

A major new study on Kiwi health - can it inform decision-making?

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(This story has also been covered by [Radio NZ](#) (3'12") and [TVNZ](#) (4'09").)

The Ministry of Health has just released a major new [burden of disease study](#) for 2006, a culmination of a large epidemiological stocktake for New Zealand.

The study highlights changes in New Zealand, e.g. diet is emerging as the major modifiable risk factor with respect to disease burden. It also raises questions as to how useful a burden of disease study is for prioritisation of public health activity. We address these two issues in turn in this blog.

Epidemiological stocktake of New Zealand

Without doubt, this latest burden of disease study is an impressive body of work. And hats off to Dr Martin Tobias from the Ministry of Health who led the study.

The main metric used is disability-adjusted life years (DALYs), a composite measure of mortality and morbidity that measures how far we fall short of 'ideal' health. Comparisons can then be made between types of people, diseases and over time.

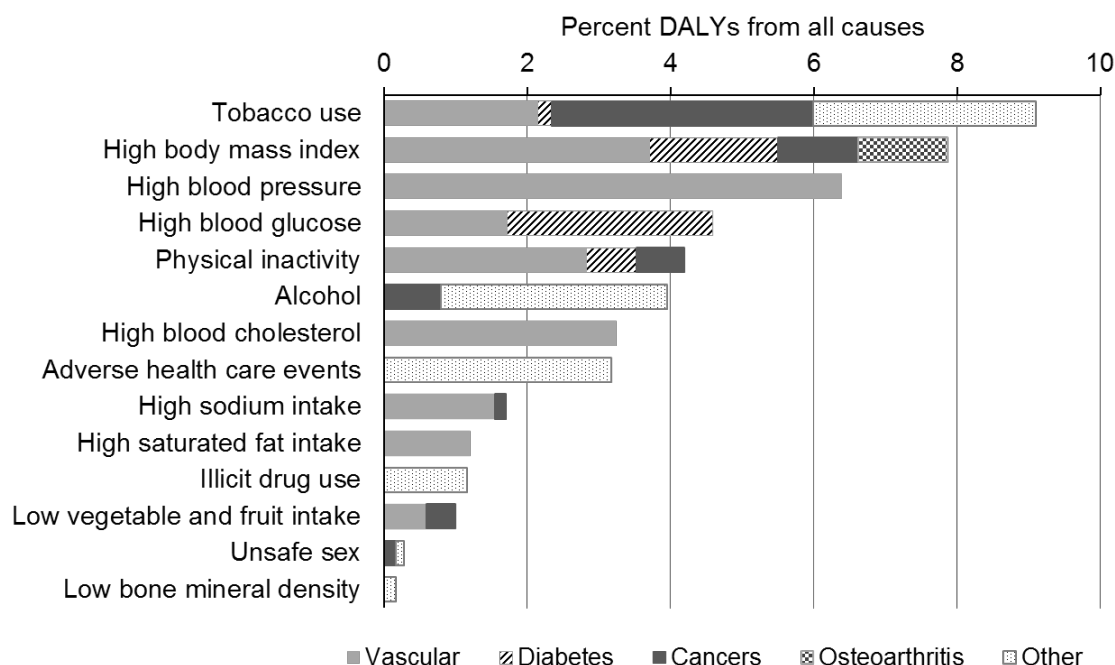
Key findings include:

- Cancers and cardiovascular disease each contribute 17.5% of the total burden, followed by mental disorders (11%), musculoskeletal disorders (9%) and injury (8%).
- Males have a 13% higher DALY rate than females – but it differs for fatal conditions (much higher for males) and morbidity (higher for females).
- Māori have about a 75% higher DALY rate than non-Māori.

This burden of disease study is not strictly comparable to a previous Ministry burden of disease study for 1996. But we know from many other statistics (including the recent Global Burden of Disease study) that the burden of disease is steadily declining in countries like New Zealand. And that the cardiovascular disease burden is falling in its relative contribution, whilst cancers and neurodegenerative diseases (e.g. dementia) are rising in their relative contribution. That is, what causes health loss in New Zealand is changing over time.

A particularly useful part of the current Ministry study are calculations of how much of the DALY burden is due to different risk factors. This gives us information about how much health gain we might achieve through 'ideal and complete' action on modifiable risk factors.

Attributable burden (percentage of DALYs) for selected risk factors, 2006 (Source: Ministry of Health (2013), Health Loss in New Zealand)



Not surprisingly, tobacco smoking stands out. 9.1% of all DALYs could be averted if nobody had ever smoked. Getting rid of tobacco out of New Zealand (as per the Government's smokefree nation goal by 2025) remains an overwhelming policy priority if we are aiming to improve the overall health, and reduce inequalities in health, of New Zealanders.

Interestingly, dietary risk factors combined (high salt intake, high saturated fat intake, low vegetable and fruit intake, and excess energy intake) accounted for 11.4% of DALYs in 2006 – more than tobacco. And overweight and obesity has probably now (i.e. 2013) overtaken tobacco in its contribution to disease burden according to projections in the Ministry study. Improving the nutritional environment of New Zealanders should therefore be a high priority for the Government.

What does this mean for decision-making?

It is useful to know where the burden of disease lies, and what risk factors (for their current distribution compared with some 'ideal' distribution such as no smokers or a markedly lowered and narrowed distribution of blood pressure) account for sizeable proportions of the disease burden? No question.

But this does not directly and solely inform decision makers as to what interventions to fund.

Ian Roberts (London School of Hygiene and Tropical Medicine) and Rod Jackson (University of Auckland) made this point in a recent [Lancet Viewpoint](#) in a (forceful) response to the just completed massive Global Burden of Disease 2010 study.¹ They argued:

“The information we need for allocation decisions is less about disease burden and more about the costs, benefits, and environmental effect of potential solutions. Priority setting should be informed by the marginal improvement in health and the marginal resource intensity of interventions... The best way to improve population health is to think less about the problem, disease burden, and more about the solution— cost-effective and carbon-effective interventions.”

We largely agree. Indeed, we have to declare an interest – we lead a [research programme](#) doing exactly what Roberts and Jackson argue for.

But let’s not throw out the baby with the bath water. Burden of disease studies are not only of epidemiological importance, they are also incredibly useful for decision-making too.

First, you need to know the relative size of different health problems – which is where a burden of disease study helps immensely, if not definitively. You can have a very cost effective, simple, acceptable and feasible intervention, but if it is not also addressing a sizeable public health issue then not much gain is going to arise.

Thus, faced with equally cost-effective interventions for athlete’s foot and ischaemic heart disease, it is the latter that is clearly more important for policy consideration.

Indeed, this is commonly recognized by agencies such as PHARMAC, the National Health Committee, and so on. They seek to prioritise interventions for funding that both address a sizeable burden and are cost-effective (and are equitable, and are coherent with other values, etc – see an earlier [public health expert blog](#).)

Second, a burden of disease study can provide the information – or more directly the ‘input parameters’ – necessary for cost-effectiveness analyses. Cost-effectiveness and burden of disease studies can be, and we believe should be, deeply inter-twined. Side-by-side they are far more valuable than in isolation.

So hats off again to the Ministry of Health. This burden of disease study is an impressive undertaking, and – if contextualized and used wisely – will greatly assist informed decision-making by the New Zealand health sector for the next decade.

1. Roberts I, Jackson R. Beyond disease burden: towards solution-oriented population health. *The Lancet* 2013.

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