

Medical education in New Zealand

Current state and consideration of future options

University of Auckland and University of Otago
Final report

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Medical education in New Zealand: current state and consideration of future options

Dear Warwick and Megan,

We are pleased to provide our 'Medical education in New Zealand: current state and consideration of future options' report.

This report has been prepared in accordance with our Letter of Engagement dated 3 April 2024, and is subject to the restrictions described in Appendix A of this report.

Thank you again for the opportunity to support this important mahi.

Yours sincerely,

PwC New Zealand

Contents of this report

This report is comprised of four key sections.

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Summary of key insights (1 of 2)

The University of Auckland (UoA) and University of Otago (UoO) have drawn together an overview of New Zealand's current medical education system and assessment of future options to address the problems the system faces. This is designed to inform Manatū Hauora Ministry of Health's (MoH) programme of work on the proposed establishment of a third medical school at the University of Waikato (UoW).

Current state of medical education in New Zealand

The summary of the current state of medical education in New Zealand has highlighted:

- **The medical education system is not currently training enough, or the desired representation of, doctors in New Zealand.** The key drivers of this problem are the current government funding cap - which places a limit on the number of students who can attend medical school - and constraints on placement capacity.
- **There is not consensus on the number, or type, of new doctors required to address the challenges with New Zealand's health workforce,** and the associated requirements of medical education to enable this. Further assessment of need is required to support a strategic, system-level response to the shortage of doctors.
- **Existing UoA and UoO teaching centres and associated facilities provide extensive coverage across New Zealand.** This includes key campuses and teaching facilities located in Auckland, Hamilton (UoA), Dunedin, Wellington and Christchurch (UoO). Outside of Auckland and Dunedin, Wellington and Christchurch are the largest campuses. There is also a large number of smaller teaching facilities across the country including Whangārei, Tauranga, Rotorua, New Plymouth (UoA) and Invercargill (UoO). Alongside this, regional placements and regional-rural programmes are in place throughout New Zealand (for example, in Tairāwhiti, Taranua, Ashburton and Alexandra). This coverage means UoA and UoO are well positioned to expand existing sites in a way that will continue to provide extensive coverage across New Zealand.
- **UoA and UoO currently offer a diverse range of entry pathways,** including undergraduate, graduate and alternative (including allied health professionals) entry. This is further supported by admission schemes focused on Māori, Pacific and rural communities.

Consideration of future options - key findings

The UoW third medical school proposal (UoW proposal) has been designed to increase medical education capacity. However this could also be achieved, more cost-effectively, through options delivered by UoA and UoO. Through the analysis of the option set - including the UoW proposal and a set of practical alternative options - the following key findings emerged:

- **UoA and UoO can increase capacity in medical education more quickly than the UoW proposal.** UoA and UoO have the ability to lift intake by 100 places in 2026 and an additional 200 places starting in 2027. By comparison, the UoW proposal will not see capacity increase until the start of 2027 at the earliest. The details of UoA's and UoO's existing capacity are:
 - 2025 will see a small increase in student intake (15 at UoA, 10 at UoO), reflecting recent Government decisions to make small increases to the funding cap.
 - For the start of 2026, if the Government were to make more substantive increases to the funding cap, capacity could be increased by a total of 100 students taking total national intake from 589 to 689.
 - From 2027 onwards, capacity could then be increased incrementally by up to a further 200 students, increasing total national intake to 889.
- **UoA and UoO are able to increase capacity in medical education at lower cost than the UoW proposal.** UoA and UoO do not require new capital funding from the Government to increase capacity (to the 889 total described above). To accommodate new students, UoA and UoO would largely reconfigure the use of existing facilities, and if any minor capital expenditure was required this would be reprioritised from existing budgets.
- **UoA and UoO-led capacity increases carry less implementation complexity and risk,** due to the ability to leverage existing resources, capability and facilities. By comparison, the UoW proposal carries significantly more implementation risks including those associated with gaining accreditation, recruiting faculty and developing new facilities.

Summary of key insights (2 of 2)

Consideration of future options - key findings (cont.)

- **UoA and/or UoO could establish a four-year graduate entry programme to run alongside existing programmes**, and would be able to implement this in a comparatively efficient and low cost way due to the ability to leverage existing capability and facilities.
- **UoA could provide an expanded offering in Hamilton, either through expanding its existing programme or establishing a new four-year graduate entry programme.** This would be faster and lower cost to implement than the UoW proposal, due to the ability to leverage UoA's existing facilities in Hamilton.

Broader medical education and health system insights

The analysis also identified a set of health system level insights important for considering both the different options and broader changes to medical education in New Zealand, in particular:

- **Placement capacity is a key constraint on medical education capacity, and will not be addressed through a focus on university-based solutions.** Placement capacity (and the availability of postgraduate supervisors) is a key constraint on growth of the medical education system, and needs to be addressed in parallel to increasing the capacity of campus-based medical education.
- **There is no additional rural placement capacity available.** UoA and UoO currently place students at all rural hospitals and rural GPs that have capacity to accept placements. The UoW proposal will therefore displace the existing rural placement capacity, and may result in a lower than estimated net increase in the total number of rurally trained doctors.

- **The retention of doctors in New Zealand post-qualification is a significant challenge for the health workforce, and cannot be solved by the medical education system alone.** In the last 10 years, 29% of New Zealand medical school graduates have moved overseas. This highlights the challenge of retention post-qualification, and the role improved retention plans in addressing the shortage of doctors.
- **Planned, systematic and incremental growth in the numbers of medical students is better than rapid expansion**, due to the constrained ability of the health system to support this growth (for example, through placements). This approach to growth at UoA and UoO has been constrained by successive governments making only minor and sporadic increases to the funding cap over time.
- **A focus on diversification of providers appears to contradict an emerging conclusion of the University Advisory Group's review (i.e. the Gluckman review)** that it would be preferable for universities to specialise in certain areas, rather than for all universities to offer all courses.

The remainder of this report provides further detail of UoA's and UoO's work, to support MoH's assessment of future options for medical education in New Zealand. The information in this report is based on UoA and UoO's current understanding of medical education in New Zealand. PwC has helped collate, organise and assess this information for the purpose of supporting MoH's process.

1

Purpose and scope

Context and purpose

To provide input into MoH's programme of work on the establishment of a third medical school in Hamilton, UoA and UoO have drawn together summary information on existing medical education as well as an assessment of future options.

Context

The coalition Government (the Government) has indicated its intention to undertake a programme of work to possibly establish a third medical school at UoW (the UoW proposal). The Coalition Agreement between the National Party and ACT Party states a "Full cost-benefit analysis must be presented before any binding agreement is made with respect to the Waikato medical school".

In July 2023, MoH released the Health Workforce Plan 2023/24 (the Plan), designed to improve the health of New Zealanders through making improvements in the health system to create a strong and well-supported health workforce. Subsequently, the Government has indicated it will prioritise addressing the challenges within the health workforce, with an initial focus on addressing the shortage of doctors.

In particular, the Government has established that New Zealand does not currently train enough doctors to meet the demands of New Zealand's growing and ageing population, particularly in rural and provincial areas and in primary and community care settings. As a result, there is increased focus by the Government on the medical education and training capacity required to address the shortage of doctors and, in doing so, improve health workforce outcomes (including the availability, accessibility, responsiveness, productivity and quality of this workforce).

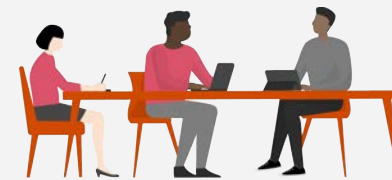
A Memorandum of Understanding (MoU) between MoH and UoW for a third medical school was signed on 13 February 2024. This was one of the priorities identified in the Government's 100 day plan. The rationale for a third medical school is focused on addressing health workforce challenges - in particular not training enough doctors in rural and provincial areas and primary and community care. The purpose of this MoU is to agree to the programme of work on the third medical school, designed to enable advice to be provided to MoH and to inform Cabinet decisions. An initial focus is on working through a full business case process, including a cost-benefit analysis (CBA).

Purpose

As part of this process, MoH is seeking UoA's and UoO's engagement and input. As long standing providers of medical education in New Zealand, UoA and UoO continually review and adapt their programmes to ensure medical education remains responsive to the evolving needs of New Zealand's health system and community.

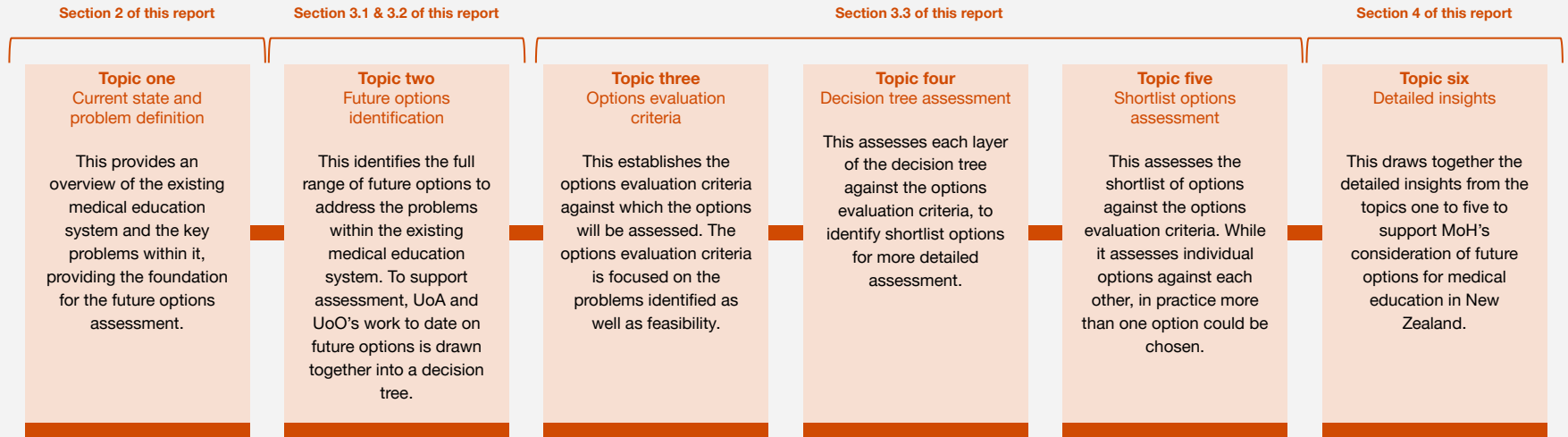
In response to MoH's request for engagement and input, UoA and UoO have drawn together an overview of New Zealand's current medical education system as well as an assessment of future options to address the challenges the system faces. To align with MoH's process, this is focused on university-based medical education in New Zealand rather than wider-health workforce and system challenges.

This report provides a summary of UoA's and UoO's work, including key insights to support MoH's assessment of future options for medical education in New Zealand. The information in this report is based on UoA and UoO's current understanding of medical education in New Zealand. PwC has helped collate, organise and assess this information for the purpose of supporting MoH's process.



Scope

UoA's and UoO's summary of medical education in New Zealand and assessment of future options is focused on six key topics.



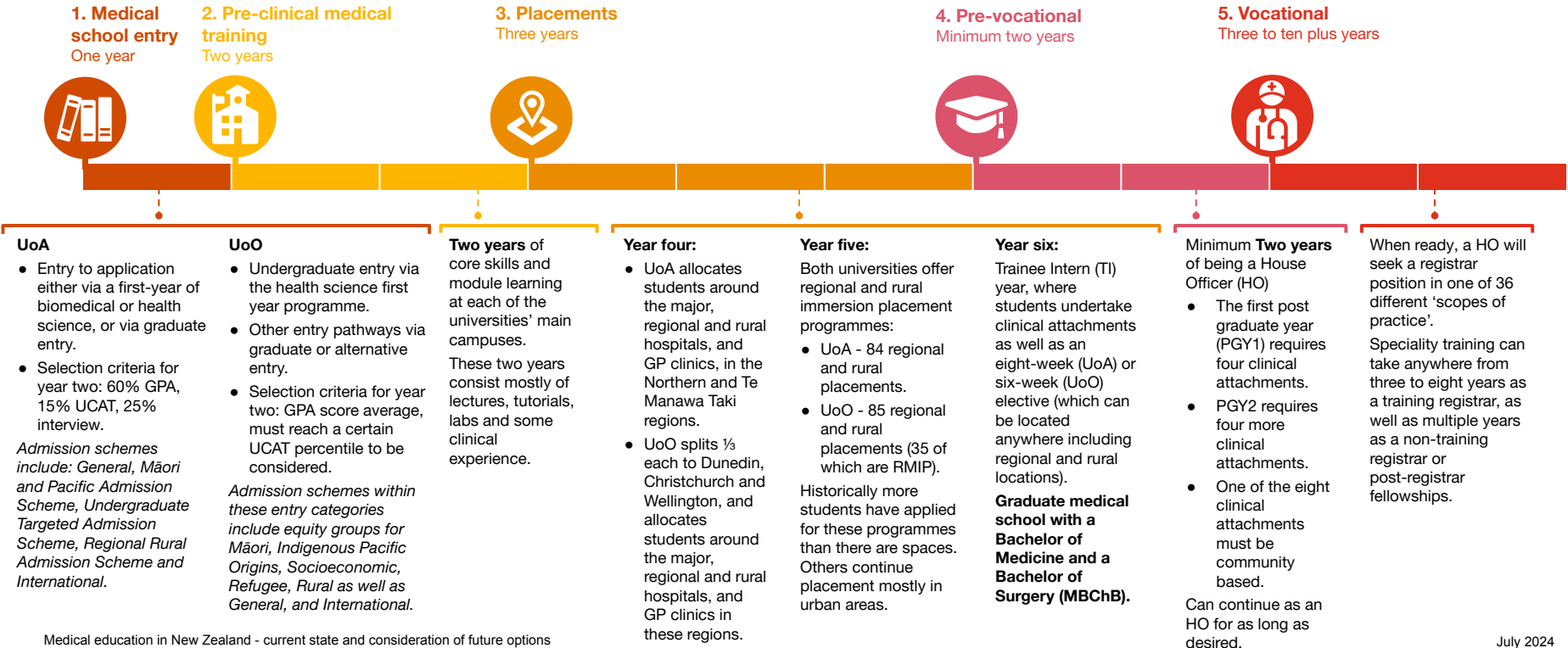
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Current state of
medical education in
New Zealand

Current medical programmes in New Zealand

The medical school phase of becoming a doctor involves six years in total, including one general sciences learning year or a prior degree, two medical specific education years and three years largely of learning in a placement environment.

