centre, it continues to be the focal point for internal migration, and it is the dominant point of entry for international immigrants. The region contains one-third of the population now and is expected to contain 38 percent by 2031.

The Auckland region faces extremes of income and health conditions and its health services need to anticipate the huge change that is expected. The medical workforce that will adequately serve this population will need to reflect the special ethnic characteristics of this region.

## **Epidemiology**

A large shift in the share of medical services is expected over the next three decades focused on: (a) prevention; and (b) treatment of chronic conditions.

*Prevention:* early evaluation studies indicate that a greater emphasis on primary health care appears to be bringing about change:

- the cost to patients of access to primary health care has reduced;
- there is an increase in the utilisation of primary health organisation services; and
- new programmes of care for people with chronic conditions have been developed.<sup>7</sup>

Epidemiological analysis points to windows of opportunity for the long-term management of health costs. The return on investment for actions that enable early diagnosis and treatment are well known, such as in cases of diabetes, and early childhood hearing and vision screening.

---

<sup>7</sup> (1) Cumming Dr J and Gribben Dr B; September 2007. *Evaluation of the Primary Health Care Strategy: Practice Data Analysis 2001–2005*; Health Services Research Centre.  
(2) Ministry of Health. December 2006. *Review of the Implementation of Care Plus, as at August 2006*.  
(3) Ministry of Health. June 2008. *A Portrait of Health: Key Results of the 2006/07 New Zealand Health Survey*.

---

As they move across a range of environments and services, doctors-in-training can be a key component in spreading medical innovation.

New Zealand's health system has avoided reviewing and changing its unsustainable structures, roles and approach to training doctors, by relying more and more heavily on locums and international medical graduates.

---

*Treatment of chronic conditions:* patient volumes have continually increased over the last decade, as those in the New Zealand population live longer, and the incidence of age-related and chronic conditions increases. The concentration of costly care in the last months of life means that we need to anticipate longevity increases in order to build up the resource base associated with the consequent shift in services needed.

## **Innovation**

Medicine is experiencing sometimes revolutionary shifts in diagnosis and treatment, and doctor training is evolving from teaching about practices and skills to building up a continued capacity to learn. This is reflected in the institutionalisation of continued medical training for clinicians in all specialities.

Increasing the opportunity for doctors-in-training to work in a mix of environments (most particularly health centres and rural services, but also small and large hospitals) will increase the capacity and stimulus for research and innovation.

## **Coping with uncertainty in demand**

The health service has a degree of resilience which reflects the high uncertainty about the extent to which shifts in demand for doctors occurs.

The supply of international medical graduates, however, is much more responsive to short-term demands, such as the recent record level of births, than is the supply of New Zealand graduates.

The supply of doctors in New Zealand is less able to respond to short-term changes in demand because of the comparably small number of medical graduates in any one year. This is further exacerbated by:

- the volatility of year to year changes in demand;
- rigidities relating to medical specialisation;
- the working environment and conditions; and
- rigid systems and structures.

## MEETING DEMAND

The need to increase the adaptability of the health service is urgent, and for the next five to 10 years this must become a significant priority.

The complexity of the health system means that simple solutions can sometimes have consequences that offset predicted gains.

There is continual, growing change at local, regional and national levels, all of which need insightful leadership in order for the health system to be capable of more consistency in how interactions occur, and in exploiting technological and medical innovation.

Also released by the Medical Training Board on 30 September 2008 are two accompanying papers that complement this discussion document:

- *Integrated and Co-ordinated Medical Training*
- *The Curriculum Framework*.

The Medical Training Board has developed long-term predictions of the demand for doctors over the next three decades, but these predictions are conditional on the adaptability of the health service, including the continually evolving roles of medical doctors and other health professionals, and more effectively integrated systems and structures.

The Training Board has made very strong presumptions about how, and how far, these factors might evolve and adapt in order to respond to demand. This paper considers:

- **more doctors with the right skills** including:
  - trainee doctor numbers;
  - specialisation of doctors;
  - the role of international medical graduates;
  - retention of doctors;
  - working conditions;
  - the interface between training and service delivery; and
  - inadequacies in the oversight of training working.
- **the impact of systems** including:
  - leadership;
  - reducing the fragmentation of the health system; and making decisions about regional versus central structures;
  - the reach of health services;
  - the role of health centres; and
  - productivity.

