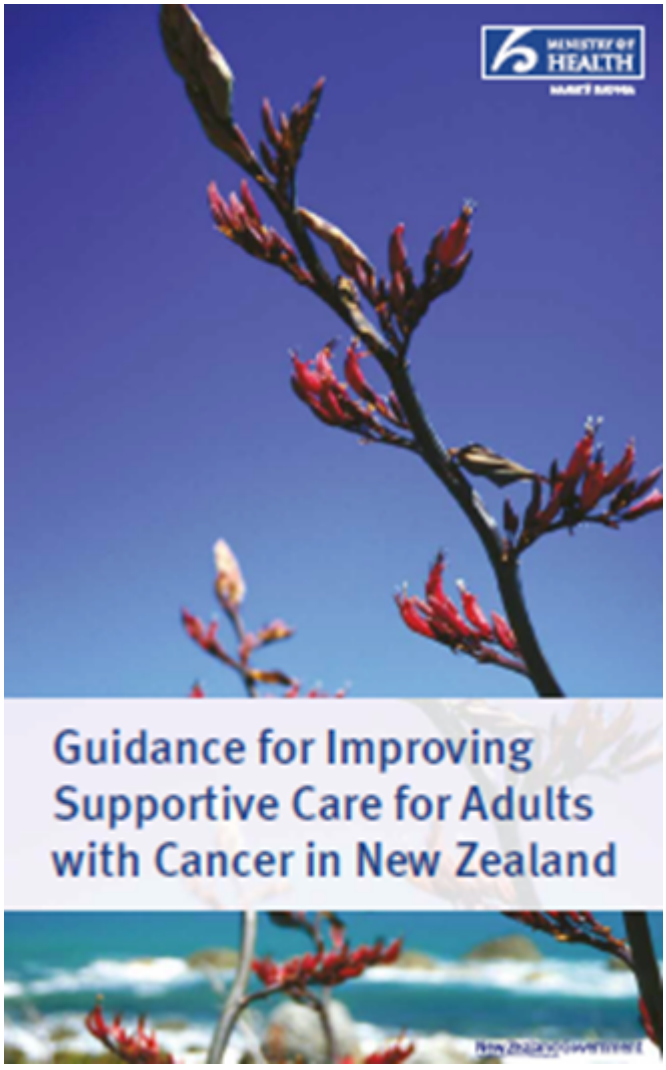
Care coordination for cancer cost-effective

2 September 2013

Professor Tony Blakely

Dedicated cancer care coordinators – a clinical nurse specialist charged with navigating patients through their care – appears to be cost effective, at least for stage III colon cancer.



The Government's 2012 Budget included $33 million for "better and faster" services for cancer patients, of which $16 million dollars was for care coordination nurses. This all seems sensible, in that the *immediate* and *net* cost of cancer care coordinators may be negligible – putting in place coordinators frees up other staff to do other things as we show

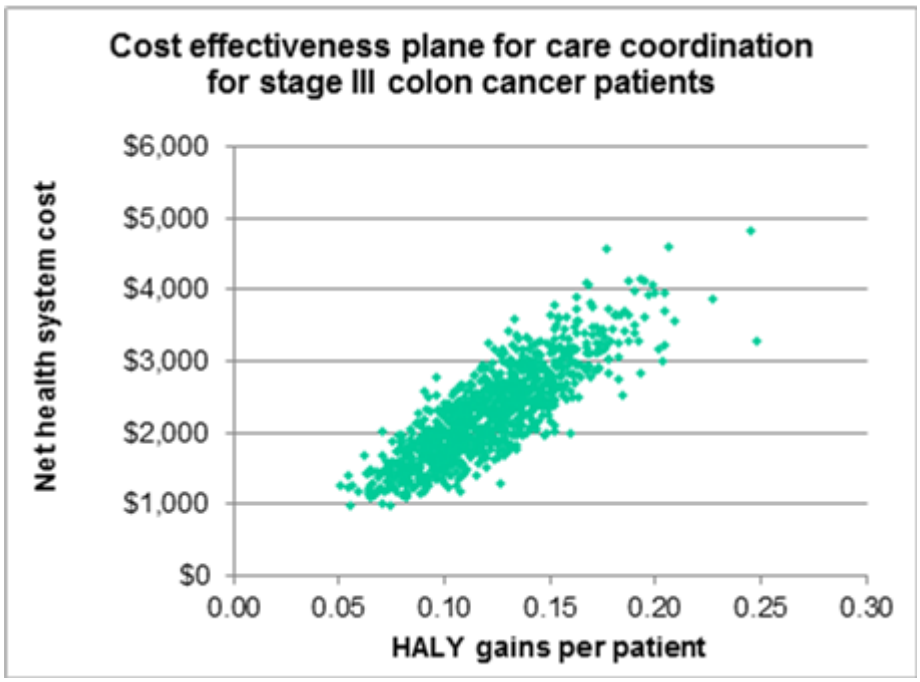
in a publication last week in the NZ Medical Journal.