The timeline below sets out the current training requirements (at UoA and UoO) for a medical professional in New Zealand.

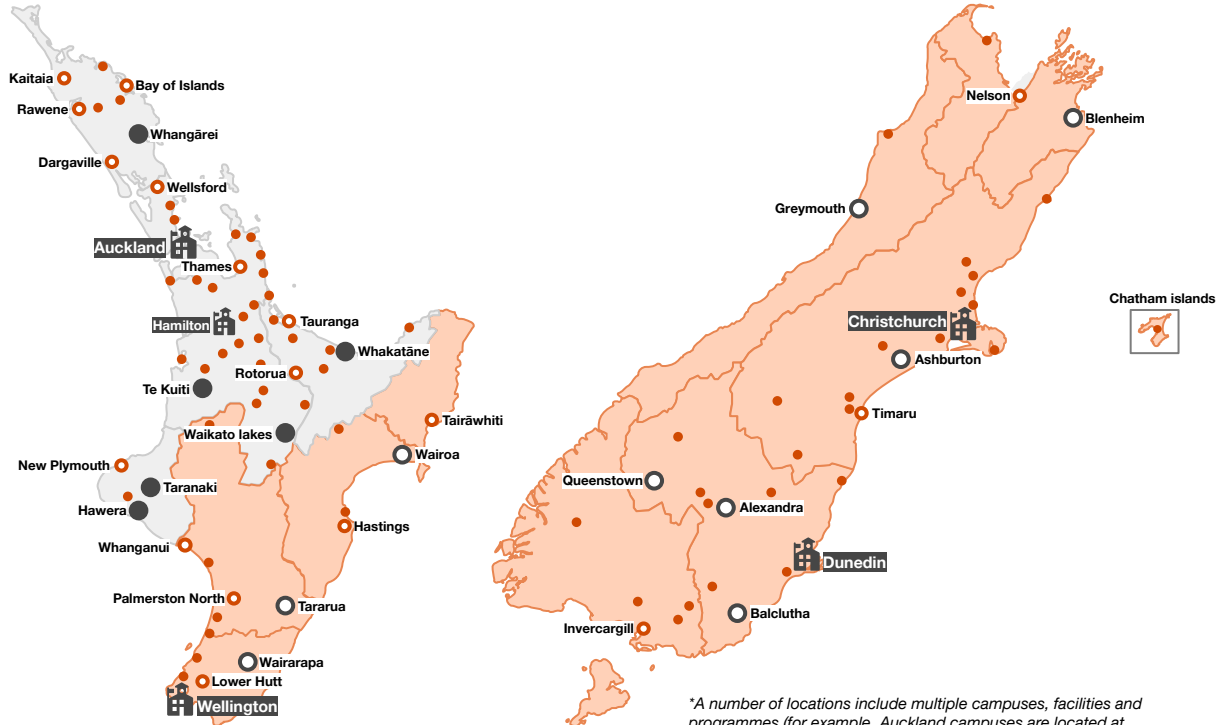


New Zealand's current medical schools

New Zealand currently has two medical schools, UoA and UoO, which provide extensive coverage across New Zealand.

- Key campuses and teaching facilities are located in Auckland, Hamilton, (UoA), Dunedin, Wellington and Christchurch (UoO).
- Outside of Auckland and Dunedin, Wellington and Christchurch are the largest campuses - with an annual intake of just under 200 students as well as significant research hubs.
- There is a large number of smaller teaching facilities across the country including Whangārei, Tauranga, Rotorua, New Plymouth (UoA) and Invercargill (UoO).
- Specific programmes alongside a large number of placements provide significant regional-rural coverage across New Zealand. This includes placements at all rural hospitals and rural GPs across New Zealand that have capacity to take placements.

Map showing current UoA and UoO coverage across New Zealand*



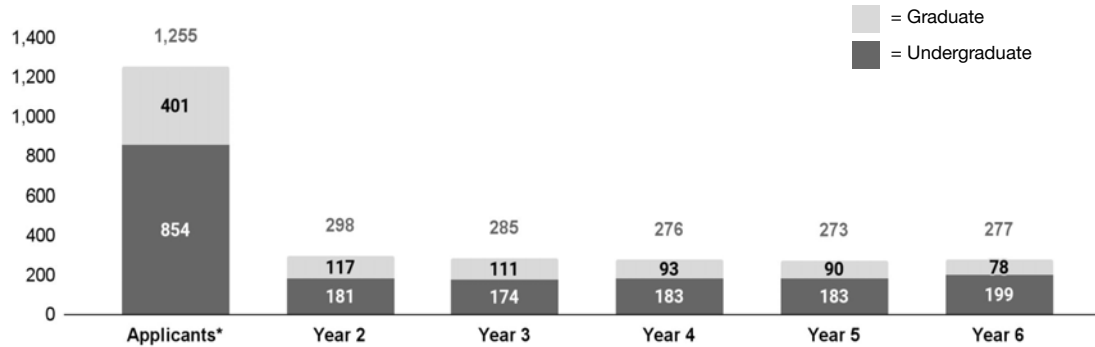
- = UoA clinical placement areas
- = UoO clinical placement areas
- 🏠 = Each universities' teaching centres
- = Regional and/or rural placement sites (incl. future sites)
- = RMIP (UoO)
- = Regional-rural programmes (UoA (incl. future sites))
- = Additional student placement locations (UoA and UoO)

*A number of locations include multiple campuses, facilities and programmes (for example, Auckland campuses are located at Waitemata, Grafton and Middlemore hospitals)

Number of UoA and UoO medical students

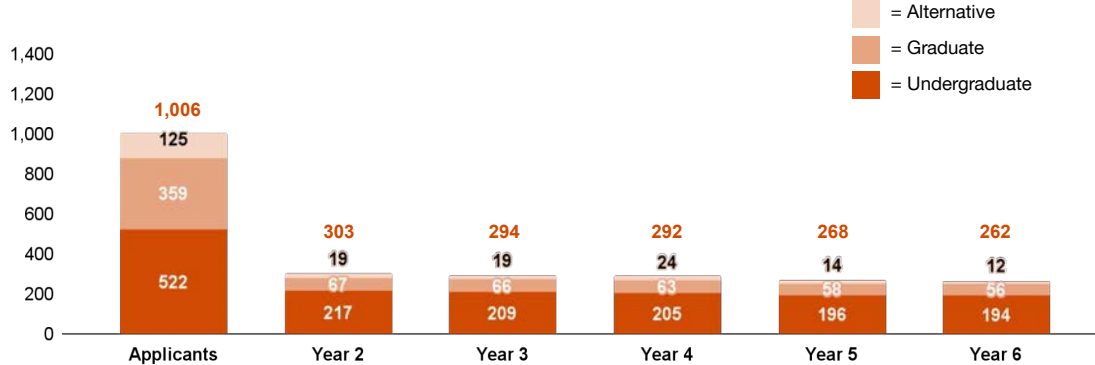
The capacity of UoA and UoO is subject to current government funding cap - which places a limit on the number of students who can attend medical school. The charts below provide an overview of the number of applicants and medical students by year for UoA and UoO, based on five-year averages.

UoA number of students at each year level (2020-2024 average)

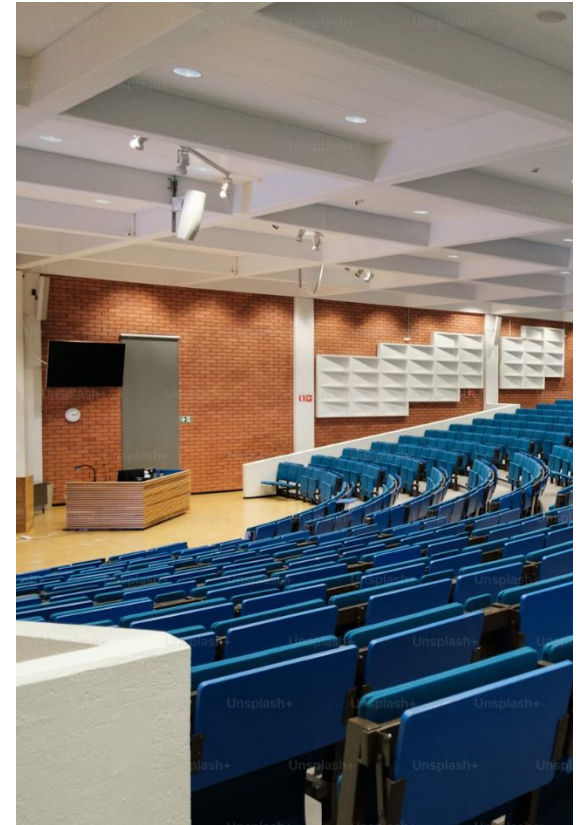


*UoA applicant numbers represent 2024 only

UoO number of students at each year level (2020-2024 average)



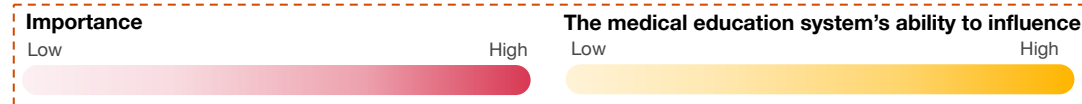
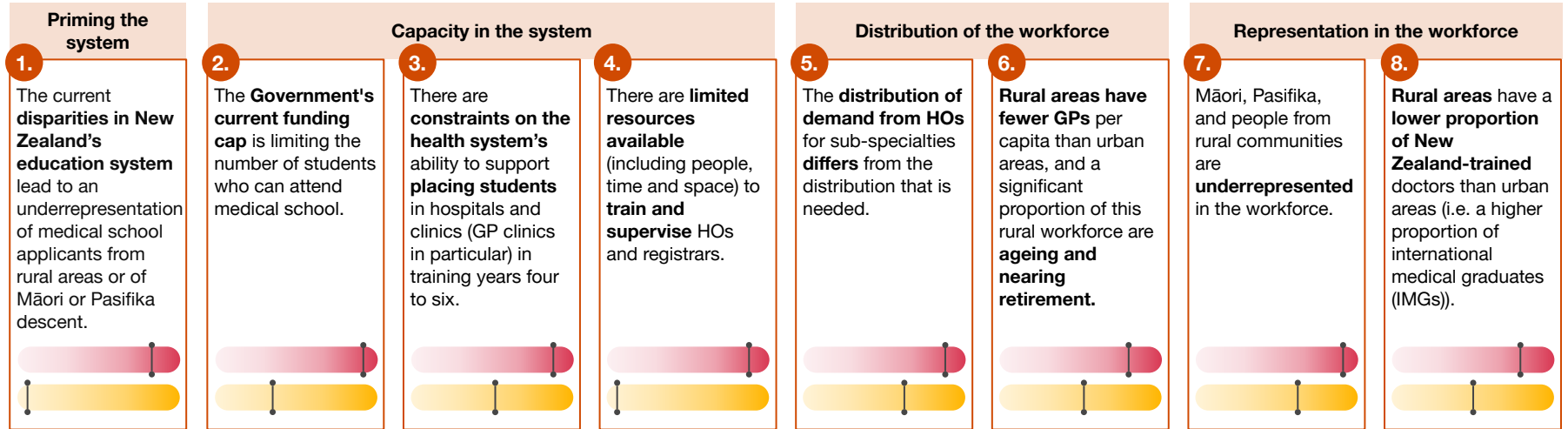
*Note on the charts: the changes in student numbers from year two to six is not student attrition. The numbers are based on a five-year average for each year, and therefore variation by year is a result of variation in the Government's funding cap at a given point in time.



Summary of key problem statements

All current problem statements stem from the overarching issues that New Zealand is not training enough doctors, and the representation of the workforce is not reflective of the community.

