Government funding of health research in New Zealand

Ian R Reid, Peter Joyce, John Fraser, Peter Crampton

Abstract

An analysis of levels of government health research funding carried out in 2008 demonstrated that funding in New Zealand, after adjustment for population size, was less than one-third of that in Australia, less than one-fifth of that in the United Kingdom, and about 10% of that in the United States. This was perceived to be a major obstacle to the recruitment and retention of clinical and academic staff in our hospitals and universities.

We have now repeated these analyses to determine the current state of these comparisons. From 2009 to the present funds for direct funding of research through the Health Research Council (HRC) have remained static at $54m. As a result of inflation of research costs (principally salaries) this represents a decrease of approximately one-quarter in the quantum of research funded by the HRC over the last 4 years.

Current funding rates in the comparator countries, population-adjusted and converted to NZ$, are 3.4-fold higher in Australia, 4.5-fold higher in the United Kingdom, and 9.7-fold higher in the United States. Urgent and sustained action is needed to correct these major disparities in government health research funding if the quality of academic and clinical staff in our public institutions is to be maintained.

Research provides a fundamental underpinning of medicine, and has transformed clinical practice over the last 50 years. Maintaining familiarity with the research literature is an integral part of continuing medical education for all doctors, many doctors expect to remain research active as part of their clinical duties, and universities require research activity of their academic staff. As a result, opportunities to undertake research and its resourcing are key requirements for the staffing of our hospitals, general practices and medical schools.

Unfortunately, research funding in New Zealand has not always been internationally competitive. An analysis of levels of government health research funding carried out in 2008 demonstrated that funding in New Zealand, after adjustment for population size, was less than one-third of that in Australia, less than one-fifth of that in the United Kingdom, and about 10% of that in the United States,\(^1,2\) a state of affairs that attracted international editorial comment.\(^3\)

This is a major challenge to the recruitment and retention of clinical and academic staff in our hospitals and universities. The global financial crisis has been a major obstruction to increasing funding levels in New Zealand so, as that ebbs, it is timely to re-assess funding levels here and in the countries with whom we compete for our clinical and academic staff.
Methods
Data describing funding levels of the Health Research Council of New Zealand and the National Health and Medical Research Council, in Australia, were obtained directly from those organisations. Funding information relating to the National Institutes of Health (US), Medical Research Council (UK), and National Institutes of Health Research (UK), was obtained from those organisations websites. Population data for each country are based on recent census figures, accessed via Google.

Results
HRC funding 2007–2013—Figure 1 demonstrates the levels of funding provided to the HRC from 2007 to the present. The only significant increase occurred in the first year of the present government, when total funding of the HRC increased 11.2%, from $73.96m to $82.28m.

Figure 1. Government funding (from Vote Science) of the Health Research Council of New Zealand, 2007–2013

Note: The red area represents that portion of funds spent on administration within the HRC.

Of these figures, $3.19m was committed to management costs within the HRC, and the balance was disbursed as research grants. However, 37% of this research investment is paid in overheads to maintain research infrastructure within the host institutions (usually universities or hospitals). Thus, in the 2012-2013 financial year, only $53.6m was available for direct research support.

The figure demonstrates that the dollar amount available to support research has been static over the last four financial years which, in the presence of ongoing inflation, means that the quantum of research able to be supported has been steadily declining.
HRC figures prior to the capping of project grant budgets demonstrated an annual inflation of approximately 9%, and this is broadly consistent with data from the NHMRC which show that the average cost of a project has increased 62% over the decade to 2012, or 6.2% per annum. Thus, when these inflationary effects are taken into account, there has been a decrease of approximately one quarter in the quantum of research funded by the HRC over the last 4 years. This shrinkage in effective funding levels runs counter to staff numbers in our hospitals and universities over this period.

The Performance Based Research Fund census of academics in the areas of Medicine and Public Health, shows an increase in numbers from 523 full-time equivalents in 2006, to 723 in 2012, which is probably a reflection of the progressive expansion of undergraduate medical student numbers during this period.

As a result of these opposing trends, the success rates in HRC project grant funding rounds have progressively declined, reaching 7% in 2012. This contrasts with the situation in Australia, where progressive increases in total funding have maintained project grant success rates at about 23% between 2000 and 2011.

**International comparisons**—We have previously highlighted the much lower per capita funding rates of health research in New Zealand, and have updated those figures in Table 1. From 2007 to 2012, the NHMRC budget, which does not pay for institutional overheads, increased 19.6%, increasing the per capita annual investment in health research in Australia to NZ$41.

**Table 1. 2012 funding of national health research bodies: international comparisons**

<table>
<thead>
<tr>
<th></th>
<th>HRC New Zealand</th>
<th>NHMRC Australia</th>
<th>MRC + NHS United Kingdom</th>
<th>NIH United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding per annum</td>
<td>NZ$ 53.6m*</td>
<td>Au$ 761m*</td>
<td>£1852m*</td>
<td>US$ 30.9b</td>
</tr>
<tr>
<td>Funding per capita</td>
<td>NZ$ 12.0*</td>
<td>NZ$ 41.0*</td>
<td>NZ$ 54.3*</td>
<td>NZ$ 115.7</td>
</tr>
</tbody>
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*Excluding overheads.