But care cordiantors will change how patients are treated, and therefore not only change patient outcomes but also change ‘downstream costs’ in the health sector. For example, chemotherapy may increase. Therefore, the burning question is “are dedicated cancer care coordinators cost-effective, including all downstream changes in cost and health gains?” And for which cancers and which type of people?

Cost-effectiveness analyses are most commonly used for drugs, devices and ‘technologies’. But the most cursory of glances at where the money gets spent in health reveals that the majority of funds go to overnight stays in hospital and – generally – services. Undertaking cost-effectiveness analyses about these services is challenging – data are often sparse, and assumptions necessary.

In the BODE^3 Programme we are undertaking such analyses. For care coordinators we used good quality evidence on incidence, survival and coverage and time to treatment (diagnosis to surgery, and surgery to chemotherapy). But we had to collate sparse and low quality research evidence on exactly how many more people would receive chemotherapy with care coordination, and how much quicker, supplemented with expert knowledge elicitation from New Zealand health professionals.

Despite the uncertainty in some of these key input parameters to the modelling, the uncertainty about the incremental cost-effectiveness ratio (ICER – how much we spend to get a unit of health gain) was fairly good – a 95% uncertainty interval of $13,400 to $24,600, with a ‘best’ estimate of $18,800 per HALY gained. The reasons that the uncertainty about the ICER was not too bad is that the uncertainty for health gain and cost were highly correlated – if a care coordinator gets more people to chemotherapy, that will increase costs pro-rata. Put another way, there is a wide cloud of dots (different simulations in the model) on the cost-effectiveness plane, but they stretch out along a line radiating out from the origin – not the other way.



That is, cost-effectiveness estimates were well less than $40,000 per health adjusted life year (HALY – a measure somewhat like a QALY). This figure is from the rough rule of thumb of "GDP per capita" as the maximum amount a society might reasonably pay for a HALY, and so it points to cancer care coordination being cost-effective for New Zealand. For stage III colon cancer at least, and given our modelling assumptions.

We are producing pamphlets on each BODE^3 evaluation giving more detail on the assumptions, to assist decision makers and health professionals make their own judgment about the rigour and utility of our evaluations – see here for this stage III colon cancer care coordination evaluation. There is also a video presentation (12'09") and a powerpoint presentation.

But this is just a start. What about the costs and effects and cost-effectiveness for different types of people? And different types of cancer?

Regarding people, the above evaluation was more effective (greater HALY gains) and more cost-effective for younger people. For Māori, health gains were larger (due to less receipt of chemotherapy and longer waiting times currently), but the costs were also greater.

Regarding other cancers, we do not know yet – but we are working on it. We hypothesize that cancers with very good survival already (e.g. early stage breast cancer), or very poor survival with little treatment effectiveness (e.g. pancreatic cancer), will benefit less from the addition of such care coordination (and so be less cost-effective interventions). But modelling produces surprises, so let's just leave these as hypotheses for now – results forthcoming.

In the meantime, our provisional advice to cancer service managers needing to prioritise where care coordinators are best deployed, is:

- Direct them to cancers and phases of the cancer journey where treatments are effective, and faster receipt should help (e.g. chemotherapy after surgery, which can stir up micro-metastases that the chemotherapy then mops up).
- Direct them to younger patients, and patients with more to gain (e.g. Māori if waiting times are longer for Māori in your area).

But cancer management is complex and so it is important that managers still consider the pros and cons of cancer coordination in cancers with a poor prognosis. For example, if improved patient decision-making occurs around *declining* interventions that hold only small chances of extending life, then the patient may maximise the quality of their remaining months of life by avoiding adverse effects from treatment.

Keep a tab on this Public Health Expert Blog for future updates on our research around cancer care coordinators – and we welcome your critical comments on the work to date.

Public Health Expert Briefing (ISSN 2816-1203)