The Medical Training Board's accompanying discussion document (*Integrated and Co-ordinated Medical Training*) also considers how New Zealand might achieve the aim of the right doctors in the right place with the right skills and at the right time.<sup>8</sup>

Some of these factors, such as the training and supply of doctors, are within the scope of the Medical Training Board's purview. Others, such as systems, structures, and funding, are not. Nevertheless, for the purposes of provoking a wide-ranging discussion about the issues for the New Zealand medical system at this time, the Board has chosen to stray into areas that sit outside its official mandate.

<sup>8</sup> The Medical Training Board. 30 September 2008. *Integrated and Co-ordinated Medical Training*. Discussion Paper.



# MEETING DEMAND: MORE DOCTORS WITH THE RIGHT SKILLS

---

Training and education, coupled with research and innovation, need to be embedded as core goals in the health care system, if New Zealand is to have a sustainable health workforce.

Limiting the number of doctors entering medical school has no significant relevance as a means for rationing the level of publicly funded health services. Over-provision has fiscal costs, as it typically costs nearly \$400,000 to train a medical specialist.

There are strong forces leading to increased specialisation of doctors and other health professionals. Such specialisation increases the necessity for greater overall cohesiveness of the health service.

The less integrated the health service, the greater the lost potential for productivity gains from increasing specialisation.

---

For over two decades, until 2004, had been no increase in medical school entrants when demand pressures became significant. New Zealand does not have enough doctors in training to meet the increased needs of the next decade, and the decisions taken in 2004 and 2007 to train more doctors will take a decade to have an effect.

This section of the report focuses on educating, training, and retaining doctors with the best skills.

## Trainee doctor numbers

New Zealand rations the supply of doctors trained in New Zealand. In 1982, the number of medical school places was reduced by over 50 to 285 per year, and this was unchanged until 2004. Since 2004 the number of funded medical school places had been raised twice:

- from 285 to 325 a year in 2004; and
- to 365 a year in 2007.

As the scarcity value of doctors increases, the medical school cap may have perverse effects. The fiscal risks from over-provision need to be considered alongside those from under-provision. There are high opportunity costs from increasing medical school numbers. For example, if the medical school intake was to increase by 250 students, then over 20 years New Zealand would have absorbed into health some 5,000 additional scientifically-inclined individuals who were, therefore, unavailable for training in other disciplines.

## Specialisation

Continued medical specialisation has underpinned some of the efficiency gains and innovations in the health service. To effectively realise the benefits of increased specialisation there needs to be increasingly strong systems within hospitals and among DHBs.

The near nationwide availability of many medical services in New Zealand has been founded on the general competence of doctors, regardless of their degree of specialisation. The general nature of the foundation training received by medical practitioners has made the training system more capable of responding to shifts in the mix of demands on medical specialists.

---

The trend to higher specialisation makes it unlikely that smaller district health boards with all but their older populations declining in number would be able to afford the capacity to have immediate access to a variety of medical services, without placing at risk the quality overall of national services.

The OECD recently reported that for every doctor trained in New Zealand who lives overseas, there were two doctors living in New Zealand who were trained overseas.

According to the Medical Council's 2006 publication *The New Zealand Medical Workforce*, 40 percent of all practising doctors in New Zealand in 2006 were international medical graduates.

Governance of training and the linkages between medical school, the health service, and medical colleges need to be strengthened.

Stronger links could help reduce the variability in experiences of doctors-in-training on matters that are critical to their completing training, and getting the most from each experience.

---

Hospitals in some localities are unlikely to be able to continue to operate specialist services where, in order to function on the scale needed to guarantee service integrity, the costs to the region would result in a level of service not justified by the local resources.

This is likely to be a cause of continual change in the service mix available at hospitals outside the main centres, as rural and smaller city depopulation and the concentration of population in the main centres typify population shifts around New Zealand over the next three decades.

The management of regional disparities in health services provided by medical specialists, particularly general practitioners, could be alleviated by finding new ways to ensure that a significant share of additional medical trainees are employed in ways that reduce specific concerns about maldistribution of doctors.

### **The role of international medical graduates**

International medical graduates have long been a mainstay of the New Zealand health service. Changing demands that reflect the volatility of population change in New Zealand have long been met initially by international medical graduates.

