THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

MEDICAL AND HEALTH SCIENCES

UNIVERSITY of OTAGO
Te Whare Wānanga o Otāgo
NEW ZEALAND

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The future medical workforce of New Zealand is a matter of national importance and any discussion about expanding medical student training must be done within the framework of a national strategy and with broad support and commitment.

The Government's current strategy is evidence based, cost effective, and on track to achieve its objectives. The Universities of Auckland and Otago are committed to fulfilling the government's existing plan for growing the supply of medical graduates in this country. This 43% growth (400 graduates in 2008 to 570 by 2020) has been carefully planned and designed to meet New Zealand's future health workforce in all areas, and especially in rural primary healthcare. This national plan cannot be accomplished without the support of all DHBs.

If the national plan is to be reviewed, then this must involve a comprehensive analysis of current capabilities and alternatives, along with broad consultation. An *ad hoc* initiative does not recognise or do justice to the complexities of medical education and training.

1. NZ has planned for a sufficient pipeline of medical graduates

The predicted increase in medical graduates will result in New Zealand having more doctors per 100 000 of population than in the USA or Canada and a similar number to the UK (Table 1). These data suggest that the existing plan for the New Zealand medical workforce is consistent with OECD peers.

	2000	2010	2015	2020**
New Zealand	7.4	7.3	8.7*	11.9
Australia	7.4	12.08	16	
Canada	5.2	7.2	8.0	
Ireland	14.4	17.2	22.8	
UK	7.5	13.5	13.5	
USA	6.4	6.6	7.5	

Table 1 Medical graduates pre 100 000 population in the OECD 2000-2015

* NZ population = 4.59 million and 399 medical graduates

** Based on a predicted population of 4.86 million and 580 domestic graduates by 2020

The introduction of a further 240 undergraduates (60 students in each of the four years of the programme) would put severe pressure on available training places in the upper North Island. It is our firm belief that additional placements will be difficult to find particularly in critical specialties such as general practice, paediatrics, psychiatry, obstetrics and gynaecology.

2. The Waikato proposal

The Waikato proposal is based on four challenges that we believe are already being proactively addressed by Otago and Auckland:

1. A relative lack of Māori and Pacific graduates
2. A relative lack of rurally-based graduates.
3. A relative lack of community-based teaching.
4. The five-year programmes fails to credit relevant prior learning for graduate entrants.

Auckland and Otago graduated 455 new doctors in 2015. By 2020, this will have increased 25% to 570 per annum. This is against an annual population growth of 1.13%. Approximately 70% of the intake are undergraduates from the pre-medical first year (1+5) and approximately 30% enter as graduates from another degree. Students are accepted from around the country and both programmes have three preferential admissions pathways (Māori, Pacific and rural).

Māori and Pacific Admissions scheme

Both Otago and Auckland are now preferentially enrolling young Māori at demographic equity, something that has taken many years and significant resources to achieve. These numbers will soon result in demographic equity of graduates with a completion rate of Māori students through our programmes of over 90%. Both Otago and Auckland are achieving similar success with Pacific medical students. This year, 80 Māori doctors graduated from our two programmes and this number is set to reach 100 by 2020. This is compared to fewer than 10, only 25 years ago.

Admitting inadequately prepared students results in high failure rates. It has taken over 20 years for Otago and Auckland to build the infrastructure, knowledge and skills necessary to achieve demographic equity in Māori and Pacific enrolments. Our support programmes are comprehensive and complex and require additional resources from the University, Faculty, external agencies and communities. These resources include people: Māori academic and professional staff, kaumātua, and also financial resources for events, space, basic and specialised academic support, cultural support and pastoral support. We currently meet with and accept, bridge or advise all Māori students from around the country who are seeking a medical career. The Waikato proposal makes the assumption that there is an untapped cohort of qualified Māori graduates who have not yet considered either Otago or Auckland – our experience tells us that this cohort already has substantial opportunity to undertake medical training.

Rural and Regional Admissions scheme (RRAS)

This scheme recruits students from a rural background who are more likely to return to work there. Recent evidence indicates that 50% of students admitted under our RRAS 7-15 years ago have returned to work in regional and rural communities [1].