Scope/overarching problem: New Zealand is not training enough*, and the desired representation** of, doctors

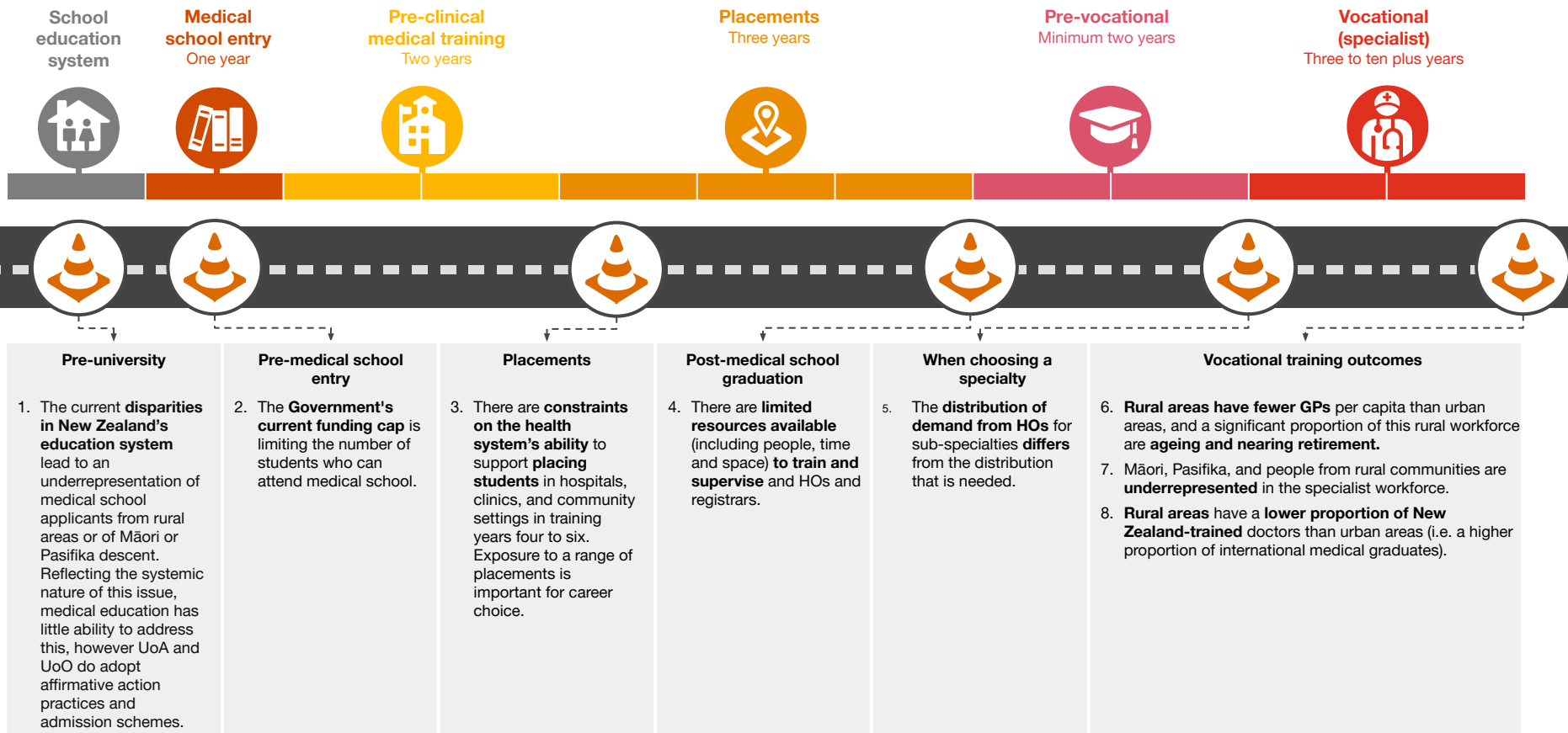


*Te Whatu Ora has set out that New Zealand needs to be training **285** additional medical graduates annually

**A workforce that is reflective of the New Zealand community

Problem statements mapped to medical education training timeline

These problems occur at many stages throughout the medical education and training journey.



Detailed problem statements (1 of 2)

The first problem occurs as a result of the disparities that are prevalent in New Zealand's education system, and the following three detail the limited capacity within the health system.

Priming the system

Problem 1: The current **disparities in New Zealand's education system** lead to an underrepresentation of medical school candidates from rural areas or of Māori or Pasifika descent.

- Māori and Pasifika youth are more likely to be streamed out of science education early on in their schooling.
- Rural high schools have lower NCEA and university entry (UE) attainment than urban high schools. Regional and rural schools also have a lower mean decile compared to urban schools.
- The lower UE attainment rate for rural schools mean that rural students will have greater difficulty in entering university study, therefore missing the opportunity of the special admission pathways provided for the medical programmes.
- More Māori students (19/100) leave school without qualifications than non-Māori (9/100), this creates a barrier for Māori students to enter higher education.

Capacity in the system

Problem 2: The **Government's current funding cap** is limiting the number of students who can attend medical school.

- Of the 1,750+ applicants for the two medical schools each year, the existing schools are constrained by the Government's allocation of 589 domestic students.
 - UoA: Currently has a cap of 287 domestic student and 30 international students per year.
 - UoO: Currently has a cap of 302 domestic students and 20 international students per year.
- UoA and UoO have capacity, through leveraging existing medical training programmes, to lift the medical training intake by 100 places in 2026 and by an additional 200 places starting in 2027.

Problem 3: There are **constraints on the health system's ability to support placing students** in hospitals and clinics (GP clinics in particular) in training years four to six.

- It is becoming increasingly difficult to increase the number of placement positions as the number of students increases (i.e. to place students in the right places while enabling them to be exposed to a wide range of specialties with the appropriate supervisors). For example, there is no additional rural placement capacity available as UoA and UoO currently place students at all rural hospitals and rural GPs that have capacity to accept placements. While it may be possible to grow this capacity, this would require infrastructure investment (i.e. additional rooms at GP clinics).
- GP placements are a particular challenge. General practices are private businesses that often do not have the necessary physical spaces nor consistent teacher availability, causing students to be squeezed into overpopulated placements, decreasing their quality of learning. In addition, it is increasingly difficult for universities to pay GPs sufficiently to cover the costs of placements.
- Student safety and wellbeing is important. As more students are placed in placements where the learning environment may not be at the current high standards, they are more risk of not experiencing psychological safety during learning. Outside of placements' learning environment, student wellbeing is at risk when they are away from their support networks or are travelling large distances. Placements of this nature may also place students under significant financial strain.
- The lack of options related to placements may also be limiting the exposure of medical students to a range of disciplines, and the benefits associated with this.

Problem 4: There are **limited resources available** (including people, time and space) **to train and supervise** HOs and registrars.

- There is a shortage of 1,700 doctors, which by 2032 is projected to increase to 3,400 doctors. This has meant that many doctors are time constrained due to service pressure, making it difficult for them to find the time to supervise and train HOs.
- The health system is constrained. The size of hospitals and number of teams within these have not grown at the same rate as urban population growth.

Detailed problem statements (2 of 2)

There are also problems around the workforce distribution (both geographical and related to specialties) and the representation of workforce is not reflective of the community.

Distribution of the workforce

Problem 5: The distribution of demand from HOs for sub-specialties differs from the distribution that is needed.

- Before specialisation, GP's made up around 50% of the medical workforce in the 1980's. Since then, new knowledge and treatments have seen increased differentiation in the medical workforce, leading to increased options for specialisation. This has resulted in a decrease in GPs due to doctors choosing to specialise in narrower fields of medicine (GPs now making up 33% of the senior doctor workforce). The number of medical graduates going into GP each year has fallen below the portion of GPs in the specialist workforce, despite interest in GP increasing in medical schools. The reasons for this are that general practices are dealing with more complex medical needs, increased pressure from patients, workforce shortages and a funding system that has "not kept pace with demand" (as stated by Specialist General Practitioner and Chair of General Practice New Zealand, Dr Bryan Betty). Additionally, high levels of student debt upon leaving the medical education system may incentivise students to focus on better remunerated branches of medicine.
- Other specialties currently struggling to attract sufficient interest are general medicine, psychiatry, obstetrics and gynecology, radiation oncology and public health.
- There is a surplus of surgical registrars applying for a limited number of accredited training positions. Although these surgical residents help with off-hour operation of hospitals, they eventually have a delayed path to enter a new specialisation, or may potentially go overseas, delaying their place in the specialised workforce.

Problem 6: Rural areas have fewer GPs per capita than urban areas, and a significant proportion of this rural workforce are ageing and nearing retirement.

- According to the 2023 Workforce survey, New Zealand has 0.85 GPs per 1,000 people. This is as low as 0.58, 0.58 and 0.62 in Whanganui, Lakes district, and Counties Manukau respectively. The districts containing the main centres of Auckland, Wellington, Christchurch, and Dunedin have 1.1, 1.2, 0.94 and 0.98 GPs per 1,000 people.
- Many New Zealand graduates tend to choose to practice in the major centres where they have trained. This, as well as the fact that to many people, working in rural areas does not have as many community amenities and employment for partners as working in urban areas. This has resulted in a significant shortage of health professionals in rural communities. This issue of professional skill recruitment and retention into rural areas is not unique to medicine.
- The 2022 workforce survey on rural hospital medicine warns almost a third of rural doctors are intending to retire within the next five years and half intending to retire within the next 10 years.

Representation in the workforce

Problem 7: Māori, Pasifika, and people from rural communities are underrepresented in the workforce.

- Māori and Pasifika are under-represented compared to their proportion of the population. Although this is largely driven by there being a large number (42%) of international medical graduates (IMGs) in the health workforce, diluting these proportions, even after accounting for the IMGs, Māori and Pasifika are still under-represented. This is in turn driven by many of the items noted above.
- Preferential admission pathways have been in place since 1972, but have significantly increased in magnitude in recent years, which has increased the number of Māori and Pasifika doctors. Māori made up 4.7% of doctors in 2023, which increased from 3.5% in 2018. However, Māori make up at least 19.6% of the population. Similarly, Pasifika made up 2.3% of doctors in 2023, which increased from 1.8% in 2018. Pasifika make up just over 9% the New Zealand population.
- UoA and UoO make a conscious effort to offer places in the medical degree to people from these demographics that are underrepresented in the health workforce. However, due to the length of medical programmes and difficulty to overcome such historical underrepresentation, these communities have a significantly underrepresented workforce. Of the students admitted to UoO medical school in the last 5 years, 19% of students have identified as Māori and 6.3% have identified as Pasifika.

Problem 8: Rural areas have a lower proportion of New Zealand-trained doctors than urban areas (i.e. a higher proportion of IMGs).

- New Zealand has the highest dependency of IMGs in the OECD, making up 42% of our workforce. The two regions with the greatest percentage of IMGs are the Wairarapa and the Te Tai o Poutini West Coast, both with 67%.
- Overseas-trained doctors have a greater propensity to practice in minor urban and rural areas and in less affluent communities than New Zealand trained doctors (noting these doctors tend to have a limited tenure in New Zealand).
- The rural sector relies heavily on foreign-trained GPs, with 83% gaining their first medical degree overseas compared to 35% of those working in urban practices.

3

Consideration of
future options

Consideration of future options

The consideration of future options has been informed by UoA and UoO's regular reviews of existing medical education programmes to ensure they remain responsive to the evolving needs of New Zealand's health system and community.

Consideration of future options

As long standing providers of medical education in New Zealand, UoA and UoO continually review and adapt their programmes to ensure medical education remains responsive to the evolving needs of New Zealand's health system and community. In this context, UoA and UoO have drawn together an assessment of future options to address the challenges the medical education system faces. To align with MoH's process, this is focused on university-based medical education New Zealand rather than wider-health workforce and system challenges.

This section includes the following subsections:

- **Section 3.1: UoW third medical school.** A summary of the UoW third medical school proposal was developed - including key implications and implementation risks - to provide the foundation and scope for consideration of future options.
- **Subsection 3.2: Scope of options.** A decision tree was developed to articulate the full range of options available, and this subsection sets out the decision tree alongside options evaluation criteria that provided the foundation for assessment of future options.
- **Subsection 3.3: Shortlist options.** To provide comparison to the UoW third medical school proposal being considered by MoH, UoA and UoO established five shortlist options for detailed assessment. These options are reflective of the universities' regular consideration of options to expand and adapt existing programmes. This subsection sets out the shortlist options, providing detailed descriptions of each to support assessment.
- **Subsection 3.4: Options assessment.** Each layer of the decision tree was assessed against the options evaluation criteria to build a detailed understanding of the key elements and inform the assessment of shortlist options. This subsection sets out the detail and key findings from the decision tree and shortlist option assessment.





3.1

UoW third medical school

Understanding of the UoW third medical school proposal

UoW is proposing a four-year graduate entry programme that aims to train doctors focusing in primary and community care in rural locations.

A MoU between MoH and UoW for a third medical school at UoW was signed on 13 February 2024. The purpose of this MoU is to agree to the programme of work on the third medical school, designed to enable advice to be provided to the Minister of Health and to inform Cabinet decisions. The table below sets out the key details (based on current understanding) of this proposal.

Third medical school at UoW	
The UoW medical school will be a four-year graduate-entry programme that aims to train doctors focusing in primary and community care in provincial and rural locations. Working together with other universities and regional medical facilities, the school will aim to have its first intake of 120 students in 2027, with an estimated capital investment cost of \$380 million.	
Rationale	The UoW proposal is focused on addressing health workforce challenges - in particular looking to bolster the primary and community specialities medical workforce within provincial and rural locations, aiming for better representation of the communities being served.
# students	The programme will initially have an annual intake of 120 students.
Curriculum development timing	Work on the curriculum's development and accreditation will aim to begin in 2024, reliant on MoH's timing in working through a full business case process, including a cost-benefit analysis (CBA). The current intention is that the curriculum will be purchased from an Australian medical degree programme and then adapted to fit the New Zealand context.
Location of study	The programme will involve training at UoW for the first year and at training centres located in regional hospitals and larger community medical centres for the remaining three years.
Degree length and programme	The programme will be a four-year post-graduate degree, although the final degree accreditation (Doctor of Medicine (MD) or Bachelor of Medicine and Bachelor of Surgery (MBChB) or something else) is yet to be determined. The basis of the programme's structure is based on international examples that show health workforce outcomes are a function of how students are selected and where they train. It will aim to prepare graduates in primary and community care specialities for rural communities. The university claims it will be a "new approach to integrating provincial and rural communities into the medical education programme", partnering with various rural health centres and other education providers. The extent to which students are prepared for rural locations is driven by the programme focus and structure, not the location of the urban campus that programme is run from.
Course start timing	The indicative timing is for the programme to be ready for the academic year beginning January 2027.
Facilities	UoW does not have any pre-existing medical sciences facilities, however does provide facilities for a growing nursing programme that includes a Master of Health Science.
Order of magnitude cost	The estimated capital cost is \$380m. Each student costs \$370,000 for a 6-year medical degree, \$273,000 of which will be directly government funded. The cost of the medical school phase of the UoW programme may be comparatively less due to it only being a four-year degree, however this degree will be preceded by a three-year undergraduate degree and associated costs.
Entry pathway	Admission will be available upon completion of an undergraduate degree, along with any other entry requirements that help to widen the pathways to medical education and align graduate outcomes with the medical workforce. The specific selection criteria and tools, and whether UoW will accept international students is unclear.

Implications of the third medical school proposal

The medical education system has many stakeholders who are both directly and indirectly involved. As a result, when significant changes are implemented in the system (such as the addition of a third medical school) there are many flow on implications - including for the health workforce, strategic and operational implications for UoA and UoO and existing medical education.



1. Health workforce

The New Zealand health workforce is facing significant challenges in terms of understaffing and resource shortages, particularly for doctors and nurses. This issue has been a concern for some time.

The extra 120 medical graduates annually that UoW would provide from 2031 onwards will contribute to meeting Te Whatu Ora's goal of reaching 285 additional medical graduates annually. It is noted that increased capacity in medical education is only one element of the solution required to address challenges with the health workforce - in particular, placement capacity and retention of doctors will need to be addressed in parallel for increased capacity in medical education to be effective.

It will also contribute to reaching the workforce goal that was set by the Royal New Zealand College of General Practitioners, to be training 300 GPs annually from 2026. The 2026 timeframe will not be realised, but if UoW is successful in focussing on primary care, there could be a considerable increase in the uptake of GP registrars.



2. Strategic and operational implications for UoA and UoO

A third medical school will likely result in increased competition for clinical partnerships in New Zealand, particularly in rural hospitals and centres. UoA and UoO currently place students at all rural hospitals and rural GPs that have capacity to accept placements. New placements for UoW will displace current UoA and UoO placements, and increase pressure on national capacity. For example, the placements being used in rural towns for UoA and UoO's rural immersion and rural-regional programmes and the 17% of UoA students in years four to six that are placed at Waikato Hospital.

If challenges with the UoW model were to emerge, there might be an expectation that UoA and UoO will support solutions and remediation of these challenges. This will have cost and resource implications for UoA and UoO. As an example, the United Kingdom (UK) has a system where any medical school seeking accreditation must have a contingency partner. This partner aids the new medical school in the process, while also agreeing to take in any students that may have been enrolled while the medical school fails to meet monitoring during their provisional accreditation period.



3. Existing medical education

The introduction of a third medical school will likely result in positive and negative implications for the existing medical schools at UoA and UoO:

- The introduction of a medical school that has a fundamentally different structure to the existing schools may promote innovation and other advancements in the current schools in areas such as course structure and digital enablement, and may also complement the current offerings of the existing medical schools.
- The establishment of a third medical school in New Zealand will create challenges in areas such as staff recruitment and retention, and the relocation of students in their clinical placements.
 - International recruitment of academic staff is currently difficult for New Zealand medical schools. This raises concerns regarding where UoW's academic faculty will come from, and how much the current schools will be impacted.
 - There are additional staff (such as the medical and clinical faculty) who are part-time university employees or volunteers, but play a significant role in the medical education. The employee pool that this staff is drawn from is amongst the understaffed medical workforce, this may make it more difficult for UoW to recruit these staff. Or they may recruit these staff at the expense of the existing medical schools.
- The additional competition for medical placements, and any new clinical relationships being formed with UoW, will result in significant placement challenges for UoA in particular, and to a lesser (but still significant) extent UoO.

Implementation risks (1 of 3)

Developing a third medical school brings with it a range of risks that need to be appropriately account for (including accreditation, financial, faculty recruitment, timeline and reputational).

Accreditation

Gaining accreditation is a significant undertaking. There is a risk that it will take much more time and effort than initially envisaged.

Accreditation involves demonstrating a programme is meeting desired standards across the areas of medical programme context, outcomes, curriculum, learning and teaching, assessment, student monitoring and support, student centred implementation, and the learning environment used.

It is currently believed that UoW will purchase and then adapt a curriculum from a partner university in Australia. Although this will simplify the accreditation process, curriculum is only one part of the accreditation process. Other key areas include:

- The adaptation of the Australian curriculum to reflect the New Zealand health system, focusing on Māori and Pasifika health needs and the commitment to Te Tiriti.
- Getting the physical facilities up and running, including clinical placement settings and student learning environments (e.g. labs, libraries, simulation theatres, etc).
- Developing student support services and intake measures that are unique to a medical school which UoW will have to develop in order to receive accreditation.

In the UK the accreditation process is deemed to be a high risk process and isn't successful until a first cohort graduates. New medical schools require an existing school to be a 'contingency partner' in the event of failure and/or to provide support.

Financial

There is a risk that both the capital expenditure (capex) and ongoing operating costs (opex) will be significantly higher than they are expected to be today.

Based on currently available information, it appears that the estimated capex requirement for a UoW medical school is \$380 million, and it is proposed that this cost to be split between the Government (\$280 million) and UoW (\$100 million).

Along with the initial capex, there is a substantial list of opex that will need to be factored into the establishment and ongoing operating costs of the proposed medical school. For example:

- High, and ongoing, costs associated with rural immersion programmes, which are more cost more than standard programmes. The UoW proposal will see 120 students placed into rural immersion programmes from Year 3, which would carry a significant annual cost.
- Recruitment of new admission staff and an entire medical faculty (including academic, clinical and support staff).
- Additional student support services.
- Curriculum development and updates, which may have heightened costs due to the rural curriculum focus.

Implementation risks (2 of 3)

Anything that is new inherently takes on reputational risk, there is a large amount of uncertainty that comes with setting up a new medical school with a different structure.



Faculty recruitment

There is a risk that UoW will not be able to recruit all of the staff necessary to successfully deliver a new medical school, or it will cost much more than anticipated to do that.

Recruiting for medical school staff roles in New Zealand is already a difficult task for UoA and UoO. This indicates that recruiting an entire new faculty across the academic and clinical fields will be a significant undertaking. This challenge is heightened due to the rural focus of the UoW proposal and requirement to recruit rural academic staff. There are a very limited number of academics in New Zealand that have the pre-requisite qualifications to run a rural programme.

These recruitment challenges may require UoW to attract staff from the existing New Zealand medical schools and practicing clinicians, which will result in flow-on recruitment difficulties for the existing universities.

If the medical school was to focus its recruitment internationally, attracting a diverse staff will have its advantages. However, having a large proportion of international staff will also result in these staff having little to no understanding of the New Zealand context (i.e. Te Tiriti and Māori health). These staff will need to undertake additional training in this area.



Timeline

There is a risk that UoW will not be ready to take its first cohort in 2027, delaying the start date of teaching and graduation.

The goal of having an initial cohort intake at the beginning of 2027 would, if achieved, result in the first cohort entering the workforce at the beginning of 2031. This is considered an ambitious timeframe for delivery, and while the current intention to purchase and adapt an existing curriculum will help to speed up this process, there is significant risk that this timeline will be delayed.

Some of the key factors that may heighten this risk are:

- **The construction phase.**
Large scale infrastructure projects of the nature required to build the necessary facilities at UoW carry significant risk of delays and cost overrun - for example, due to resource consent requirements, community engagement and supply chain risk.
- **During faculty recruitment.**
As faculty recruitment is already difficult, there is a risk that UoW may not be able to recruit a full faculty in time to have them trained and initiated by the beginning of 2027.
- **In adapting the potentially purchased curriculum.**
The purchase of an Australian curriculum will help to speed up the process. However, there is a risk that this curriculum requires a significant amount of adaptation to get it to align with New Zealand health system accreditation.

Implementation risks (3 of 3)

Anything that is new inherently takes on reputational risk, there is a large amount of uncertainty that comes with setting up a new medical school with a different structure.



There is a risk that the UoW medical school does not deliver as many primary doctors in rural settings as expected in practice, due to a lack of student demand and the uncertainty associated with a new venture.

The four-year post-graduate medical school structure proposed by UoW will be the first in New Zealand. Anything that is new inherently takes on a reputational risk.

With this uncertainty comes some potential flow-on risks for other stakeholders in the medical education system. There may be some bias towards the existing medical schools from the different hospitals and medical facilities during the Advanced Choice of Employment (ACE) application process for PGY1 roles. This may lead to UoW students being placed in the less preferred positions until they have built up a workforce reputation.

There is a risk that this reputation uncertainty may deter students from applying outright for UoW for a period of time. UoW could potentially become a 'backup' option for the students who miss out on entry into UoA or UoO. This may in-turn affect its reputation building process.

UoW has clearly set out that its medical school will be different from the existing schools - in particular, that it will focus on primary and rural care. There is a risk that this new programme will not be as successful as expected in practice (i.e. may not encourage as many students into primary care vocations in rural settings as expected). Note that the Hamilton location is unlikely to lead to more primary doctors in rural settings than any other urban location; the programme focus and structure is the key factor.