In the United Kingdom, the government research investment through the Medical Research Council and the National Institutes of Health Research (the latter mostly channelled into research carried out in the National Health Service) increased 47.5% between 2007 and 2011, which maintained per capita annual funding in New Zealand dollar terms at NZS54.

In the United States, funding of the National Institutes of Health increased 7.9% between 2007 and 2011, producing an annual investment of NZ$116 per head of population.

Thus, the disparities in government health research investment that we highlighted in 2008 have been maintained, with comparative funding rates being 3.4-fold higher in
Australia, 4.5-fold higher in the United Kingdom, and 9.7-fold higher in the United States.

**Discussion**

In 2008, we documented static funding levels for the HRC over the previous 4 years which, in the face of substantial inflation in research costs, had resulted in a one-third decrease in the quantum of research funded over that time. This contrasted markedly with the patterns of health research investment in Australia and the United Kingdom, where there had been a long-term commitment to annual funding increases which had resulted in progressive growth of medical research activity in those countries.

As a result, New Zealand's per capita funding levels were only a fraction of those in the countries with whom we compete for staff to run our hospitals and medical schools. The government's capacity to actively address this problem has been curtailed by the global financial crisis, but that has also impacted heavily on the United States and the United Kingdom.

Despite this, and the substantial devaluation of their currencies, their per capita funding of health research in New Zealand dollar terms has maintained its substantial margin over what obtains here during the last 5 years.

The present analysis has only considered HRC funding. While this is by far the major source of government health research funding, there are also contributions from other sources including the Marsden fund, grants administered by the Ministry of Business Employment and Innovation, the Performance Based Research Fund, and support for Centres of Research Excellence.

The proportions of these funds that hitherto have come into health research are small, and do not invalidate the international comparisons since the comparator nations also have a diversity of funding sources (e.g. Australian Research Council, National Science Foundation in the United States, and the other constituents of Research Councils UK together with European Union funding in Britain) which also support health-related research.

Up to now, these non-HRC funds have explicitly not supported clinical research, the final common pathway between all discovery research and clinical care, so this area has been particularly disadvantaged in comparison to the United Kingdom were the National Institute of Health Research channels funds specifically to this area.

The progressive decline in grant application success rates in the HRC demonstrates that these other funding sources are not significantly addressing the imbalance between supply and demand for health research funds.

Thus, we can look back on a decade of diminishing investment in health research in New Zealand. During this time, investment in our hospitals has substantially increased, as have the number of academic staff working in medicine and public health. As a result, an increasing number of would-be researchers have been pursuing a progressively diminishing pool of resource to support research, resulting in funding rates in HRC grant rounds which are among the lowest in the world, and one-third of those in Australia.
Such low rates of grant success discourage individuals from submitting grants, but also discourage academics from working in New Zealand. The medical faculties in both Otago and Auckland suffer a steady loss of academics disgruntled by the research funding environment, who move overseas, most commonly to Australia.

We also face a continual battle to recruit academics, including expatriate New Zealanders, because there is the perception that moving to New Zealand necessitates abandonment of serious medical research activity.

Thus, the failure of successive governments to recognise health research funding as being an integral part of their total investment in health is compromising our ability to train the health professionals that the nation requires in order to build the health service that it needs. Academically able clinicians have no incentive to be come and work in our hospitals and general practices.

The current crisis has arisen because there has been no indexing of research funding to the cost of research, nor to the size of the workforce that should be research-active. Structural changes need to be put in place to ensure that these parameters guide future levels of funding. Funding levels should be indexed to salary levels in our hospitals and universities, since these represent the bulk of the research costs.

Academic staff numbers have increased 40% over the last 6 years to meet the greater needs for health workforce training. Such increases are likely to continue over the next 4 years as we complete a programme of doubling medical student numbers.

If academic workforce numbers are to increase, then research funding must be recognised as an integral part of supporting that workforce. Changes in the academic and clinical workforces must be explicitly considered when determining the size of the HRC budget.

At a practical level, there is an immediate requirement for a 30% increase in HRC funding to match the substantial disinvestment which has occurred over the last decade as a result of cost increases.

While there was no increase in HRC funding in the 2013 Budget, there was the announcement of the 10 National Science Challenges, three of which have a primary focus on health. This could potentially produce an increase of $10m annually in health research funding, so is a very welcome addition to the support available. However, it falls well short of correcting the erosion in effective funding levels that has occurred over the last decade, and which will continue to occur due to ongoing inflation in research costs (particularly salaries), the expected increases in staff and student numbers in our medical faculties, and the growth in clinician numbers driven by ongoing population growth.

Assuming that the National Science Challenges are operationalized successfully, health research funding will still be $10–20m behind where it was a decade ago, and still be in need of an explicit plan to deal with growth in the sector.

For a long-term investment policy to be implemented, the nation needs to change its attitude to health research. It is not just a luxury which we can purchase in times of plenty. Rather, health research is an integral part of health training and practice which also provides financial returns to the nation through its support of the international marketing of our education and private healthcare sectors (including medical
tourism), and through its direct contributions to the agricultural and high-tech industrial sectors. This is the view that our competitor nations have taken and it is a view that we must adopt if we wish to retain our most able graduates and to enjoy the levels of healthcare and affluence that those nations accept as-of-right.

Competing interests: Nil.

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References:

