Tertiary Education Commission
Te Amorangi Mātauranga Matua

MINISTRY OF HEALTH
MANATŪ HAUORA

THE TREASURY
Kaitohutohu Kaupapa Rawa

Joint Tertiary Education, Health and Treasury Report:

The updated University of Waikato/Waikato DHB proposal to establish a third medical school in New Zealand

Date:	7 July 2017	**TEC priority:**	Medium
Security level:	In Confidence	**Report no:**	B/17/00540
		Minister's office No:	

Action Sought

	Action sought	Deadline
Hon Paul Goldsmith Minister for Tertiary Education, Skills and Employment **Hon Jonathan Coleman** Minister of Health **Hon Steven Joyce** Minister of Finance	**note** the information contained in this briefing; **forward** this briefing and attached covering letter to the Prime Minister; and **discuss** options for progressing the consideration of this proposal and broader issues of rural health with your Ministerial colleagues.	
Enclosure: Yes	**Round Robin:** No	

Contact for telephone discussion (if required)

Agency	Name	Position	Telephone	1st contact
TEC	Tim Fowler	Chief Executive	s9(2)(a)	✓
Ministry of Health	Stephen Barclay	Chief of People and Transformation	s9(2)(a)	✓
Treasury	Andrew Rutledge	Team Leader Labour Markets and Tertiary	s9(2)(a)	✓

THE FOLLOWING DEPARTMENTS/AGENCIES HAVE SEEN THIS REPORT

☐ CERA	☒ DPMC	☐ ENZ	☐ ERO	☒ MBIE	☒ MoE	☒ MoH
☐ MPIA	☐ MSD	☐ NZQA	☐ NZTE	☒ TEC	☐ TPK	☒ Treasury

Minister's Office to Complete:

☐ Approved	☐ Declined
☐ Noted	☐ Needs change
☐ Seen	☐ Overtaken by Events
☐ See Minister's Notes	☐ Withdrawn

Comments:

Recommendations

Hon Paul Goldsmith, Minister for Tertiary Education, Skills and Employment; **Hon Jonathan Coleman**, Minister of Health; and **Hon Steven Joyce**, Minister of Finance;

It is recommended that you:

1. **note** the information contained in this briefing;
2. **forward** this briefing and attached covering letter to the Prime Minister; and
3. **discuss** options for progressing the consideration of this proposal and broader issues of rural health with your Ministerial colleagues.

Tim Fowler

Chief Executive,
Tertiary Education Commission

06 / 07 / 17

Stephen Barclay

Chief of People and Transformation,
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Hon Paul Goldsmith

Minister for Tertiary Education,
Skills and Employment

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Hon Jonathan Coleman

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Hon Steven Joyce

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Purpose

1. This briefing provides information on the University of Waikato and Waikato DHB joint proposal to establish a third medical school in New Zealand. The briefing sets out the problem that the proposal is trying to address, the potential solutions, the benefits and issues of the Waikato proposal, and options for your next steps.

2. A summary of the proposal is provided in Appendix 1. Key information about the University of Waikato is provided in Appendix 2.

Executive Summary

3. The University of Waikato and Waikato District Health Board (DHB) have jointly developed a proposal (the Waikato proposal) to establish a third medical school (the school) based in Hamilton, with enhanced rural clinical training.

4. The proposal seeks the following funding from the Crown:

   - Capital expenditure of $111.7 million ($131.7 million total minus $20.0 million in private philanthropic capital);
   - Operational funding when fully operational (from 2032) of approximately $75 million per year. This includes $24 million Student Achievement Component (SAC) 3+ funding, $9.5 million of research funding and funding of $32 million from Health Workforce New Zealand (HWNZ) for post-graduate and vocational training; and
   - An operating subsidy while being established of $102 million.

5. The total cost to the Crown over ten years (2017-2026) is estimated at $313 million. The on-going operating cost is the same per EFTS as for other medical schools. The majority of the 10 year funding is establishment costs.

6. The school would comprise a four-year graduate-entry medical programme for 60 students per annum from 2021. This is a model of training used commonly in other countries eg Australia. The University of Otago (Otago) and University of Auckland (Auckland) offer a full six-year undergraduate programme, and graduate entry with one year less - a five-year programme (30% of their medical graduates take this route). The first fully qualified Waikato doctors would complete their training in 2029.

7. The Waikato proposal seeks to address the lack of doctors in rural and provincial practice, General Practitioners (GPs) in particular, by delivering medical graduates that are marginally more likely to choose a rural career.

8. Officials agree there is a maldistribution issue within the medical workforce. HWNZ data indicates that New Zealand is training enough doctors at a national level. Alongside International Medical Graduates (IMGs) – together this ensures a sufficient GP workforce through to 2026 (the end of its forecast period).

9. New Zealand has a large proportion (43%) of IMGs in its workforce and although the Ministry of Health forecasting expects this to decline slightly, it remains high in comparison to other countries. The Waikato proposal cites this is a problem because there can be poorer health outcomes resulting from the high turnover of IMGs (most leave within three years) and their lack of cultural competency which is particularly important in some specialties. The IMG workforce brings some diversity to the workforce and reduces the overall cost of workforce supply (it is cheaper to import doctors than train New Zealanders). There is no threat to the supply of IMGs given oversupply of doctors in other countries.

10. The underlying reasons for the shortage of rural doctors are not solely supply issues, but rather relate to the general attractiveness of working (and locating family) in more remote locations, the working conditions, and perceptions that rural practice is lower paid and has a higher workload than other specialities. Ministry of Health analysis shows the addition of an

extra 60 New Zealand trained doctors will only reduce the reliance on IMGs by a maximum of three percent, but nevertheless a new school will increase opportunities for New Zealanders to train as doctors.

11. There are a number of alternative policy options that government can consider to address rural access issues, such as, alternative models of primary care, greater use of nurse practitioners[1] and other health professionals, leveraging new/digital technologies to improve access, transport subsidies and changes to working conditions.

12. The Waikato proposal has several main benefits including:

- it is likely to increase the number of new graduate doctors seeking rural employment in the Midland Region (the area covered by Waikato, Bay of Plenty, Lakes, Tairawhiti and Taranaki DHBs), albeit marginally;
- it lowers the costs of graduate-entry medical training as there is one less year than the current option;
- it has and would put competitive pressure on the other Medical schools, which are re-invigorating their efforts to recruit and train people who have an interest in practicing in rural areas, and also encouraged them to consider redesigning their programmes.