The skewed distribution of doctors in regions and in some fields of medicine has been mitigated by the recruitment of international medical graduates for these posts.

There is a concern that the source of international medical graduates may diminish as other countries offer more attractive employment packages and living conditions. There is a danger in being as reliant as New Zealand is on overseas-trained doctors.

Appendix 2 provides additional background information on international medical graduates. This paper assumes that additional doctor demand over time will be met by New Zealand-trained doctors. As a consequence, the share of international medical graduates would fall to about 30 percent of doctors in New Zealand over the next 30 years, compared with about 40 percent in 2006.

---

Because of the generally independent operation of regional health services, there are uncertainties about what the local trends in medical services mean nationally.

The rise in the number of junior doctors who choose locum work has had different consequences for DHB services, depending on the location and the medical speciality service.

The wide range of causes complicates developing a national focus on mitigating their consequences.

There is a growing gap between the number of graduates from any one graduate year who remain in New Zealand, and the number of training posts to be filled.

---

## Retention

To ensure that New Zealand has a sustainable medical workforce to provide health services into the future, a significant proportion of staff in all medical centres should be in permanent positions with less reliance on locums.

The Medical Council's 2006 workforce survey shows that by the third year after graduation, 25 percent of New Zealand graduates are not practising in New Zealand. This figure has been consistent for some years. There is a risk, however, that it may change in the future as the impact of student debt and higher overseas salaries is felt. If New Zealand was to reduce this loss by 20 percent it would gain the equivalent of an extra medical school year intake every 15 years.

Working conditions, including the need for long hours, may also contribute to the loss of doctors from the health system.

## Working conditions

The working life of doctors has changed considerably over the past decades, and there is a high probability that these changes will not abate. The most obvious trend has been a reduction in the length of the working week. There is also a continued marked preference for New Zealand graduates to work in a specialist field and in a major centre. How these trends will evolve is difficult to foretell.

Industrial agreements bring a rigidity to conditions of employment that might otherwise be influenced by the continuing pressures and demands faced by health professionals, and which cannot be predicted at the time awards are settled.

Alongside the introduction of the M10 working time directive in 1986 there have been changes in the employment of doctors-in-training in hospitals. As the demand for doctors-in-training to provide services in DHBs has expanded, the annual increases in the demand for junior doctors have exceeded the capacity of the medical training system.

Organised and regular engagement providing leadership to medical training as a rigorous process has not occurred among the university, DHB and medical college partners in the medical training system, despite a high degree of bilateral exchanges.

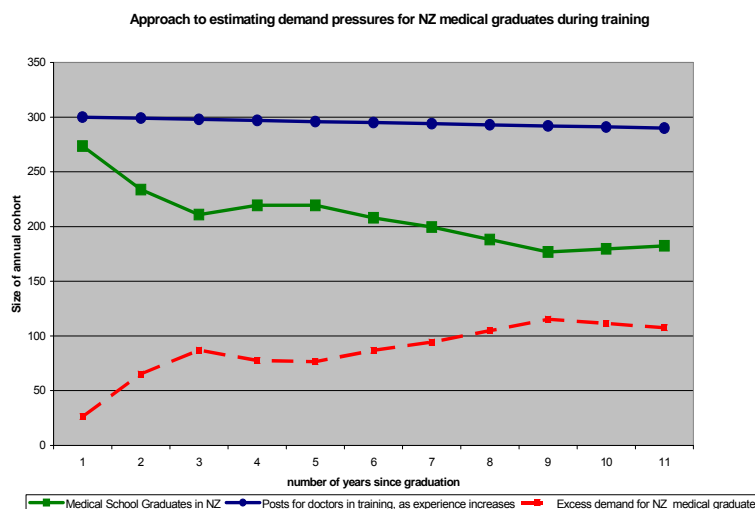
There has been little in the way of common, ongoing governance of these complex medical training arrangements and linkages.

Direct measures are required of the number of hours of vocational training that now provide effective and relevant experience and guidance to doctors-in-training. The Board has heard arguments that the range of effective experiences has reduced, and that there may be a large but unmeasured variation in the experiences of any one group of doctors.

Doctors-in-training may have longer periods of practising under some form of supervision. At a time when there is pressure to reduce the time taken to train doctors, the country can ill afford this outcome.