	2013	2014	2015	2016
University of Auckland				
Māori and Pacific	43	53	36	52
Rural	32	39	44	48
University of Otago				
Māori & Pacific	40	45	55	69
Rural	50	50	55	55
TOTAL	**165**	**187**	**190**	**226**

Table 2. New Māori and Pacific and Regional and rural enrolments entering Y2 at Auckland and Otago Universities. NB. The total in these two categories over the 5 years of our programmes is now over 900.

Graduate entry

The Waikato plan proposes a 4-year graduate entry programme accepting students from any prior degree. Non-science students will thus require a crash course in biomedical and health sciences from a university that has no expertise (e.g. no anatomy, physiology, immunology, pharmacology, microbiology, or population health). Such a programme will not receive AMC accreditation until it can show it has the necessary academic leadership and competencies and that the learning can be delivered over a reasonable time frame. The Auckland and Otago programmes credit science graduates with one year of learning, entering at Year 2 while non-science graduates receive 2 years of comprehensive biomedical and health science training. If the proposal is approved as written, New Zealand would be producing two different medical graduates. The likely outcome would be differentiated postgraduate training and career pathways and would not address shortages in other disciplines.

3. Regional and rural training is already a strong features of the existing programmes and there are strong relationships with mid-North Island DHBs

Both Otago and Auckland utilise extensive community-based teaching with sizeable student cohorts spending full teaching years located in rural and regional settings such as Whangarei, Rotorua, Taranaki, the Bay of Plenty, Napier/Hastings, Palmerston North, Nelson, and Invercargill. The Auckland medical programme is a partner with Waikato DHB for medical student training. The 128 Auckland students currently at Waikato is planned to grow to about 150.

Regional and rural year long cohort placement cohorts

- Northland DHB Year 5 and 6 (n = 36 students/year)
- BOP DHB Year 4 and Year 6 (n = 40 students/year)
- Lakes DHB Year 4 and Year 6 (n = 24 students/year)
- Taranaki DHB Year 6 (n = 16 students/year)
- Waikato DHB Year 4, 5 and 6 (n = 128 students/year) – to increase to 150 students/year

Planned new cohorts

- BOP DHB Year 5 (n = 18 students /year) in 2017
- Taranaki DHB Year 5 (n = 18 students /year) in 2018
- Lakes DHB Year 5 2018/19 (n TBA)

Waikato has already indicated to Auckland in a letter from Dr Nigel Murray, that it will be seeking a reduction in the number of Auckland undergraduates at Waikato hospital. This will force Auckland to reconsider the nature of its programme, since it relies very heavily of the continued support of Waikato DHB for clinical placements.

General Practice placements
All Auckland students undertake eight of their fourteen-week General Practice attachments in regional and rural areas.

Results emerging from research conducted by both schools shows the effectiveness of these approaches in attracting graduates to work in rural settings. Such evidence is consistent with, and builds on, similar findings internationally. From our own work:[1]

- 30% of all medical students intend to work in a regional-rural career; approximately 40% of the NZ population lives in regional-rural areas.
- There will always be more medical students from an urban rather than regional-rural background because of New Zealand's population distribution.
- About half of students from regional-rural backgrounds change their minds about location of practice.

Both Auckland and Otago have excellent working relationships with mid-North Island DHBs and consultation confirms that there is no support for the Waikato proposal from these DHBs.

4. The shortage of General Practitioners is addressed through strategic funding

The Waikato proposal focuses on producing more GPs. We acknowledge that there is a shortage of regional and rural GPs across New Zealand and this is being addressed through an increase in total graduate numbers coupled with increased funding for GP training through HWNZ. This has resulted in more New Zealand graduates choosing General Practice. The GPEP1 training programme had 183 placements in 2015/16 compared to 130 in 2012/13 (Table 3), an increase of 40%. With further strategic funding and with current expanding student numbers and shortages of hospital-specialist training places, more graduates will be incentivised to consider General Practice as a career. We fully support the need to provide constructive and positive experiences in general practice settings during medical school and this already occurring (e.g. all Auckland students complete 14 weeks of General Practice), but it is important to understand that career decisions are mainly based on the opportunities and incentives after graduation. Additional GP students from a third programme would demand increased funding for GP training, and it is not clear that there are sufficient training positions for them.