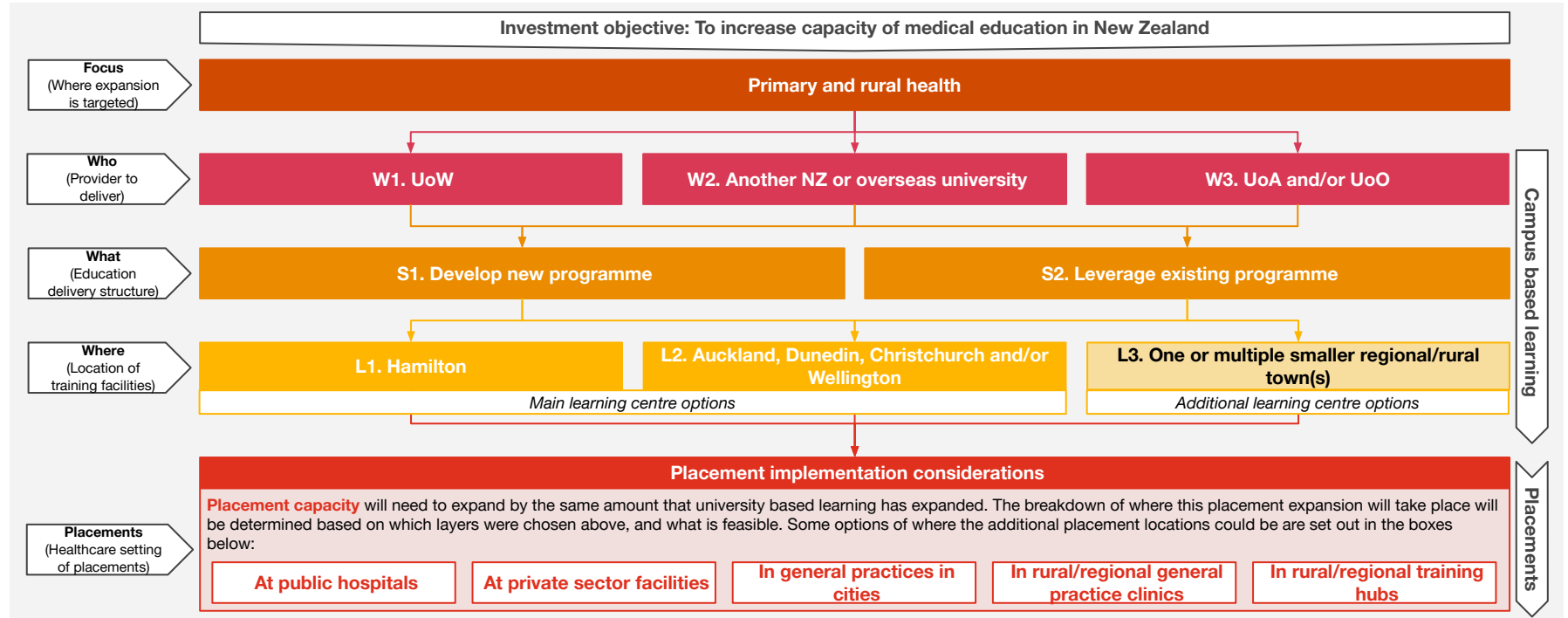


3.2

Scope of options

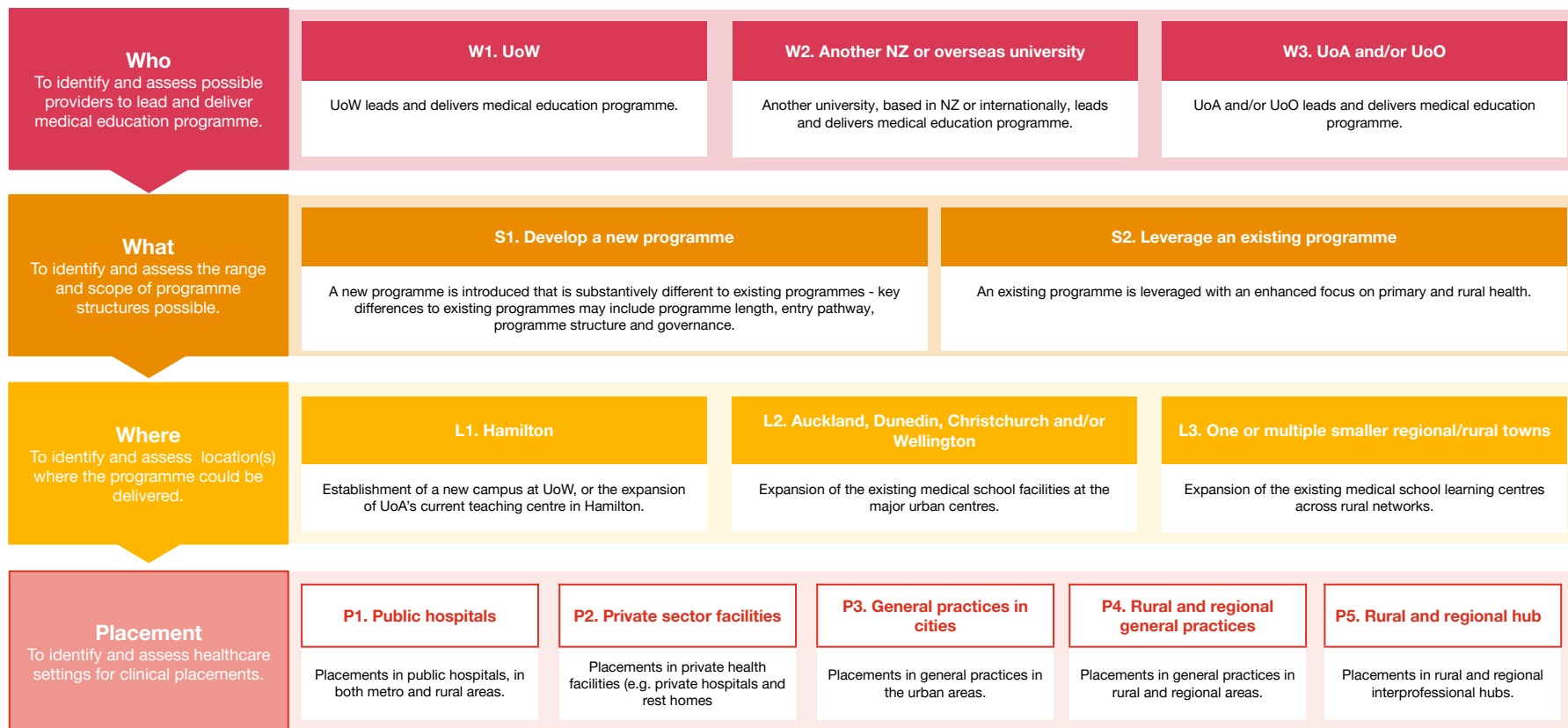
Decision tree

The decision tree is designed to illustrate the full range of potential future options for medical education in New Zealand, and is reflective of UoA's and UoO's regular consideration of potential adaptations and expansions of their programmes.



Decision tree descriptions

Descriptions of each layer of the decision tree were developed to provide clear definitions of each option to support assessment.





Shortlist options

Shortlist options

To provide comparison to the UoW third medical school option being considered by MoH, UoA and UoO established five shortlist options which they believe are worthy of detailed comparison. These options are reflective of the universities' regular consideration of options to expand and adapt existing programmes.

Rationale for shortlist options

Alongside the UoW third medical school option, UoA and UoO established five shortlist options for detailed comparison. These are set out in the table on the right, and are reflective of the universities' regular consideration of options to expand and adapt existing programmes. To support comparison, the five shortlist options assume a similar level of increased capacity as the UoW third medical school option, and are:

- **Effective at solving the problems identified.** All five options deliver on the overarching investment objective to increase capacity of medical education, and are within a similar range of effectiveness at solving the representation and distribution problems identified.
- **Feasible.** All five options are feasible, however vary in terms of implementation complexity and risk, delivery timeframes and estimated cost.

The remainder of this sub-section provides detailed descriptions of each of the shortlist options, as well as order of magnitude costs. This information is based on publicly available information on the UoW third medical school option, as well as UoA's and UoO's existing information related to the 5 shortlist options identified.



Shortlist options

1. UoW third medical school (base option for comparison)

2. UoA and/or UoO provision

- a. UoA and UoO expand existing programmes across their networks
- b. UoA and UoO establish national school of rural health
- c. UoA and/or UoO establish new graduate entry programme

3. UoA provision in Hamilton

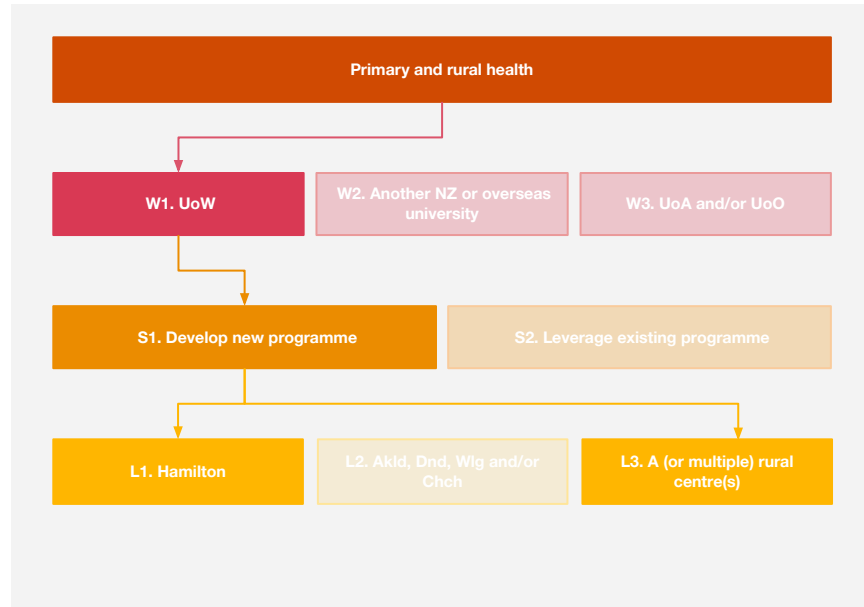
- a. UoA expands in Hamilton, creating second major training hub
- b. UoA establishes graduate entry programme in Hamilton

1. UoW third medical school

UoW third medical school would be a four year graduate entry programme with capacity for 120 students, predominantly based at UoW's urban campus in Hamilton with placements in surrounding regional and rural locations.

UoW third medical school

The UoW third medical school would be a four-year graduate entry programme, with a focus on primary care. The main teaching centre will be based at the urban UoW campus in Hamilton, with placements in surrounding regional and rural locations. Working together with other universities and regional medical facilities, the school would aim to have its first intake of 120 students in 2027.



Key features

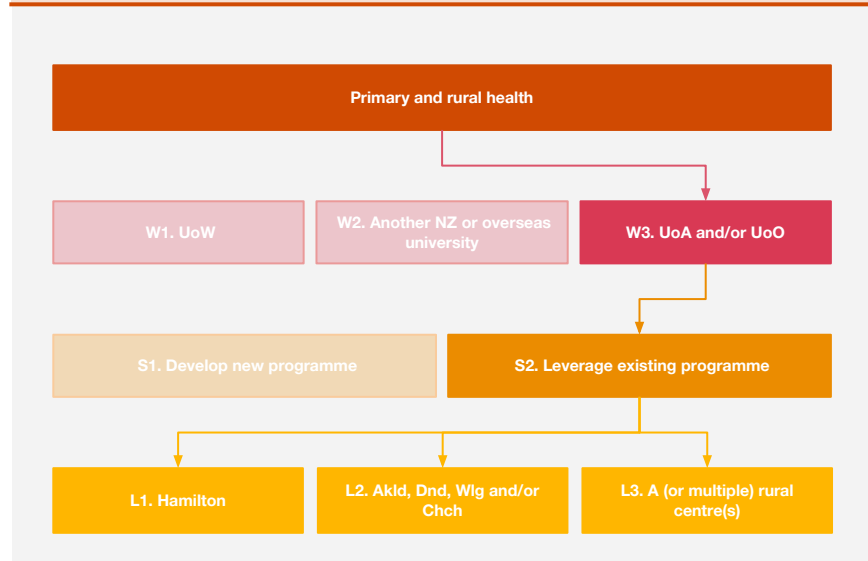
Key programme features	Provider	UoW
	Entry pathway	Graduate entry pathway
	Degree length	Four years (preceded by three year undergraduate degree)
	Curriculum	Team-based and experiential learning, with increased focus on primary and rural health
	Location	Main campus in Hamilton, with regional and rural learning centres in surrounding areas
	Facilities	New Health Sciences precinct on UoW campus, and renovation of clinical learning facilities
Implementation	Requirements	Purchase and adapt a curriculum, gain accreditation, build facilities, recruit teaching faculty and administrative staff.
	Order of magnitude cost	\$380m (indicative 2024 estimate) capital expenditure to build new facilities and renovate existing facilities.
	Timeframes	First intake in 2027, first graduates 2031, and the first GP specialist by 2036.

2a. UoA and UoO expand existing programmes across their networks

UoA and UoO would expand their existing programme, increasing capacity in both main learning centres as well as throughout the existing medical school network (Wellington, Christchurch, Hamilton, Tauranga) and its associated regional and rural locations.

UoA and UoO expand existing programmes

UoA and UoO would both expand existing programmes. Reflecting the locations of their current programmes, this would see capacity expanded in the existing main learning centres as well as regional and rural locations. This option is UoA's and UoO's base scenario when considering capacity growth.



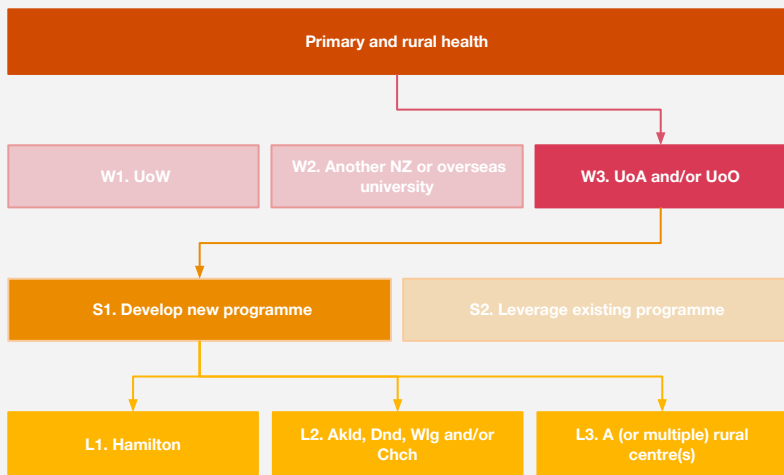
Key features		
Key programme features	Provider	UoA and UoO
	Entry pathway	Undergraduate, graduate and alternative entry pathways
	Degree length	Five years (preceded by one year of undergraduate study pre-selection)
	Curriculum	Research-based and experiential learning, with some enhancements to strengthen focus on primary and rural health
	Location	Students would start at a main centre (Auckland or Dunedin), and then progress throughout the existing medical school networks (in Wellington, Christchurch, Hamilton as well as rural locations)
	Facilities	No additional facilities required for core delivery, however option to expand facilities in existing rural locations
Implementation	Requirements	Recruitment of faculty
	Order of magnitude cost	No new capital expenditure for core delivery Operating expenditure costs aligned to current government funding per student
	Timeframes	Incremental increases in capacity from 2025 through to 2027, with the first additional GP specialist by 2034

2b. UoA and UoO establish national school of rural health

UoA and UoO would establish a national school of rural health, with students in years one to three based in existing medical schools and then moving to 10 rural hubs around New Zealand.

UoA and UoO establish national school of rural health

A national school of rural health would see students in years one to three split across the existing medical schools, following which students would move to school of rural health hubs in rural locations around the country. This would be co-governed by UoA, UoO as well as other medical and community stakeholders. A national school of interprofessional rural health was previously proposed to MoH in 2017.



Medical education in New Zealand - current state and consideration of future options

PwC

Key features

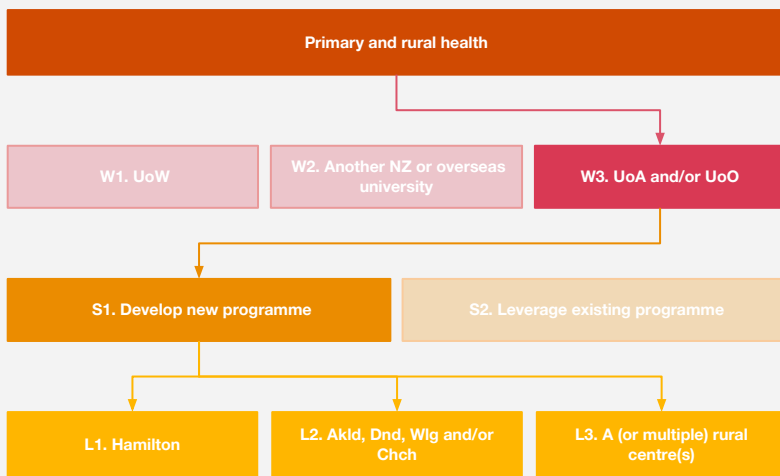
Key programme features	Provider	UoA and UoO, with support from Auckland University of Technology and Royal New Zealand College of GPs
	Entry pathway	Undergraduate, graduate and alternative entry pathways
	Degree length	Five years (preceded by one year of undergraduate study pre-selection)
	Curriculum	Research-based and experiential learning, with increased focus on primary and rural health (including GP-based content as well as GP visibility and faculty)
	Location	Students would start at a main centre (Auckland or Dunedin), and then go through the school of rural healths hub and spoke model, located throughout regional and rural centres
	Facilities	10 rural hubs would be established - using existing UoA and UoO facilities in rural areas
Implementation	Requirements	Co-governance model development, development of rural hubs
	Order of magnitude cost	A moderate and scalable quantum of capital expenditure will be required to develop the rural teaching hubs, expanding on the existing rural network where possible Operating expenditure costs aligned to current government funding per student
	Timeframes	First intake in 2025 with incremental increases through to 2027 (to existing medical schools), with students able to move to rural hubs by 2030

2c. UoA and/or UoO establish new graduate entry programme

UoA and/or UoO would establish a four-year graduate entry programme, running in parallel to the existing five-year programmes.