13. But, the Waikato proposal is very costly.

14. In addition, it is not clear that this proposal represents the best use of funding. Other interventions might be more effective for improving rural health and access to health services in rural areas eg greater use of technology, revisions to existing initiatives such as the voluntary bonding scheme, and greater use of allied-health professions.

15. In addition, if there was to be an extension to the numbers of doctors trained, and a focus on rural training, there may be less costly ways of achieving this, such as doing this through other universities which can afford to contribute more of their own resources (particularly capital) to establishing a programme.

[1] Nurse Practitioners are registered nurses with a clinical masters degree whose role includes diagnosis and management of health consumers with common and complex health conditions. They provide a wide range of assessment and treatment interventions, ordering and interpreting diagnostic and laboratory tests, prescribing medicines within their area of competence and admitting and discharging from hospital and other healthcare services/settings.

The proposal is seeking to address problems with the rural medical workforce

There are fewer doctors in most rural areas

16. The University of Waikato and Waikato DHB contend that New Zealand faces a severe shortage of rural medical doctors. This is considered to be due to both the age profile of the current rural health workforce meaning a significant number of existing doctors will retire in the near future, and a lack of new medical graduates seeking employment in rural practice.

17. Nationally, urban areas on average have greater access to general doctors than rural areas. This is evidenced by the 2014 data summarised in the table below, which shows the general practitioner FTE per 100,000 population in the Midland Region DHBs noted in the Waikato proposal compared to DHBs outside the Waikato proposal, and urban areas such as Auckland and Wellington.

DHB	General Doctors per 100,000 population (FTE)
All (New Zealand total)	*76.5*
Lakes	82
Capital and Coast and Hutt Valley	80
Bay of Plenty	76
Auckland, Waitemata and Counties Manukau DHBs combined	70
Tarawhiti	70
Waikato	68
MidCentral	66
West Coast	61
Taranaki	60

There are enough doctors in New Zealand if international medical graduates (IMGs) are taken into account

18. Most OECD countries cap the number of medical students and nearly all have increased their cap since 2000. This has led to an oversupply of doctors in some countries eg Australia and Canada. New Zealand also caps medical students on the first-year equivalent full-time student (EFTS) intake.

19. In New Zealand, the cap has been raised several times in the last few years as part of a policy decision to increase the cap on medical students by 200 EFTS from 365 SAC 3+ funded first year EFTS in 2009 to 565 SAC 3+ funded first year EFTS. This has been implemented as part of the budget process, but in 2015, Auckland and Otago wrote to Ministers asking for a pause in the growth of the cap. The reasons given were capacity issues in providing clinical placements in the final year of study.

20. The medical EFTS cap currently sits at 539 SAC 3+ funded first year EFTS. Auckland and Otago host the two current medical schools and work together to agree the distribution of the cap, which is fully used given applications to study medicine far exceed the number of places.

21. The medical EFTS cap is set based on future forecast need by HWNZ as well as New Zealand's capacity to provide quality clinical training placements for each student undertaking medical study. HWNZ continues to monitor and plan for future health needs and considers

that the planned increase of a further 26 SAC 3+ funded first year EFTS from 539 to 565 will be sufficient to meet the need for new doctors to 2026, assuming continued reliance on a similar number of IMGs.

But reliance on IMGs may not be optimum

22. To mitigate the geographic and specialty maldistribution of the medical workforce, New Zealand imports approximately 1,100 IMGs per year[2]. Most of these IMGs only remain in New Zealand for a short period of time and of each cohort, only around 30% are retained in the medium term.[3] The historic net reliance on IMGs is 300-400 per annum. However, this reliance has declined somewhat recently due to fewer New Zealand medical graduates leaving New Zealand and more returning.

23. All OECD countries are reliant to some extent on IMGs although New Zealand's reliance (43% in 2014) is second-highest in the OECD behind Israel. The OECD average is 17% and Australia's reliance on IMGs is 30%. Care is needed when comparing the proportion of IMGs employed in other countries due to differences in definition. Also, New Zealand is a Member State of the World Health Organisation Voluntary Global Code of Practice on the International Recruitment of Health Personnel and is following best-practice according to these guidelines.

24. The low retention rate of IMGs is influenced by the number of young doctors (<30 years of age) with less than five years-experience who come to New Zealand from America, the United Kingdom and Oceania on short term contracts to meet service needs in hospitals and gain overseas experience.

25. The high turnover of IMGs, can affect the continuity of care, which is particularly important for psychiatry and general practice. In addition, these IMGs may have little understanding of the social and cultural context in which they practice, which can have significant impacts on some patients. Initiatives to support and retain existing IMGs have proven successful in Australia and are likely to be cheaper than further increasing the domestic supply.

26. Importing medical graduates reduces the number of medical students that need to be educated in New Zealand. This means there are fewer opportunities available to New Zealanders to study medicine at an undergraduate level in New Zealand. However, importing senior medical officers assists with the ability to provide high quality specialist training programmes.

27. Questions have been raised about what the appropriate level of reliance on IMGs should be. The Executive Chair of the HWNZ Board has suggested 15-20% might be an appropriate level.

28. The chart below shows the past, current and forecast future number of IMGs and New Zealand medical graduates (NZMG) in the health workforce. Between 2006 and 2013, the number of IMGs employed in New Zealand has risen, levelling off between 2014 and 2016. Reliance on IMGs from 2017 onwards is forecast to level off or slightly reduce with increased numbers of NZMGs meeting New Zealand health needs. This reliance on IMGs is reflected in the decline in the percentage of IMGs contributing to the health workforce since 2014, but will remain high compared with most other OECD countries.