GP Training numbers (GPEP1 programme)					
Year	***11-12***	***12-13***	***13-14***	***14-15***	***15-16***
Applications	197	163	184	213	241
Placements	154	130	125	171	183
%	*78.2*	*79.8*	*67.9*	*80.3*	*75.9*
College employed					
Tax free Bursary	138				
College employed -Salary		130	118	154	155
Private employed					
Subsidy to practice	16				
Private employed		0	7	17	28
IMG vs NZ citizen					
NZ citizen		83	76	115	128
IMG		47	49	56	55
Total		**130**	**125**	**171**	**183**

Table 3: Number of graduates undertaking GP training.

5. The postgraduate training pipeline is currently bottlenecked

Postgraduate medical training is bottlenecked at PGY1 & 2. The current graduating cohorts can only find pre-registration positions because DHBs are being required to create new positions for them. Producing further graduates who are unable to obtain the positions they need to become registered will not meet workforce shortages. The numbers of medical graduates exiting Otago and Auckland will not reach steady state until 2020, so accommodating an additional 60 graduates a year from Waikato will put added pressure on this pipeline.

Currently only half of those students admitted under existing rural and regional admissions schemes return to the regions[1]. Unless there is a bonding scheme or a more attractive pathway for rural and regional general practice, the Waikato programme will produce a similar ratio of urban/rural practitioners.

There is a shortage of GP training places nation-wide and the Auckland medical programme in particular is struggling to find sufficient GP placements for its expanding student numbers. This is further compounded by the new requirements for PGY community based attachments (CBA) which further compete for limited GP resources. A third programme will mean further competition for limited places.

Otago and Auckland are working with the RNZCGP to develop a national GP training strategy to enhance opportunities and pathways into rural general practice. This is the most cost effective and pragmatic approach to addressing this issue i.e. using existing resources and institutions to address the rural health needs.

The RNZCGP does not support a third programme at Waikato.

There is a world-wide shortage of medical graduates choosing to work in rural areas primarily caused by a lack of incentives; not because of inadequate training or medical student selection.

There are shortages in other high needs areas (e.g. psychiatry, general medicine, general surgery, aged care and palliative medicine). Establishing a new programme that just focuses on rural GPs does not address shortages in other disciplines.

6. A new medical programme will require extensive investment in high quality university staff and infrastructure

Academic staffing is a major challenge for all medical schools in Australia and New Zealand, in that there is limited availability of appropriate academic staff in all relevant fields, and inevitably some core disciplines have been relatively underserved. The Australian experience tells us that a particular challenge for new medical schools has been the recruitment of leaders in curriculum design and implementation, and it is likely that a new medical school in New Zealand at a university with no capacity in these areas, would result in significant loss of academic staff from Otago and Auckland.

Fifteen regional training hubs will require significant capital and long-term investment in staffing.

7. Does the University of Waikato have the requisite research base to underpin medical student training

A further area of challenge is the requirement for new medical schools to develop an adequate research base to underpin their education programs. The University of Waikato has a very weak foundation in medical sciences, health sciences and public health on which to base a medical programme. Waikato does not feature in the QS rankings for Biological Science and, according to the 2012 PBRF rankings, has no A-rated academic staff in the fundamental disciplines that are required to support medical training, such as biomedical science, chemistry, and molecular, cellular, and whole organism biology.

8. Conclusions

The nature of the future medical workforce of New Zealand is a matter of national importance. Medical student training is complex and expensive. Where doctors choose to work and in what disciplines is only in part determined by student selection and undergraduate training experiences. There are other important factors in the postgraduate environment, both training and social, that contribute to career decisions. Consequently any discussion about expanding medical student training should be carried out within the framework of a national strategy that considers demographic projections, the availability of biomedical and clinical training infrastructure, the capacity of New Zealand's medical academic workforce, the financial and economic implications, and the continuum of training. Extensive consultation and agreement is essential. An *ad hoc* proposal aimed primarily at developing the reputation of an individual university and region but which lacks the support of most, if not all, key health authorities and organisations in New Zealand has a high risk of failing.

Otago and Auckland are working with the RNZCGP to develop a national GP training strategy to enhance opportunities and pathways into rural general practice. This is the most cost effective and pragmatic approach to addressing this issue i.e. using existing resources and institutions to address the rural health needs.

1. Poole, P, Stoner T., Verstappen, A. and W. Bagg (2016) Medical students: Where have they come from and where are they going? NZ Med J 129 1435