UoA and/or UoO establish new graduate entry programme

UoA and/or UoO would establish a four-year graduate entry programme that would run alongside their existing programmes. This programme would include a focus on primary and rural health, using the current medical schools existing facilities and regional and rural networks. Graduate entry has actively been considered at both universities in the past, but was not progressed due to insufficient benefits relative to the existing programmes and no commitment from the Government to increase the funding cap.



Medical education in New Zealand - current state and consideration of future options

PwC

Key features

Key programme features	Provider	UoA and/or UoO
	Entry pathway	Graduate entry pathway
	Degree length	Four years (preceded by three year undergraduate degree)
	Curriculum	Research-based learning and experiential learning, with increased focus on primary and rural health (including GP-based content as well as GP visibility and faculty)
	Location	Existing locations across New Zealand
	Facilities	No additional facilities required
Implementation	Requirements	Programme development (not including re-accreditation), recruitment of faculty
	Order of magnitude cost	No new capital expenditure Operating expenditure costs aligned to current government funding per student
	Timeframes	First intake in 2026, first graduates 2030, and the first additional GP specialist by 2035

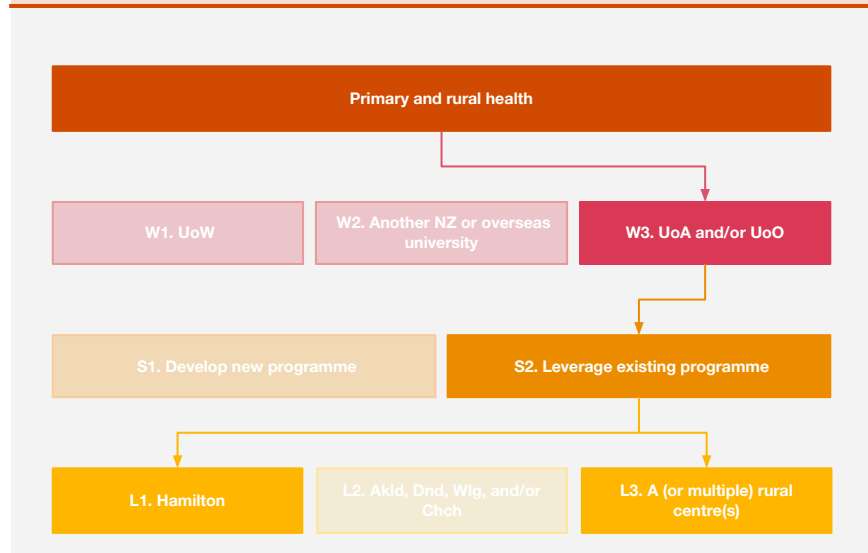
July 2024

3a. UoA expands in Hamilton, creating second major training hub

UoA would expand its current facilities in Hamilton to become its second major training hub, substantially increasing the size and scope of activities delivered in Hamilton (for example, student capacity and medical research).

UoA expands in Hamilton, creating second major training

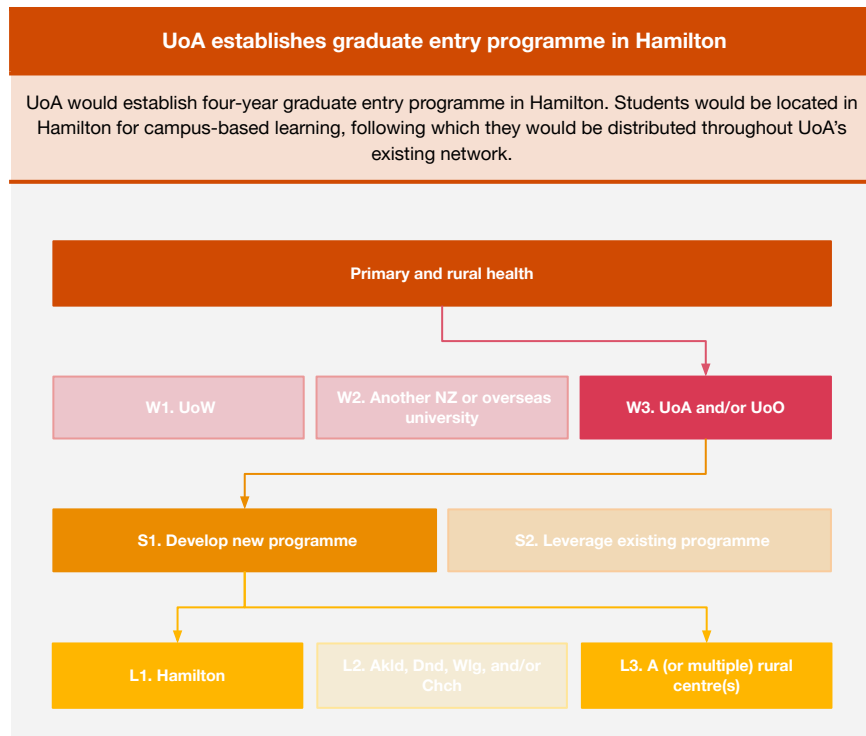
UoA would expand its current facilities in Hamilton to become its second major training hub. This option has been recognised as a natural progression with expansion to enhance student supervision, staff support and minimise travel.



Key features		
Key programme features	Provider	UoA
	Entry pathway	Undergraduate and graduate entry pathway
	Degree length	Five years (preceded by one year of undergraduate study pre-selection)
	Curriculum	Research-based learning and experiential learning, with some enhancements to strengthen focus on primary and rural health
	Location	Hamilton for campus-based learning, then throughout UoA's existing network
	Facilities	Expansion of UoA's existing facilities in Hamilton
Implementation	Requirements	Expansion of facilities, recruitment of faculty
	Order of magnitude cost	Some capital expenditure required to expand existing facilities Operating expenditure costs aligned to current government funding per student
	Timeframes	Incremental increases in capacity from 2025 through to 2027, with the first additional GP specialist by 2034

3b. UoA establishes graduate entry programme in Hamilton

UoA would establish four-year graduate entry programme in Hamilton.



Key features		
Key programme features	Provider	UoA
	Entry pathway	Graduate entry pathway
	Degree length	Four years (preceded by three year undergraduate degree)
	Curriculum	Research-based learning and experiential learning, with increased focus on primary and rural health (including GP-based content as well as GP visibility and faculty)
	Location	Hamilton for campus-based learning, then throughout UoA's existing network
	Facilities	Expansion of UoA's existing facilities in Hamilton
Implementation	Requirements	Expansion of facilities, recruitment of faculty
	Order of magnitude cost	Some capital expenditure required to expand existing facilities Operating expenditure costs aligned to current government funding per student
	Timeframes	First intake in 2026, first graduates 2030, and the first additional GP specialist by 2035

Order of magnitude costs for shortlist options

To support the assessment of shortlist options, order of magnitude costs were established. These order of magnitude costs are indicative-only, and designed to enable high-level comparison of the relative costs of the options - as provided below.

		1: UoW third medical school (base option for comparison)	UoA and/or UoO provision			UoA provision in Hamilton	
			2a: UoA and UoO expand existing programmes	2b: UoA and UoO establish national school of rural health	2c: UoA and/or UoO establish new graduate entry programme	3a: UoA expands in Hamilton, creating second major training hub	3b: UoA establishes graduate entry programme in Hamilton
Upfront Capex	Build new or renovate existing facilities	High	Low	Medium	Low	Medium	High
Upfront Opex	Programme set-up (eg curriculum development, accreditation)	High	Low	Medium	High	Low	High
	Faculty recruitment	High	Medium	Medium	Medium	Medium	High
Ongoing Opex	Teaching faculty salaries	High	Medium	Medium	Medium	Medium	Medium
	Non-faculty salaries	High	Medium	Medium	Medium	Medium	High
	Equipment and teaching resources	Medium	Medium	Medium	Medium	Medium	Medium
	Other administration costs	Medium	Low	Medium	Medium	Low	Medium
Overall cost		High	Medium	Medium	Medium	High	High

Scoring key:

None		Low		Medium		High		Very high	
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Insights on shortlist options costs

The order of magnitude costs for the shortlist options highlight that UoA and UoO can increase capacity by up to a total of 300 students without requiring any new capital funding.

Insights on shortlist options costs

The summary of shortlist option costs highlighted:

- **UoA and UoO have capacity, through leveraging existing medical education training programmes, to lift intake by up to a total of 300 places without requiring any new capital funding.** UoA and UoO do not require new capital funding from the Government to increase capacity. To accommodate new students, UoA and UoO would largely reconfigure use of existing facilities (for example expanding the size of overflow lecture rooms or rostering extra labs), and if any minor capital expenditure was required this would be reprioritised from existing budgets. If additional expansion at rural locations is desired, this would require some capital expenditure to support the expansion of existing facilities.
- **There are economies of scale associated with delivering medical education.** UoA and UoO will be able to leverage existing resources under any form of increased capacity, including facilities, teaching faculty and back office staff, IT licences and databases.





3.4

Options assessment

Option assessment approach

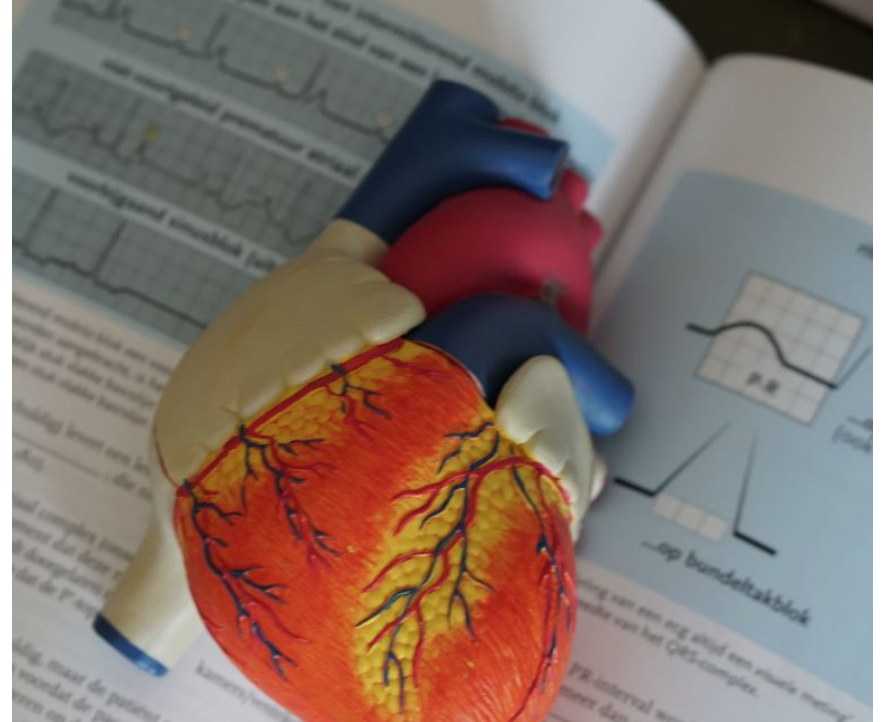
The options assessment is designed to support consideration of future options.

Overview of approach to options assessment

To support the consideration of future options, an assessment was undertaken, which comprised:

- **Development of assessment criteria.** This establishes the options evaluation criteria against which the options will be assessed. The options evaluation criteria is focused on the problems identified as well as feasibility.
- **Decision tree assessment.** Each of the three layers of the decision tree (set out on page 18) was assessed against the options assessment criteria. This assessment was undertaken sequentially, with each layer considered in isolation of one another.
- **Shortlist options assessment.** The results from the decision tree were then collated for each shortlist option, providing an overall average score for each to enable comparison. **Appendix B** sets out the assessment of each layer of the decision tree for each of the shortlist options, to provide further detail on how the overall average score was determined.

The remainder of this section sets out the findings and insights from the options assessment.



Options evaluation criteria

The options evaluation criteria focusses on assessing how effective each option is at addressing the problems identified, alongside feasibility considerations.

	Criteria	Sub-criteria	What is being assessed?
Assesses effectiveness at addressing the problems identified	Addresses capacity in the system	Current government funding cap	The option's ability to create extra student capacity to enable the Government to increase the placement caps.
		Capacity constraints on student placements	The option's ability to place students into hospitals and clinics in years four to six.
		Resource constraints on training HOs and registrars	The option's ability to provide resources to train and supervise House Officers (HO) and registrars.
	Improves distribution of the workforce	Distribution of medical graduates across vocational specialities	The option's ability to spread medical graduates across the vocational specialities that are in demand.
		Distribution of medical graduates in rural/regional communities	The option's ability to increase the number of doctors practising in rural/regional communities.
	Enhances representation in the workforce	Representation of Māori and Pasifika communities	The option's ability to increase Māori and Pasifika communities representation in the workforce.
Representation of rural/regional communities		The option's ability to increase rural/regional communities representation in the workforce.	
Assesses feasibility	Implementation complexity and risk		The option's implementation complexity, risk, and impact on the existing education pipeline.
	Time		The option's expected length of time to implement and until the first input of doctors into the workforce.
	Cost		The option's estimated costs (upfront and ongoing).





MCA assessment - Who (W1-W3)

A new provider delivering medical training increases upfront capital as well as ongoing operating costs, implementation complexity and timeframes for delivery when compared to delivery by an existing provider.

UoA and UoO are able to increase campus based capacity (subject to increases to the government's current funding cap) lower cost and more efficiently than a new provider. A new provider delivering medical education and training results in increased implementation complexity, time and cost (eg due to the need for accreditation, hiring and training staff, and development of new facilities). A new provider may also negatively impact existing medical education - due to displacement of placement capacity for the existing universities as well as recruitment of faculty. These challenges associated with a new provider highlight the importance for planned, systematic and incremental growth in capacity - to support the health system to be ready with sufficient placement capacity as well as enabling the development of a pipeline of faculty.