The gap between demand and supply reflects both the past failure to adjust the medical school intake, and growth in the number of training posts not associated with long-term vocational training needs. There may be a mix of reasons for the excess of posts, including the obligations within industrial agreements, the belief that doctors-in-training reduce costs compared to senior medical officers, or a failure to rethink the roles of doctors compared to other health professionals. We have not been able to draw this chart exactly from DHB sources.

**Figure 4 Approach to estimating demand pressures for New Zealand medical graduates during training**



### Interface between training and service delivery

The hospital has remained the predominant place for training doctors. The inextricable ties between training and service delivery in a hospital make it difficult to direct training activities without having to regularly face service delivery pressures.

This gives rise to a tension between training and service delivery that has been exacerbated through the specification of working arrangements for doctors without regard to the nature of the apprenticeship model, and the changing clinical context within which it operates.

This is further exacerbated by the inadequacy of co-ordination and monitoring of trainees' progress, and lack of co-ordination between service needs, training posts and medical school trainees.

## Inadequacies in the oversight of medical training

The dominance in clinical training of the hospital industrial setting means that new practices involving service delivery, patient safety, efficiency, and innovation are often established independently of their impact on training.

Currently, medical education and training follows a rigid path that is structured around set timeframes.

Trainees learn at different speeds and some have different home environments that are not conducive to a time-based linear training structure.

A move to a competency-based structure that includes experiential learning would better support the different needs of trainees. Clear assessment programmes would better ensure quality compared with the current training system.

Industrial agreements cover the working conditions of doctors, including those in-training, and their working hours. They also specify workforce balances and places of work, and intensively monitor changes to agreed arrangements.

There are a number of key players involved in medical education and training and each has been separately constituted with a high degree of autonomy.

The universities and medical colleges have, respectively, academic autonomy and professional independence. The undergraduate training in universities, and at vocational training level in medical colleges, is subject to standards and regular review by the Australian Medical Council on behalf of the Medical Council of New Zealand.

The 21 DHBs operate independently and, at present, the mechanisms for external review of the early postgraduate learning experience in DHBs are relatively less structured.

The Medical Council has statutory independence for its role in the accreditation of medical practitioners as being fit to practise.

Doctors-in-training continue to deliver health services while the inadequacies in the medical training system continue to grow. These include:

1. inconsistent oversight of trainees;
2. local variations in consultant training capacity;
3. inadequacy of the number of training places in general practice settings to provide certainty of access to primary care services;
4. inconsistencies in availability of trainee funding at different stages of the medical training continuum;
5. variation in standards of entry to medical colleges and uncertain recognition of prior learning;
6. doctors can conclude their medical training by obtaining posts as a medical officer, but are not recognised by colleges, with a consequent impact on Continuing Professional Development (CPD), training, and continued lack of clarity in their standing in a medical vocation;
7. limited national oversight of the impact of local failures on health service confidence and increased precautionary actions by clinicians; and
8. an absence of performance measures to recognise and evaluate the significance of training to health providers.

## MEETING DEMAND: IMPACT OF SYSTEMS

---

Through the absence of systematic leadership of what have become critical integrating elements of the health service, New Zealand fails to bring much needed cohesiveness to medical and non-medical facilities essential to the country's health services.

Unless this changes, New Zealand will miss significant opportunities for increasing the reach of medical and other health professionals, and ignore the considerable potential to drive productivity change by active leadership at the national and regional levels of systems, roles and structures.

Regional and national leadership is needed now to plan for sustainable service delivery in different ways. Without this leadership, planning future medical workforce levels will continue to be a fraught process.

---

The forecasting of future doctor needs is further complicated by the need still for a cohesive direction for extending clinical service networks at both national and regional levels, although the DHB system does not of itself prevent this happening.

The Medical Training Board recognises the potential benefit of work being carried out now by the central region DHBs as a role model for future approaches to service delivery. This will have an impact on where trainee doctors are placed during vocational training years.

The Board is of the opinion that the implementation and operation of better health service systems will significantly impact on the working conditions, training, performance assessment, and retention of New Zealand medical graduates. Factors central to this achievement are:

- leadership;
- reducing the fragmentation of the health system, and making decisions about regional versus central structures;
- the reach of health services;
- the role of health centres; and
- productivity.

### Leadership

Without system-wide leadership, the expansion of the health system will not necessarily bring about the significant improvements in health care expected when doctor numbers increase.











































































































