

Modelling: one tool in the decision-making toolkit

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Making decisions about what to do (and what not to do) to improve population health relies on good information. This holds as true for improving cancer control outcomes in Aotearoa as it does for anything else. The paper by Wilson and colleagues in this issue of the *New Zealand Medical Journal* shows how useful information from thoughtfully designed modelling studies can be.¹ The work behind this paper is substantial and ambitious, and it represents many years of research.

The paper brings together over 30 modelled interventions from across the cancer continuum, spanning cancer prevention, screening, treatment and palliative care. Each intervention is evaluated in terms of health gains, equity impact, health system costs and cost-effectiveness, and then they're compared against other interventions. Such information is crucial to good policy.

However, prioritisation and policy go beyond information.

Over recent years it has become increasingly apparent that the approach to cancer control in Aotearoa has fallen behind comparable countries, and Māori and Pacific peoples are unfairly shouldering a disproportionate burden. The devolved model of service planning has no doubt frustrated coordinated planning, prioritisation and focused investment.

Te Aho o Te Kahu, our national cancer control agency,² was formed in response to the increasingly apparent post-code lottery of cancer care and a perceived lack of strong central leadership. The sector is enthusiastic for change. The scale of the task at hand is clear, with the Cancer Action Plan³ and State of Cancer Report⁴ outlining a myriad of areas requiring attention and improvement. Each competing priority in cancer is compellingly urgent in its own way and deciding

what to do (or do first) is challenging. Each possible intervention takes time, resources and effort and comes with an opportunity cost.

Our busy, active and often noisy sector is thirsty for progress. They understand the personal suffering of those in their care and feel deeply the urgency of progress and change. Those with a personal experience of cancer bring granular and compelling knowledge of gaps in service provision, inefficiencies or systemic problems that also deserve immediate action. The difficulty for decision makers lies in balancing these competing priorities fairly and effectively, and in conveying clearly why one priority comes before another when both are deserving.

A distinct advantage of the modelling work by Wilson et al is that very different interventions were modelled with common methods and common metrics.¹ The ability to compare “apples with apples” is a boon for decision-making at any level, but it's rarely available. Modelling health gains and costs over a lifetime also allows us to see a fuller picture and discourages the temptation of focusing only on short-term health gains and upfront costs. The work adds weight to the importance of cancer prevention: not just for the purpose of avoiding the enormous disruption that a cancer diagnosis brings, but also for the large population health gains within and beyond cancer, for the disproportionate benefit for our priority populations and for long-term sustainability.

There are, however, challenges in modelling studies that may limit their ability to inform decision-making. It can be difficult for models to fully and adequately capture specific inequities and systematic barriers for Māori and Pacific, such as sustained socioeconomic disadvantage and racism. In other instances, there may be important

unintended consequences of trying to do so without caution.⁵ The practical realities of health policy also mean that multiple interventions are often being considered at any one time. It would not be feasible to model all of them, or all possible combinations of them, in a tight timeframe. Additionally, there are the more foundational, system-enabling activities that are critical to do but difficult to model, such as investment in facilities, workforce and information systems. Inevitably, political priorities and the broader social context also influence the resources available to tackle the task, the speed at which progress can be made and the trade-offs that are made outside of a more dispassionate analytical model. Sometimes a global pandemic gets in the way.

Good evidence of impact is vital, but there is rarely a linear path from evidence to decision. As the authors acknowledge, there are other critical factors that must also be considered when making investment decisions in cancer control or other areas of health. Such factors include health system capacity, public acceptability, societal expectations, sustainability, affordability, timing of investment and alignment with government priorities. The “rule of rescue” imperative to provide high-quality care to those currently suffering with cancer is powerful, especially in the face of poorer cancer survival for Māori and Pacific peoples. A balanced approach to investment across the continuum is critical but invariably challenging, particularly when the immediate individual-level impacts are contrasted against longer-term population-level gains.

Te Aho o Te Kahu must take all these factors into account when shaping and revising our work programme. We have a strong focus on cancer prevention, but we are also mindful of the challenges facing those with cancer and their whānau. We remain deeply concerned about inequities in care and have a large programme of work underway to identify, monitor and address unexplained variations in cancer diagnosis and treatment. We know that there are barriers for people with cancer who must travel for treatment and we want to reduce these. We know that the healthcare system does not work as well for Māori patients as it does for non-Māori, so we are engaging closely with Māori communities all around the motu to identify ways of improving care and support that work for tangata whenua. These sorts of projects are less easy to evaluate in a model, but they are no less critical.

Prioritisation and policy must be cognisant of the needs and capacity of the cancer sector and the community. It requires the input of academic modellers, expert clinicians, patients, whānau, advocates, community leaders and policymakers. The modelling work presented here will be a foundation for us all to stand upon, and the authors should be congratulated. But so long as resources are finite and there is ongoing suffering and need, and wherever values have a say in what we do, our debates over what we should do next will inevitably rage as passionately as they do today.

Competing interests:

Prof Sarfati reports involvement in the BODE³ team for the first five (of nine) years.
Dr Nair reports they were a member of the BODE³ research programme team from 2013–2017 (inclusive).

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