Assessment criteria			W1. UoW	W2. Another NZ or overseas university	W3. UoA and/or UoO
Effectiveness at addressing the problems identified	Addresses capacity in the system	Current government funding cap	Green	Green	Green
		Capacity constraints on student placements	Black	Black	Red
		Resource constraints on training HOs	Black	Black	Red
	Improves distribution of the workforce	Distribution of registrars across vocational specialities	Orange	Orange	Orange
		Distribution of doctors into rural/regional communities	Orange	Orange	Orange
	Enhances representation in the workforce	Representation of Māori and Pasifika communities	Orange	Orange	Orange
		Representation of rural/regional communities	Orange	Orange	Orange
Level of feasibility	Implementation complexity and risk		Red	Red	Green
	Time		Red	Red	Green
	Cost		Red	Red	Green

Scoring key:

Strong		Moderate		Poor		Worse	
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MCA assessment - What (S1-S2)

A new graduate entry programme (delivered by either a new or existing provider) may more effectively address the problems, however at a higher cost and implementation risk.

The development of a new graduate entry programme may be more effective at addressing the health workforce distribution and representation challenges through reducing barriers to entry through increasing the number of students eligible for the programme. However, this will carry increased implementation complexity, time and cost. By comparison, leveraging an existing programme is likely to be more straightforward from an implementation perspective and is only marginally less effective at addressing distribution and representation challenges - reflecting the benefits associated with the existing entry pathways and scheme designed to support in addressing these problems.

Assessment criteria			S1. Develop new programme	S2. Leverage existing programme
Effectiveness at addressing the problems identified	Addresses capacity in the system	Current government funding cap	(N/A)	
		Capacity constraints on student placements	(N/A)	
		Resource constraints on training HOs	(N/A)	
	Improves distribution of the workforce	Distribution of registrars across vocational specialities	Green	Orange
		Distribution of doctors into rural/regional communities	Green	Orange
	Enhances representation in the workforce	Representation of Māori and Pasifika communities	Green	Orange
Representation of rural/regional communities		Green	Orange	
Level of feasibility	Implementation complexity and risk		Red	Green
	Time		Red	Green
	Cost		Red	Green

Scoring key:

Strong		Moderate		Poor		Worse	
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MCA assessment - Where (L1-L3)

Expansion closer to rural locations (delivered by a new or existing provider) may be most effective at addressing problems with distribution and representation, specifically with those rural communities.

Expansion of learning centres in new locations - particularly smaller regional/rural towns - may be most effective at addressing problems with distribution and representation. This is due to the potential for increased exposure to medical education at these locations and expansion of catchment areas. However, reflecting the need for development of new facilities at these locations, this carries higher implementation complexity, time and cost. By comparison, expansion at existing locations is likely to be less complex and costly however may be less effective at addressing distribution and representation problems.

Assessment criteria		L1. Hamilton	L2. Auckland, Dunedin, Christchurch, and/or Wellington	L3. One or multiple smaller regional/rural town(s)	
Effectiveness at addressing the problems identified	Addresses capacity in the system	Current government funding cap			
		Capacity constraints on student placements		(N/A)	
		Resource constraints on training HOs		(N/A)	
	Improves distribution of the workforce	Distribution of registrars across vocational specialities		(N/A)	
		Distribution of doctors into rural/regional communities			
	Enhances representation in the workforce	Representation of Māori and Pasifika communities			
		Representation of rural/regional communities			
Level of feasibility	Implementation complexity and risk				
	Time				
	Cost				

Scoring key:

Strong		Moderate		Poor		Worse	
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Shortlist options assessment

The decision tree assessment informed the detailed shortlist options assessment, provided below.

The results from the decision tree were collated for each shortlist option, providing an overall average score for each to enable comparison. Appendix B sets out the assessment of each layer of the decision tree for each of the shortlist options, to provide further detail on how the overall average score was determined.

		1: UoW third medical school (base option for comparison)	UoA and/UoO provision			UoA provision in Hamilton	
			2a: UoA and UoO expand existing programmes	2b: UoA and UoO establish national school of rural health	2c: UoA and/or UoO establish new graduate entry programme	3a: UoA expands in Hamilton, creating second major training hub	3b: UoA establishes graduate entry programme in Hamilton
Addresses capacity in the system	Current government funding cap	Green	Green	Green	Green	Green	Green
	Capacity constraints on student placements	Black	Red	Red	Red	Red	Red
	Resource constraints on training HOs	Black	Red	Red	Red	Red	Red
Improves distribution of the workforce	Distribution of registrars across vocational specialities	Green	Orange	Green	Green	Orange	Green
	Distribution of registrars into rural/regional communities	Green	Orange	Green	Green	Green	Green
Enhances representation in the workforce	Representation of Māori and Pasifika communities	Green	Orange	Green	Green	Orange	Green
	Representation of rural communities	Green	Orange	Green	Green	Green	Green
Implementation complexity and risk		Red	Green	Red	Red	Green	Red
Time		Red	Green	Red	Red	Green	Red
Cost		Red	Green	Orange	Orange	Green	Red

Scoring key:

Very strong		Strong		Moderate		Poor		Very poor		Worse	
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Commentary on shortlist options assessment

The table below describes the high-level rationale behind each options assessment.

	1: UoW third medical school (base option for comparison)	UoA and/UoO provision			UoA provision in Hamilton	
		2a: UoA and UoO expand existing programmes	2b: UoA and UoO establish national school of rural health	2c: UoA and/or UoO establish new graduate entry programme	3a: UoA expand in Hamilton, creating second major training hub	3b: UoA establish graduate entry programme in Hamilton
Summary	This option is effective at addressing the problems, however carries the highest cost, implementation complexity and risk and will take longer to deliver.	This option is the 'do minimum' option for expansion of capacity - and therefore carries the lowest cost, implementation complexity and risk and will be the fastest to deliver of all the options.	This option is as effective as Option 1 at addressing the problems, and is lower cost and risk to deliver due to leveraging UoA and UoO's existing resources, capability and rural networks.	This option is as effective as Option 1 at addressing the problems, and it can be delivered at a lower cost and risk due to not needing any significant capital expenditure or additional accreditation.	This option is only marginally less effective than Option 1 at addressing the problems, however can be delivered faster and at lower complexity and cost due to UoA's existing facilities in Hamilton.	This option is as effective as Option 1 at addressing the problems, and can be delivered faster and at a lower complexity and cost, due to the UoA's existing facilities in Hamilton and resources.
Problem assessment	This option has the potential to be effective at addressing representation and distribution problems. This is due to being located in Hamilton (enabling students from Hamilton and the surrounding areas to study locally), increased potential intake through graduate entry focus as well as the development of a new programme expressly designed to address the problems.	This option is somewhat effective at addressing representation and distribution problems, as leverages UoA and UoO's existing admission schemes for different equity groups and presence in rural and regional centres. However, the structure of the programme will remain the same creating less opportunity to target specific problems.	This option has the potential to be effective at addressing representation and distribution problems, due to increased academic research into rural health, expansion of existing rural sites, as well as harnessing the benefits of exposure with near-peer supervision within the rural hubs.	This option has the potential to be effective at addressing the representation and distribution problems. This is due to the ability to leverage existing admission schemes, increased potential intake through graduate entry focus as well as the development of a new programme expressly designed to address the problems.	This option is somewhat effective at addressing representation and distribution problems, as leverages UoA existing admission schemes for different equity groups and increases UoA's Hamilton presence. However, the structure of the programme will remain the same creating less opportunity to target specific problems.	This option has the potential to be effective at addressing the representation and distribution problems. This is due to the ability to leverage existing admission schemes, increased potential intake through graduate entry focus as well as the development of a new programme expressly designed to address the problems.
Feasibility assessment	This option will take the longest and be the most expensive to deliver. It also carries the highest implementation complexity and risk. This is due to the need to build new facilities, develop new programme and for UoW to gain the necessary accreditation.	This option carries lower cost and risk than Option 1, and will be the quickest to deliver of all options (with new students starting 2025). This is because it is focused on expansion of the existing programmes, with no additional infrastructure.	This option carries lower cost and risk, and will be quicker to deliver than Option 1. Students that start in 2025 could transition to rural hubs by the time they are in Year 5. Some infrastructure investment will be required to expand existing facilities or develop new facilities.	This option is lower cost and faster to deliver than Option 1 as does not require new infrastructure and leverages UoA and UoO's existing resources, however does carry some risk due to the need to develop a graduate entry programme.	This option carries lower cost and risk, and will be quicker to deliver than Option 1. This is because it is leveraging UoA's existing programme and facilities in Hamilton.	This option carries lower cost and risk, and will be quicker to deliver than Option 1. This is because it is leveraging UoA's existing facilities in Hamilton.

Insights on shortlist options assessment

All shortlist options have the ability to provide the necessary increased capacity in medical education, with only marginal variation related to effectiveness at addressing distribution and representation problems.

Key trade-offs

The two key trade-offs identified through the shortlist options assessment are:

- **Addressing distributional and representation problems vs lower implementation cost and risk.** Options that include the establishment of new programmes and/or expansion at particular locations are marginally more effective at addressing distributional and representation problems than options that involve leveraging an existing programme or expanding existing facilities. However, these options carry higher implementation cost and risk and will take longer to deliver.
- **Introducing a new provider vs lower implementation cost and risk.** The establishment of UoW as a provider of medical education in New Zealand comes with significantly higher implementation cost and risk when compared with options to increase capacity through existing providers. Key risks relate to gaining accreditation, recruitment of faculty and building new facilities.

These key trade-off are reflected in the specific benefits and risks of the shortlist options:

- **Option 1** addresses distribution and representation problems through the establishment of a new four-year graduate entry programme focused on primary and rural healthcare. However, this option will negatively impact placement capacity and carry the highest cost, implementation complexity and risk, and take the longest due to the establishment of UoW as a provider.
- **Options 2b, 2c and 3b** are as effective as Option 1 at addressing distribution and representation problems, however can be delivered faster and carry less implementation complexity and cost when compared to Option 1. This is due to delivery by UoA and UoO, and the ability to leverage existing capability and resources.
- **Options 2a and 3a** do not enable the specific targeting of distribution and representation problems beyond what is already in place within existing constraints, however they offer the fastest and cheapest way to increase capacity in medical education.



4

Detailed key
insights

Detailed key insights - current state of medical education

14 key insights were identified to support MoH's consideration of future options, these are organised by current state, consideration of future options key findings and broader medical education and health system insights. The current state of medical education insights are provided below.

1

The medical education system is not currently training enough, or the desired representation of, doctors in New Zealand

The key drivers of this problem are the current government funding cap - which places a limit on the number of students who can attend medical school - as well as constraints on placement capacity.

2

There is not consensus on the number, or type, of new doctors required to address the challenges with New Zealand's health workforce

This creates a lack of clarity in relation to the current and future requirements of the medical education system to enable this change. Te Whatu Ora's Health Workforce Plan identified a shortage of doctors. However, there is not a consensus regarding where these doctors are needed or the type of specialist needed. Further assessment of need is required to support a strategic, system-level response to the shortage of doctors.



3

Existing UoA and UoO teaching centres and associated facilities provide extensive coverage across New Zealand

This includes key campuses and teaching facilities located in Auckland, Hamilton (UoA), Dunedin, Wellington and Christchurch (UoO). Outside of Auckland and Dunedin, Wellington and Christchurch are the largest campuses - with an annual intake of just under 200 students as well as significant research hubs. There is also a large number of smaller teaching facilities across the country including Whangārei, Tauranga, Rotorua, New Plymouth (UoA) and Invercargill (UoO). Alongside this, regional placements and regional-rural programmes are in place throughout New Zealand (for example, in Tairāwhiti, Tararua, Ashburton and Alexandra). This coverage means UoA and UoO are well positioned to expand existing sites in a way that will continue to provide extensive coverage across New Zealand.

4

UoA and UoO currently offer a diverse range of entry pathways

Entry pathways to UoA and UoO programmes include undergraduate, graduate and alternative entry. UoA and UoO also have admission schemes in place for Māori, Pasifika and rural communities, including:

- **UoA:** Māori and Pacific Admissions Scheme (MAPAS), Regional Rural Admission Scheme (RRAS) and Undergraduate Targeted Admission Schemes (schemes for applicants with disabilities, from low socioeconomic backgrounds, and whose primary guardian(s) has been granted refuge in New Zealand).
- **UoO:** There are equity groups for Māori, New Zealand Resident Indigenous Pacific Origins (NZRIPO), Socioeconomic, Refugee, and New Zealand rural origins

Detailed key insights - consideration of future options key findings (1 of 2)

The consideration of future options highlighted the ability of UoA and UoO to increase capacity more quickly, at a lower cost and with less implementation complexity and risk than the UoW proposal.

5

UoA and UoO are able to increase capacity in medical education more quickly than the UoW proposal

UoA and UoO have the ability to lift intake by 100 places in 2026 and an additional 200 places starting in 2027. By comparison, the UoW proposal will not see capacity increase until the start of 2027 at the earliest. The details of UoA and UoO's existing capacity are:

- 2025 will see a small increase in student intake (15 at UoA, 10 at UoO), reflecting recent Government decisions to make small increases to the funding cap.
- For the start of 2026, if the Government were to make more substantive increases to the funding cap, capacity could be increased by a total of 100 students taking total national intake from 589 to 689.
- From 2027 onwards, capacity could then be increased incrementally by up to a further 200 students, increasing total national intake to 889.

6

UoA and UoO are able to increase capacity in medical education at lower cost than the UoW proposal

UoA and UoO do not require new capital funding from the Government to increase capacity (to the 889 total described on the previous page). To accommodate new students, UoA and UoO would largely reconfigure the use of existing facilities, and if any minor capital expenditure was required this would be reprioritised from existing budgets.