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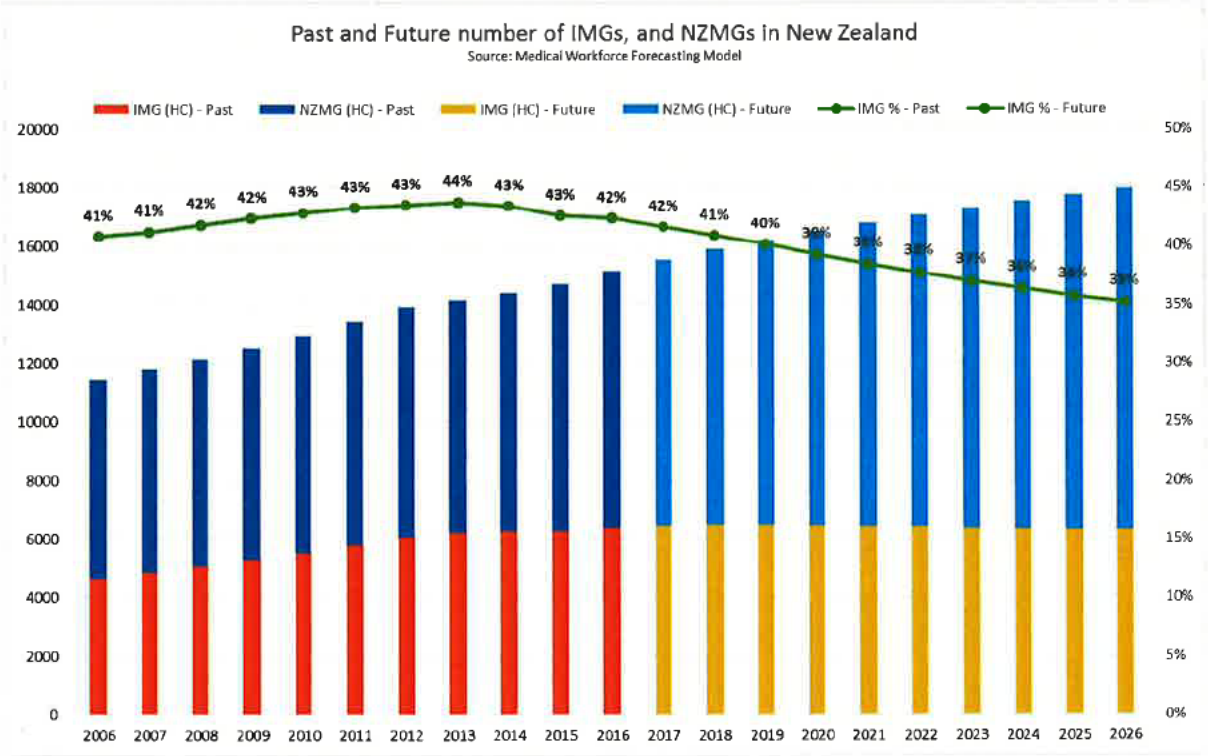
[2] Three distinct groups of IMGs come to New Zealand. Firstly, junior doctors on short term (one to two years) contracts having a working overseas holiday, who help fill a short term service need. This level of service need is reducing with the rise in the number of domestic graduates. Secondly a group of IMGs come to obtain specialist training in New Zealand's high quality training programmes and many of these are retained in New Zealand when they obtain employment as a specialist. Thirdly there are IMGs who obtained their undergraduate and specialist training overseas, or are working in New Zealand as locum generalists.

[3] Medical Council of New Zealand. (2016). *The New Zealand medical workforce in 2013 and 2014.*



29. The Ministry of Health has forecast that the Waikato proposal will have a marginal impact (approximately 3% over ten years) on reducing New Zealand's reliance on IMGs.

Improved retention of doctors will reduce reliance on IMGs

30. The retention of New Zealand graduates is better than IMGs, but 30% are not practicing in New Zealand nine years after graduating and this increases to 40% after 14 years. Improving retention of New Zealand graduates in medical practice will reduce reliance on IMGs.

31. The retention of New Zealand medical graduates is influenced by a wide range of push and pull factors. Historically Australia has been the destination of choice for specialists who decide to leave New Zealand, although the current oversupply of doctors in Australia will reduce the opportunities there which will have flow-on effects on the retention of New Zealand graduates and specialists in New Zealand.

32. Improved terms and conditions as part of recent multi-employer contract agreements for resident and senior medical officers should also improve retention.

Multiple factors make rural careers less appealing to new medical graduates

33. There are a number of factors which contribute to overall low perceptions of a rural career. These include:

- a general lack of support, including cover for training or holidays;
- reduced down-time with doctors in rural practice spending more of their free time 'on call';
- practices are located in remote areas with few facilities, few opportunities for partners and children, and a large amount of travel is required between practices;
- there is anecdotal evidence that the high cost associated with buying into a rural practice is also off-putting, which is compounded in that a lack of interest in vacancies means that it is often hard to sell the practice later; and

- lower intensity than urban practices, which leads to lower salaries for those remunerated on a per patient or per hour basis.

34. The National Health Committee looked at measures that could be introduced to mitigate some of these problems. They included recommendations around service delivery including the use of technology, different models of care including extending the scope of practice for paramedics and nurse-led clinics, establishing outreach clinics or integrated health centres, and provision of transport subsidies.

35. System performance improvements are also being implemented, which include alternative ownership models in primary care, integrating health and other social sector funding schemes, and funding the development of Māori health providers.

Changes in eligibility for funding at Australian universities could also affect the numbers of New Zealanders being able to train as doctors

36. In May 2017, the Australian Government announced its proposal to no longer subsidise fees for New Zealand students choosing to study at Australian universities. If approved, this law change will come into effect in January 2018.

37. These changes could mean that fewer New Zealanders will study medicine in Australia and subsequently return to New Zealand.

The Waikato proposal aims to bring more doctors into the rural health workforce

38. The Waikato proposal aims to encourage more medical graduates to enter rural general practice.

39. The proposal aims to achieve this by enrolling graduate students that are more likely to pursue a rural career and offering an enhanced rural training experience. This is different from the existing medical schools, in which 70% of students are school leavers and clinical placements are mostly based in larger hospitals.

40. In addition to promoting general practice, the Waikato proposal includes a focus on improving teaching of primary mental health care which is consistent with the Mental Health and Addiction Workforce Action Plan. We cannot be certain that this approach would encourage more New Zealanders to train as psychiatrists, although it should help.

There are other potential solutions to address the lack of rural doctors

41. There are other strategies which could address access to services in rural areas, and encourage GPs to enter and remain in rural practices. These are outlined below.

Training more doctors is not the only solution

42. It is important New Zealand does not over-invest in a workforce that may not be needed. Emerging technologies and up-skilling of other professions means that current models of care are likely to change.

43. The positive impact of recent regulatory and legislative changes such as designated prescribing for registered nurses, and the Health Practitioners (Replacement of Statutory References to Medical Practitioners) Bill will begin to improve access, particularly in rural areas in the next few years.

44. Primary Health Care is increasingly delivered in multidisciplinary teams including registered nurses, nurse practitioners, pharmacists, physiotherapists, general practitioners and others. The West Coast DHB has developed a successful model of primary health care with a relatively low number of general doctors but the highest number of primary health care nurses per capita in the country.

45. There is international evidence that nurse practitioners provide an equivalent level and quality of care as general doctors[4,5]. Registered nurses are more likely to live and work in rural areas than doctors and can be trained as nurse practitioners in a shorter time frame and at lower cost than training general doctors. It is noted that there were 77 new nurse practitioners in New Zealand in 2016/17.

46. Virtualisation has had significant impacts on workforces in other industries such as banking and is poised to have a significant effect on health workforces. The West Coast DHB makes good use of telephone and video conferencing technologies to virtually connect health professionals and patients. The Waikato DHB has developed the "SmartHealth" application to virtually connect health professionals and patients.

47. Artificial intelligence is in the early stages of development in medical practice but exponential development in this field holds considerable promise. It is widely believed that these benefits are likely to be realised well before the first Waikato graduates would be working as general practitioners.

It is likely that multiple initiatives are required to address the problem

48. In all OECD countries, the number of doctors per capita tends to be lower in rural areas compared with urban areas. Countries use a range of policies to achieve better geographic distribution of doctors and a mix of policies has been shown to be most effective. This includes targeted selection of medical students from rural areas (e.g. Otago Rural Origins Admissions Pathway), financial incentives (e.g. the Voluntary Bonding Scheme), regulations to restrict doctors from practising in adequately supplied areas, and financial incentives to set up practice in hard-to-staff areas.

49. There are 532 current medical students who come from the Midland region DHBs (Waikato, Bay of Plenty, Lakes, and Tairawhiti). Of these, 350 are studying at the University of Auckland (Auckland) and 182 at the University of Otago (Otago). Potential future employers, and Auckland and Otago working together could do much more to help attract, recruit and retain newly qualified students to practice in these regions.

50. The World Health Organisation has identified a bundle of evidence based initiatives to help attract and retain people in hard-to-staff areas[6]. These initiatives include the targeted student recruitment and enhanced rural clinical training that are features of the Waikato proposal, as well as changes to regulations, financial incentives and initiatives around professional and personal support.

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[4] Horrocks, S., Anderson, E., & Salisbury, C. (2002) Systematic review of whether nurse doctors in primary care can provide equivalent care to doctors. BMJ 324, 819-823.

[5] Kurtzman, E. T., & Barnow, B. S. (2017). A comparison of nurse doctors, physician assistant and primary care physician patterns of practice and quality of care in health centres. *Medical Care, 55*(6), 615-622.

[6] World Health Organisation. (2010) *Increasing access to health workers in remote and rural areas through improved retention: Global policy recommendations*. World Health Organisation Geneva.

Changes to the voluntary bonding scheme are proposed

51. The Voluntary Bonding Scheme (VBS) is a financial incentive strategy targeting new or recent graduates to work in hard to staff areas. The financial incentive is paid in the form of student loan repayments – or paid direct to the person if they have no loan – provided the recipient stays in the hard-to-staff specialty or community for between three and five years. It applies in multiple disciplines including medicine, nurses, midwives, dentists and sonographers. All disciplines on the VBS except sonography have a focus on hard-to-staff rural communities.

52. The VBS was reviewed in 2017. As a result, it has been recommended that the VBS is aligned with a bundle of employer-led and education sector initiatives that provide professional and personal support to the rural health workforce.

The Universities of Auckland and Otago propose establishing a new national School of Rural Health

53. Earlier this year, Auckland and Otago submitted a joint concept document outlining their proposal to create a new national School of Rural Health (SRH). The concept expands on their existing medical school provision and preferential rural admission schemes to include up to 10 new clinician-led, rural delivery training sites that would be co-developed and co-governed by iwi and local communities. This proposal also aims to address student recruitment and improve clinical training experiences to address the maldistribution of qualified doctors, but with lower intensity than the Waikato proposal.

54. This proposal is still under development. Auckland and Otago presented to officials on 30 June 2017, and are now finalising the proposal to present to Ministers, possibly later in July.

55. At this stage, it appears that Otago and Auckland are not seeking capital funding to support their proposal. But they are seeking a SAC rate subsidy (approximately double the current SAC funding rate for medicine) for training in rural settings (whereas the Waikato proposal does not) and approximately $20 million from HWNZ for vocational training in rural settings. While not finalised, this is a lower cost overall than the Waikato proposal in the short term as it does not require capital funding or an establishment subsidy from the Crown.

Benefits of the Waikato proposal

It is likely to encourage more medical graduates to seek a rural career

56. The Waikato proposal offers a new model of medical education for New Zealand, geared specifically for high needs and rural areas. The model focuses on general practice specialisation.

57. The proposed programme of study has already been tested internationally and shown to deliver a higher number of graduates seeking rural employment than other programmes. Flinders University in Australia reports 50-70% of students choosing rural careers after undertaking its graduate entry programmes compared to 18% undertaking its standard programmes.

58. The Waikato proposal aims to encourage up to 50% of medical graduates to enter general practice. Waikato aims to have around 11 of the 60 graduates (18%) working in rural general practice, with many other students pursuing specialties and sub-specialties in short supply,

with the first of these ready to practice in 2029. This is marginally higher than the rate (14%) achieved by Otago Medical School's rural origins and rural immersion programme[7]

The proposed graduate entry model is less expensive than existing graduate entry models

59. The four-year graduate programme is a lower cost option for both students and government compared to existing graduate entry pathways, which are five-year programmes. This means that medical training may become more accessible to a wider number of students. At 2017 funding rates, a four-year graduate programme of study will attract approximately $170,000 in SAC 3+ funding. The five-year programmes offered at Auckland and Otago attract approximately $213,000 in SAC 3+ funding.

60. The Waikato medical programme is expected to drive further demand for undergraduate health sciences provision and therefore the proposal includes a new Bachelor of Health Sciences qualification. It is likely that this could serve as a pipeline to the proposed medical school.

61. For students pursuing this pathway, the cost saving is marginal due to the combined costs of the four-year medical programme and at least a three-year Bachelor's programme.

The Waikato proposal also incorporates other health professions, supporting the development of new models of care

62. The Waikato proposal features the establishment of 12–15 regional clinical training centres, which will feature an inter-professional environment including places for nurses on primary care attachments, midwives, and social workers, as well as pharmacy, physiotherapy and occupational therapy students. However, there is no evidence any of these professions have committed to being involved.

Consideration of how current medical training can be improved has been stimulated

63. The Waikato proposal has put some competitive pressure on the other medical schools, which perhaps in response are re-invigorating their efforts to recruit and train people with an interest in practicing in rural areas. Auckland and Otago have collaborated on a proposal to establish a joint School of Rural Health (paragraphs 53-55) that also seeks to address issues with the rural health workforce.

64. A third medical school could encourage greater diversity in medical education in New Zealand by allowing different methods of medical training to be compared in tandem and provide greater student choice. Otago and Auckland have long been the only providers of medical education in New Zealand, despite previous proposals to establish a medical school at the University of Canterbury and at Victoria University of Wellington.

There is potential for the Waikato proposal to contribute to Government goals around regional and Māori development

65. The Government's Regional Growth Programme (RGP) is a key part of the Business Growth Agenda. The programme is designed to identify economic challenges and opportunities, and help increase jobs, income and investment for New Zealand in the regions.

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[7] Shelker, W., Zaharic, T., Sijnja, B., & Glue, P. (2014). Influence of rural background and rural medical training on postgraduate medical training and location in New Zealand. *NZ Medical Journal, 127*, 12-16

66. In the Waikato region, the Government is supporting Waikato Means Business (WMB), the region's economic development strategy, as part of the Regional Growth Programme. The University of Waikato has actively involved the WMB steering group in its proposal development and the WMB steering group has publicly expressed its support for the proposal - noting that the medical school will contribute to the priorities of the Waikato strategy, which include maintaining and building the Waikato's location advantage, growing global industries, and building, attracting and retaining skills and talent.

67. If established, the medical school would contribute to the Government's RGP aims of increasing jobs, incomes and investment in the Waikato and other regions associated with the proposal. The Waikato proposal identifies the key economic benefits that the medical school would bring to the region, including increased GDP, increased direct and indirect employment, skills and training opportunities, and increased innovation. Increased employment and investment in the region would come not just directly from the medical school itself, but also from opportunities created by the medical school including research into health technologies, the aged care sector, and other development opportunities.

68. The proposal may also contribute to the He Kai Kei Aku Ringa (HKKAR) – Crown-Māori economic growth partnership goals of growing the future Māori workforce, and strengthening the transition from education to work for Māori.

Increased research capacity and delivery

69. Research undertaken at the new medical school has the potential to benefit the DHB, primary care providers, community groups and local iwi, as well as tertiary students. In addition, there is also significant opportunity for research at the new medical school to contribute to the wider aims of government, including the recently launched Health Research Strategy.

70. Additional research will make the University of Waikato more competitive with regard to attracting Performance-Based Research Funding (PBRF) and other government research funding. The University anticipates attracting around $9.5 million in PBRF and other research grants once the new medical school is fully established

71. However, this increased research potential needs to be tempered by the recognition that the proposal explicitly excludes wet labs. Without these facilities the research potential at Waikato will be limited compared to other institutions. It is therefore likely that the University will seek to later expand the facilities to support even greater research capability, at greater cost.

Benefits to the University of Waikato

72. Increased capacity for research will help boost the reputation of the University of Waikato and improve its position in global rankings schemes. This will make the University a more attractive partner for international collaborators and thus further improve its research performance. This is likely to increase its ability to attract higher-profile academic staff, which will boost its attractiveness in the lucrative international student market.

Issues and Risks of the Waikato proposal

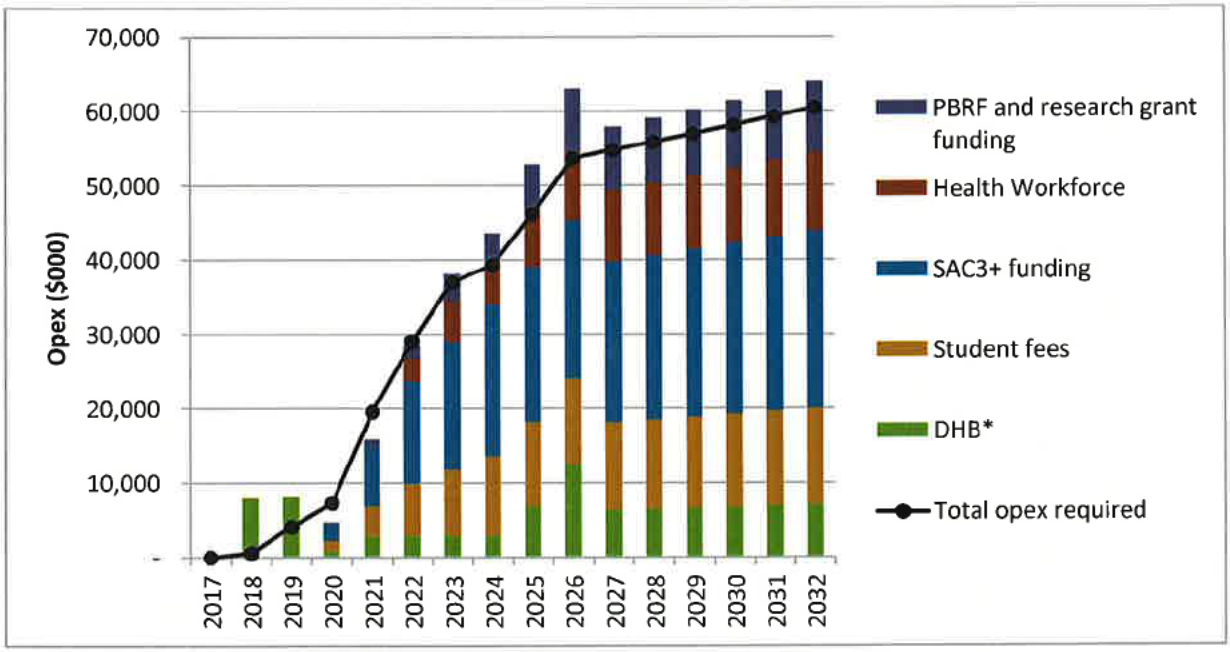
It is costly

73. This proposal estimates that government capital expenditure of $111.7 million will be required for the establishment of the medical school. This includes new facilities based at Waikato Hospital in Hamilton, the set-up and furnishing of 12-15 regional clinical training centres, and costs associated with developing and implementing the curriculum. This initial capital expenditure is summarised in the table below.

Capex	Total 2017-2026 ($ million)
Medical school facilities	$70.0
Regional clinical training centres	$40.0
Programme/curriculum development	$21.7
Total capex sought from government*	**$111.7**

*excludes $20 million philanthropic private capital contribution

74. The medical school is expected to reach full capacity, including the delivery of additional vocational and specialist training by 2032. We have estimated the required operational expenditure per annum from government sources at this point is around $75 million, including SAC-funding for students, HWNZ and DHB funding for postgraduate training, and research revenue. Additionally approximately $13 million will be obtained through student fees. The operational costs will build up over time as the number of students in the pipeline increases, which is shown in the graph below.



*note extent of Waikato DHB funding past 2026 is unknown and so has not been included in estimated revenue stream

75. Only the SAC funding required may be affordable and this is dependent on non-university sectors continuing to decline resulting in unallocated SAC funding that can be re-distributed into medical EFTS.

76. HWNZ would also require additional funding not included in the business case for the vocational training of graduates. The total amount of HWNZ funding for vocational training years would depend on the graduate's choice of vocational training, but is likely to be around $24 million per annum, bringing total HWNZ funding to around $35 million per annum.

77. In addition, a subsidy would be required to enable staff to be employed and the programme of study made ready before the students enrol. The Waikato proposal estimates that establishment funding costs will be $101.6 million to 2020, including $4.1 million operating costs before the first student intake.

There is potential for costs to government to increase

78. If any of the funding sources are unable to deliver once establishment of the medical school is underway, or costs escalate, government may be asked to provide further funding. In addition there is significant potential for the scope of the project to 'creep' particularly in relation to facilities (e.g. the introduction of unplanned wet labs) or through expanding facilities to accommodate a greater number of students than initially envisaged.

79. The business case assumes Waikato DHB will contribute $15 million in capital towards the medical school facilities. If this case progresses the DHB would need to seek separate approvals through Ministry of Health capital processes (eg Capital Investment Committee). Those processes would examine how the proposed investment in the medical school facility should be prioritised against projects such as the redevelopment of their mental health inpatient unit.

80. An important concern with the proposal is Waikato DHB's ability to focus on this work when it has a number of issues to deal with, including its financial performance, updating core IT systems, regional leadership, relationships with Midland Health Network and performance on the 'Shorter Stays in Emergency Department' Health Target.

Little detail is provided to illustrate how the school will better meet the needs of Māori

81. The business case presents an opportunity to build a new medical school in partnership with Māori. However, the nature of the partnership model is not clear from the proposal. If the Waikato proposal goes ahead, this area will require further development, including consultation with Te Ora (the Māori Medical Association).

82. In addition, little detail is provided of the steps that will be taken to ensure recruitment of Māori students and maintaining them in the programme. Costs of cultural support are not included in the budget and recruitment of Māori students is not identified in the risk or mitigations. This is important because the strongest evidence related to inequities in health outcomes between rural and urban populations is that rural Māori have slightly shorter life expectancy than urban Māori.

83. The Auckland and Otago medical schools have had considerable success in attracting Māori into medical school and have in recent years achieved equity in regards to the proportion of Maori medical students reflecting the proportion of Māori in the population.

It is not clear that the Waikato proposal will lead to significantly more medical graduates choosing rural practice

84. Although the Waikato proposal is based on strategies that have shown success overseas, it is not clear how many Waikato medical graduates would enter rural practice or, how long they would be retained in the rural health workforce.

85. The Waikato proposal's stated aim is that 50% of graduates from the new medical school will pursue general practice in areas outside of the main centres. However, in general discussion, it was noted that only around 18% (11 students) would be expected to pursue rural general practice.

The health benefits of increasing primary care physician supply may be overstated

86. The proposal cites evidence that rural areas of New Zealand, including those in the Waikato DHB region, have poorer health than urban areas.[8] Whilst there are many socioeconomic factors that contribute to this, reduced access to medical care is a factor that needs to be taken into account in considering the poorer health outcomes of rural communities.

87. Studies from the USA indicate that primary care supply has been associated with improved health outcomes including for all-cause mortality, cancer, heart disease, stroke and infant mortality, low birth weight, life expectancy and that self-rated health is also improved. [Analysis of pooled studies indicated that the relationship held between 1980-1995[9] regardless of the year, granularity of region (state, county, city etc)].

88. The studies analysed showed a slight decrease in magnitude of benefit as the supply of primary care physicians increased over the 1990s, indicating that there is no guarantee that the relationship between primary care physician supply and health is linear. However, it is noted that the peak primary care supply in this is similar to the current supply in the Midland Region DHBs.

89. It is also noted that the studies reviewed did not examine or control for the impact of other health professionals in primary practice, or other policy interventions. Therefore, simply increasing the number of new graduate doctors entering rural practice may not deliver the system benefits that are needed, especially if these graduates do not have the cultural and contextual competencies required by the communities that they serve.

A third medical school may impact on clinical placements for students at Auckland and Otago

90. Auckland and Otago have noted that the establishment of a third medical school will potentially reduce their ability to ensure that all students have access to clinical placements.

91. The Waikato proposal indicates that the establishment of regional clinical training centres will provide additional training placements for medical students. However, there are still likely to be some placements required (particularly at hospital level) which are currently used by the Auckland and Otago medical schools.

92. It is noted that Waikato DHB has already informed the Auckland medical school that if the Waikato proposal is successful, it will look to reduce the number of Auckland students undertaking clinical placements in its hospitals. However, it is possible that DHBs could work with the universities to create additional clinical places.

Medical training is more costly than employing IMGs

93. Although there is a significant cost associated with recruiting IMGs, it remains far less than the cost of training doctors. The proposal estimates costs of recruiting and relocating IMGs are approximately $56,000 per person and that IMGs earn an average of $20,000 more per annum than New Zealand medical graduates.

94. At current funding rates, the government pays approximately $227,000 in SAC 3+ funding for medical undergraduates. This excludes costs associated with final intern year stipends and additional postgraduate and specialist training.

95. In addition, it is noted that the Waikato proposal for 60 students per year may be at the lower end of what is economically viable for a medical school. In Western Europe, the average

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[8] National Health Committee. (2010). *Rural health: Challenges of distance; opportunities for innovation.* Wellington: NHC

[9] Macinko J, Starfield B, Shi L. Quantifying the health benefits of primary care physician supply in the United States. International Journal of Health Services. 2007;37(1):111–126.

intake of 282 medical schools is 150 students per year. In North America, the average intake of graduate entry medical school programmes is 110 students per year.

Options and next steps

We recommend discussing the proposal with your Ministerial colleagues

96. As well as the Waikato proposal initiatives to encourage more medical school graduates to seek a rural career, there are other initiatives and interventions which may impact on the rural health workforce.

97. These include improving the appeal of rural practice by improving working conditions and remuneration, reducing reliance on doctors through greater use of allied-health professions and technology, and making changes to existing initiatives such as the VBS. These initiatives undoubtedly warrant further investigation and consideration.

98. Although it is likely that the best solution will require a combination of initiatives, you need to discuss the Waikato proposal and determine what the next steps will be. Some initial options are presented below.

Option One: Support the proposal in principle, and set aside the funding

(This option is not supported by the Treasury or Ministry of Health).

99. If Ministers decide to fully support the Waikato proposal, the University of Waikato/Waikato DHB will need to provide a Detailed Business Case that meets the Treasury's Better Business Case guidelines. The TEC would work with other agencies to draft your request and review the updated business case once it is submitted. If this is your chosen course of action, we would also recommend that an Independent Quality Assurance (IQA) is procured by the University of Waikato/Waikato DHB.

100. However, there are disadvantages in selecting this option. Although Ministers still have the option not to proceed with the project at any of the later stage gates in the Better Business Case process, it would be hard to do this as the commitment would have been seen to be made. In addition both Waikato University and the DHB would incur additional costs throughout the Better Business Case process.

101. One of the advantages of the Waikato proposal is that it has stimulated discussion and review of existing medical training, which may lead to a better value proposition from the existing medical schools. Agreeing to fund the Waikato proposal at this stage would remove this competitive pressure.

Option Two: Support in principle

(This option is not supported by the Treasury or Ministry of Health).

102. Ministers could determine that although there is support for the proposal in principle, they still require additional information in order to determine whether it should receive government funding.

103. As with option one, the University of Waikato/Waikato DHB would need to provide a Detailed Business Case that meets the Treasury's guidelines. The TEC would work with other agencies to draft your request and review the updated business case once it is submitted. If this is your chosen course of action, we would again recommend that an IQA is procured by the University of Waikato/Waikato DHB.

104. Although you can decide not to proceed once you receive the Detailed Business Case, Waikato and the DHB would still have to continue to commit resources to the project, without any certainty.

105. However, it would keep the proposal "in the market" for longer and encourage further competitive innovation by the other players.

Option three: Defer a decision and use a contestable process to seek expressions of interest

106. If Ministers consider the proposal interesting, but are not prepared to fund it at this time, you could agree a timeline for revisiting the proposal. For example, you could agree to reconsider the proposal in two-years, once the effect of other initiatives already underway to address rural health issues can be reviewed by the Ministry of Health eg the voluntary bonding scheme, new technology, other support for rural practitioners.

107. It is recommended that any timeline for revisiting the proposal is kept relatively short so as to maintain competitive pressure and maintain stakeholder engagement.

108. Should Ministers want to establish a new medical school, this option would allow consideration of using a competitive tender process. This may result in a wider range of options and potentially less costly options being proposed. Also seeking solutions from a variety of organisations rather than a single institution would prompt better cooperation and allow a New Zealand-wide solution to be developed. This is a similar process to that recently used for the establishment of new Centres for Research Excellence (CoREs), and for the ICT Graduate Schools.

109. If this is the chosen course of action, the TEC will work with other agencies to draft a letter to notify the University Waikato, Waikato DHB, and other interested parties of your decision.

Option four: Decline to support the proposal

110. If Ministers are not prepared to support and fund the proposal, the TEC will work with your office and other agencies to inform the University Waikato and Waikato DHB.

111. This option has the advantage of saving costs, but would remove the competitive pressure from other providers and would not likely be well received by stakeholders.

Summary of option analysis

112. The risks and benefits of these options are summarised in the table below. Each option has been assessed against the cost to government, effectiveness in addressing the maldistribution of doctors, the advantages of competitive pressure on other medical schools, the ability to significantly improve rural health outcomes and the stakeholder reaction.

Option	Cost	Ability to address mal-distribution	Competitive pressure	Change in rural health outcomes	Stakeholder reaction		
					Waikato / DHB	Auckland and Otago	Other*
1	High	Possible	Medium	Low	Positive	Negative	Positive
2	Likely high	Possible	Medium	Low	Positive	Negative	Positive
3	Medium	Possible	High	Possible	Negative	Medium	Medium
4	Low	None	None	None	Negative	Positive	Negative

*existing health workforce, local development agencies etc

113. There may well be more effective, and lower cost options than this proposal for addressing rural health issues. Deferring a decision will also allow time for the effect of other initiatives and technologies to be evaluated.

Consultation

114. The Tertiary Education Commission, the Treasury, and the Ministry of Health have prepared this as a joint briefing paper. The Ministries of Education and Business, Innovation and Employment have been consulted and their comments incorporated. The Department of the Prime Minister and Cabinet, has been informed.