7

UoA and UoO-led capacity increases carry less implementation complexity and risk

UoA and UoO-led capacity increases carry less implementation complexity and risk, due to the ability to leverage existing resources, capability and facilities. By comparison, the UoW proposal carries significantly more implementation risks, including

- **Gaining accreditation is a significant undertaking, and may take more time and effort than currently envisaged.** Accreditation involves passing external checks across curriculum, educational assessment, teaching methods, student and learning environments, as well as the outcomes and context of the medical programme. It is understood that UoW will purchase and adapt an Australian universities curriculum.
- **UoW may not be able to recruit the staff necessary to deliver a new medical school.** Recruiting for medical school staff roles in New Zealand is already a difficult task for UoA and UoO. This suggests that recruiting an entire new faculty across the academic and clinical fields will be a significant undertaking. It may require UoW to attract staff from the existing New Zealand medical schools and practicing clinicians, which will result in flow-on recruitment difficulties for the existing universities.
- **UoW may not be ready to take its first cohort in 2027 due to implementation complexity, delaying the start date of teaching and graduation.** Key risks to this timeline include the adaptation of a new programme, recruitment of faculty and construction of new facilities.

Detailed key insights - consideration of future options key findings (2 of 2)

The consideration of future options also identified that UoA and/or UoO are able to deliver the core components of UoW's proposal.

8

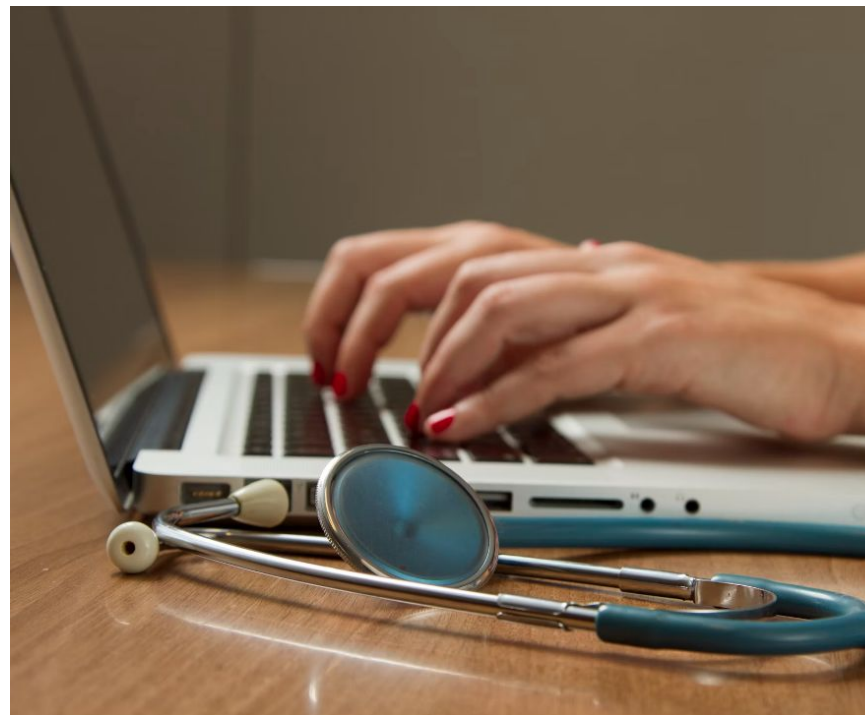
UoA and/or UoO could establish a four-year graduate entry programme to run alongside existing programmes

UoA and/or UoO-led establishment of a four-year graduate entry programme to run alongside existing programmes would be faster and lower cost to implement than the UoW proposal, due to the ability to leverage existing capability, facilities and accreditation.

9

UoA could provide an expanded offering in Hamilton, either through expanding its existing programme or establishing a new four-year graduate entry programme

Through leveraging its existing facilities in Hamilton, UoA could expand its existing programme or establish a new four-year graduate programme. This would be faster and lower cost to implement than the UoW proposal, due to the ability to leverage UoA's existing capability and facilities.



Detailed key insights - broader medical education and health system insights

The analysis also identified a set out health system level insights important for considering both the different options and broader changes.

10 Placement capacity is a key constraint on medical education capacity, and will not be addressed through a focus on university-based solutions

Historically, placement capacity has acted as a constraint on growth of the medical education system. This is reflected in UoA's and UoO's 2015 request to pause cap growth, due to placement and PGY1 capacity constraints. Therefore, placement capacity and needs to be addressed in parallel to increasing the capacity of campus-based medical education.

11 There is no additional rural placement capacity available

UoA and UoO currently place students at all rural hospitals and rural GPs that have capacity to accept placements. The UoW proposal will therefore displace the existing rural placement capacity, and may result in a lower than estimated net increase in the total number of rurally trained doctors.

12 The retention of doctors in New Zealand post-qualification is a significant challenge for the health workforce

This issue cannot be solved by the medical education system alone. In the last 10 years, 29% of New Zealand medical school graduates have moved overseas. This highlights the challenge of retention post-qualification, and the role of this in addressing the shortage of doctors. The medical education system relies on the health workforce in the form of placements and postgraduate supervisors to train more doctors (as described above), highlighting the need for wider health system constraints to be addressed.

13 Planned, systematic and incremental growth in the numbers of medical students is better than rapid expansion

This is due to the capacity of the health system to support this growth. This approach to growth at UoA and UoO has been constrained by successive governments making only minor and sporadic adjustments to the funding cap. Since 2017 both medical schools have requested continued and gradual growth of the government funding cap, with the first increases since 2017 being made in 2024 with an increase of 50 students, and an additional 25 approved for 2025.

14 A focus on diversification of providers appears to contradict an emerging conclusion of the University Advisory Group's review

An emerging conclusion of the University Advisory Group's review (i.e. the Gluckman review) is that it would be preferable for universities to specialise in certain areas, rather than for all universities to offer all courses. Diversification of providers appears to contradict this emerging perspective.

5

Appendix

Appendix A: Restrictions

This report has been prepared for the University of Auckland and University of Otago to set out the results of analysis of New Zealand medical education capacity and future options for increasing that capacity. This report has been prepared solely for this purpose and should not be relied upon for any other purpose. We accept no liability to any party should it used for any purpose other than that for which it was prepared.

To the fullest extent permitted by law, PwC accepts no duty of care to any third party in connection with the provision of this report and/or any related information or explanation (together, the “Information”). Accordingly, regardless of the form of action, whether in contract, tort (including without limitation, negligence) or otherwise, and to the extent permitted by applicable law, PwC accepts no liability of any kind to any third party and disclaims all responsibility for the consequences of any third party acting or refraining to act in reliance on the Information.

We have not independently verified the accuracy of information provided to us. We express no opinion on the reliability, accuracy, or completeness of the information provided to us and upon which we have relied. The statements and opinions expressed herein have been made in good faith, and on the basis that all information relied upon is true and accurate in all material respects, and not misleading by reason of omission or otherwise. The statements and opinions expressed in this report are based on information available as at the date of the report. We reserve the right, but will be under no obligation, to review or amend our report, if any additional information, which was in existence on the date of this report, was not brought to our attention, or subsequently comes to light.







This report is issued pursuant to the terms and conditions set out in our engagement letter dated 3 April 2024.

Appendix B - Breakdown of shortlist options assessment (1 of 6)

Option 1: UoW third medical school

Assessment criteria			W1. UoW	S1. Develop new programme	L1 & L3	Overall score
Effectiveness at addressing the problems identified	Addresses capacity in the system	Current government funding cap	Strong	(N/A)	Strong	Strong
		Capacity constraints on student placements	Very poor	(N/A)	(N/A)	Very poor
		Resource constraints on training HOs	Very poor	(N/A)	(N/A)	Very poor
	Improves distribution of the workforce	Distribution of registrars across vocational specialities	Moderate	Strong	(N/A)	Strong
		Distribution of doctors into rural/regional communities	Moderate	Strong	Strong	Strong
	Enhances representation in the workforce	Representation of Māori and Pasifika communities	Moderate	Strong	Moderate	Strong
		Representation of rural/regional communities	Moderate	Strong	Strong	Strong
	Level of feasibility	Implementation complexity and risk		Very poor	Very poor	Very poor
Time		Very poor	Very poor	Very poor	Very poor	
Cost		Very poor	Very poor	Very poor	Very poor	

Scoring key:







Very strong		Strong		Moderate		Poor		Very poor		Worse	
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Appendix B - Breakdown of shortlist options assessment (2 of 6)

Option 2a: UoA and UoO expand existing programmes

Assessment criteria			W3. UoA and/or UoO	S2. Leverage existing programme	L1, L2 & L3	Overall score
Effectiveness at addressing the problems identified	Addresses capacity in the system	Current government funding cap	Strong	(N/A)	Strong	Strong
		Capacity constraints on student placements	Very poor	(N/A)	(N/A)	Very poor
		Resource constraints on training HOs	Very poor	(N/A)	(N/A)	Very poor
	Improves distribution of the workforce	Distribution of registrars across vocational specialities	Moderate	Moderate	(N/A)	Moderate
		Distribution of doctors into rural/regional communities	Moderate	Moderate	Moderate	Moderate
	Enhances representation in the workforce	Representation of Māori and Pasifika communities	Moderate	Moderate	Moderate	Moderate
		Representation of rural/regional communities	Moderate	Moderate	Moderate	Moderate
Level of feasibility	Implementation complexity and risk		Strong	Strong	Very poor	Strong
	Time		Strong	Strong	Very poor	Strong
	Cost		Strong	Strong	Moderate	Strong

Scoring key:







Very strong		Strong		Moderate		Poor		Very poor		Worse	
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Appendix B - Breakdown of shortlist options assessment (3 of 6)

Option 2b: UoA and UoO establish national school of rural health

Assessment criteria		W3. UoA and/or UoO	S2. Develop new programme	L1, L2 & L3	Overall score	
Effectiveness at addressing the problems identified	Addresses capacity in the system	Current government funding cap		(N/A)		
		Capacity constraints on student placements		(N/A)		
		Resource constraints on training HOs		(N/A)		
	Improves distribution of the workforce	Distribution of registrars across vocational specialities			(N/A)	
		Distribution of doctors into rural/regional communities				
	Enhances representation in the workforce	Representation of Māori and Pasifika communities				
		Representation of rural/regional communities				
Level of feasibility	Implementation complexity and risk					
	Time					
	Cost					

Scoring key:







Very strong		Strong		Moderate		Poor		Very poor		Worse	
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Appendix B - Breakdown of shortlist options assessment (4 of 6)

Option 2c: UoA and/or UoO establish new graduate entry programme

Assessment criteria			W3. UoA and/or UoO	S1. Develop new programme	L1, L2 & L3	Overall score
Effectiveness at addressing the problems identified	Addresses capacity in the system	Current government funding cap	Green	(N/A)	Green	Green
		Capacity constraints on student placements	Red	(N/A)	(N/A)	Red
		Resource constraints on training HOs	Red	(N/A)	(N/A)	Red
	Improves distribution of the workforce	Distribution of registrars across vocational specialities	Orange	Green	(N/A)	Green
		Distribution of doctors into rural/regional communities	Orange	Green	Orange	Green
	Enhances representation in the workforce	Representation of Māori and Pasifika communities	Orange	Green	Orange	Green
		Representation of rural/regional communities	Orange	Green	Orange	Green
Level of feasibility	Implementation complexity and risk		Green	Red	Pink	Pink
	Time		Green	Red	Pink	Pink
	Cost		Green	Red	Orange	Orange

Scoring key:







Very strong 	Strong 	Moderate 	Poor 	Very poor 	Worse 
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Appendix B - Breakdown of shortlist options assessment (5 of 6)

Option 3a: UoA expands in Hamilton, creating second major training hub

Assessment criteria		W3. UoA and/or UoO	S1. Leverage existing programme	L1 & L3	Overall score	
Effectiveness at addressing the problems identified	Addresses capacity in the system	Current government funding cap		(N/A)		
		Capacity constraints on student placements		(N/A)		
		Resource constraints on training HOs		(N/A)		
	Improves distribution of the workforce	Distribution of registrars across vocational specialities			(N/A)	
		Distribution of doctors into rural/regional communities				
	Enhances representation in the workforce	Representation of Māori and Pasifika communities				
		Representation of rural/regional communities				
Level of feasibility	Implementation complexity and risk					
	Time					
	Cost					

Scoring key:







Very strong		Strong		Moderate		Poor		Very poor		Worse	
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Appendix B - Breakdown of shortlist options assessment (6 of 6)

Option 3b: UoA establishes graduate entry programme in Hamilton

Assessment criteria			W3. UoA and/or UoO	S1. Develop new programme	L1 & L3	Overall score
Effectiveness at addressing the problems identified	Addresses capacity in the system	Current government funding cap	Strong	(N/A)	Strong	Strong
		Capacity constraints on student placements	Very poor	(N/A)	(N/A)	Very poor
		Resource constraints on training HOs	Very poor	(N/A)	(N/A)	Very poor
	Improves distribution of the workforce	Distribution of registrars across vocational specialities	Moderate	Strong	(N/A)	Strong
		Distribution of doctors into rural/regional communities	Moderate	Strong	Strong	Strong
	Enhances representation in the workforce	Representation of Māori and Pasifika communities	Moderate	Strong	Moderate	Strong
		Representation of rural/regional communities	Moderate	Strong	Strong	Strong
Level of feasibility	Implementation complexity and risk		Strong	Very poor	Very poor	Very poor
	Time		Strong	Very poor	Very poor	Very poor
	Cost		Strong	Very poor	Very poor	Very poor

Scoring key:

Very strong		Strong		Moderate		Poor		Very poor		Worse	
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