Treasury comment

115. The Treasury's view is that the Waikato proposal relies on a weak problem definition. There is insufficient evidence to conclude that New Zealand has a shortage of General Practitioners (GPs) but there are regional variations in GP distribution that may create higher barriers to access in some areas of the country including Waikato. However, the number of GPs is a simplistic measure and the focus should be on achieving broader health and social outcomes in the most cost effective manner.

116. For the size of the investment, the marginal change in the number of GPs taking up rural practice is unlikely to improve outcomes for high needs and vulnerable individuals and families/whānau. It is expensive and does not address retention issues. A new medical school was not highlighted as a priority in the New Zealand Health Strategy signed off last year following extensive consultation with the health sector.

117. We acknowledge that current providers do not compete, and we see their incentives as being to lengthen the term of training as much as possible (to maximise funding) and to keep the quality high (as this leads to research which bolsters their rankings). But it is not clear that the Waikato medical school proposal would introduce meaningful competition into medical training. Every medical school will have guaranteed EFTS and students, undermining contestability between them. To create competition, the government would need to be willing to move some EFTS between the providers and this could be done with either two or three providers.

118. Rather than competition itself we think broader health outcomes should be the metric of value by which we assess the desirability of changes to the institutional landscape. Ideally, we want medical training providers to respond to student demand and health workforce priorities. If there is a market failure in how medical training is meeting rural health workforce needs, then given current policy settings, government can signal where it wants changes through volume and price settings. In response, current providers will adapt their behaviour and others will seek to enter the market. The Auckland and Otago proposal arguably proves this point. Their proposal is premised on the notion that government will pay a premium for medical training that improves the rural health workforce.

119. Therefore we think the government should send a clear signal of the changes it is seeking, and rather than develop potential solutions in isolation, it should develop a national strategy for the future health workforce. This would analyse all the alternatives including the Waikato proposal, strengthening existing arrangements, new models of care and potential roles for other health professionals, use of technology, the Auckland/Otago proposal as well as others that might come from the market.

120. We recommend the decision be deferred (option 3), and that officials be directed to undertake this wider strategic work in the first instance.

Ministry of Health comment

121. There is insufficient evidence to conclude that New Zealand needs to train an additional 60 doctors per annum in the medium term or that there is a shortage of general practitioners. There are variations in the distribution of general practitioners and other health workers that may be creating barriers to access in some rural areas of the country including but not limited to the Waikato region. The proposal is high cost for the marginal change in the number of rural general practitioners which is unlikely to improve outcomes for high needs and vulnerable individuals and families/whanau in the short, medium, or long term. In addition the cost of graduate entry programmes is more expensive than direct entry training.

122. The focus should be on achieving broader health and social outcomes for high needs rural communities in the most cost effective manner. A wider range of alternatives need to be analysed. These include better use of existing workforces such as nurses, nurse practitioners and pharmacists, use of technology and new models of care.

123. The Ministry is preparing separate advice to the Minister of Health about the opportunities and risk associated with the IMG workforce.

124. The Ministry does not support this proposal proceeding at this time.

Ministry of Business Innovation and Employment comment

125. The business case does not consider the research function of the medical school. Universities are the main providers of health research in New Zealand and the Waikato proposal would have effects on the health research system. Alongside teaching, Universities have a critical role in performing research and transferring knowledge to industry and community groups.

126. The recently released health research strategy highlights that health services research and evaluation of health interventions is weak in New Zealand. It also highlights the need for tighter collaboration between tertiary education and the health sector on research to ensure effective translation of knowledge and improved health outcomes. The March 2017 MoU between the University of Waikato and Waikato DHB focuses on teaching and research. It lays a solid foundation for research to be more demand-led and more responsive to the needs of local populations. MBIE therefore considers the proposal could lead to some positive effects on the health research system. It may also spur the existing medical schools to work more closely with the health sector on their research agendas. MBIE notes there is a significant degree of competition between universities as most health research funding is allocated through open contest.

127. MBIE concurs with the Treasury and the Ministry of Health that further consideration is needed on how to improve health outcomes. However, MBIE notes that there is a lack of evidence on cost-effective interventions in New Zealand and poor uptake of the evidence that does exist. Improving health outcomes is not solely about improving access to care. The Waikato proposal could lead to an increased evidence base on service delivery and public health interventions which would be of benefit to the Waikato region and beyond. The evidence base is likely to be particularly important for Māori health outcomes given the proposed engagement with Māori.

128. Finally, MBIE notes that international evidence shows that universities have a long-term positive effect on economic growth in the area where a university is located. The Waikato proposal could contribute to the government's regional economic development goals over the long term.

129. MBIE considers there is merit in further considering the proposal.

Conclusion

130. The Waikato proposal is an interesting and novel way to train doctors in New Zealand. It is based on a four-year graduate training model that has been shown to work overseas and is likely to deliver more graduates seeking a rural career, even if only marginally. In addition, the four-year graduate programme is less costly to students and government than the current graduate training pathways at Auckland and Otago.

131. There are also a number of regional economic benefits that the proposal will bring to the Midland region through the establishment of regional clinical training centres that incorporate training for other allied-health professions.

132. But, the proposal is high cost and it is not certain that it will significantly change the distribution of the health workforce to benefit rural communities.

133. There are other initiatives and interventions that may prove to be more cost effective and better at addressing these issues.

Appendix 1 – Summary of the Proposal

Appendix 2 – Background Information about the University of Waikato

Appendix 3 – Draft covering letter to send to other Ministers

Rt Hon Bill English
Prime Minister
PARLIAMENT BUILDINGS

Dear Prime Minister

University of Waikato and Waikato DHB proposal to establish a third medical school

I attach the latest joint briefing from the Tertiary Education Commission, Ministry of Health and the Treasury regarding the University of Waikato and Waikato DHB joint proposal (the Waikato proposal) to establish New Zealand's third medical school. This briefing takes account of the updated business case provided to government on 31 May 2017 and incorporates comment from the Treasury, the Minister of Health and other interested agencies.

I look forward to discussing the options for progressing the consideration of this proposal, and the broader issues of the rural health workforce with you.

Yours sincerely

Paul Goldsmith
Minister for Tertiary Education, Skills and Employment