SUBMISSION FROM THE FACULTY OF RADIATION ONCOLOGY, RANZCR
TO THE PRODUCTIVITY COMMISSION INQUIRY
INTO IMPACT OF ADVANCES IN MEDICAL TECHNOLOGY ON
HEALTH CARE EXPENDITURE IN AUSTRALIA

The Royal Australian and New Zealand College of Radiologists

Faculty of Radiation Oncology

Background:

The Faculty of Radiation Oncology is the professional body responsible for the training and establishment of standards relating to the medical practice of Radiation Oncology in Australia and New Zealand.

The Faculty is part of The Royal Australian and New Zealand College of Radiologists. This submission relates only to aspects pertaining to Radiation Oncology.

Cancer Demographics

There is specific data available relating to the demographic profile of cancer published by the Australian Institute of Health and Welfare.[i] The latest report, published in 2003, includes information from each of the state based cancer registries.

There continues to be debate about whether or not there is sufficient infrastructure to support the current and future needs of the Australian community for cancer treatment. There is widespread agreement however that inadequate numbers of crucial professionals, including radiation therapists and radiation oncology medical physicists have a restrictive impact in regard to service delivery.

Radiation Oncology as a technological speciality

Radiation Oncology is a technology-based medical specialty. The delivery of radiotherapy to patients with cancer, and other responsive conditions involves the use of machines such as linear accelerators (linacs) and brachytherapy machines. Linacs are the machines used to deliver external beam radiotherapy and brachytherapy machines deliver radioactive sources directly to a tumour site. Proton radiotherapy is also offered at several US and European facilities, but is not currently available in Australia. Until more evidence is obtained on the incremental outcome benefit of protons, it is unclear at this stage as to whether or how this emerging technology may affect the future cost of radiotherapy in Australia[ii]

There are large capital costs in establishing a radiation oncology facility. The Commonwealth has estimated for instance that a two linac machine centre may cost $8- $12 million to establish in respect of building and equipment costs alone. [iii]

The Faculty holds concerns about the development of costing models that separate diagnostic tests from procedural or treatment based technologies in regard to cancer. The trend in the field of radiation oncology is increasingly towards a blur between modalities traditionally used for diagnosis, (eg. CT, PET, MRI), which are also used for radiotherapy treatment planning and outcome assessment, and technologies associated with actual treatment delivery.

Factors influencing the use and adoption of medical technologies

Radiation Oncologists are committed to find the most effective methods of treating patients with cancer. This is the primary driver for the adoption of new technologies. The lack of a research and development base in Australia however means that this adoption of new technologies is relatively slow. Additionally, there is significant complexity in respect to the application of new hardware and devices to a range of different applications, whether in respect of different tumour sites or treatment techniques. These applications necessarily require a workforce with the appropriate expertise and opportunity to undertake research and development.

It is rare that these technologies will be developed locally because of the relatively small market (it was noted in 2002 that there were just 107 linacs in operation in Australia).[iv] Australia is well-positioned to work in partnership with industry, especially into the Asian region, however there are limited incentives to encourage industry to undertake such activities here in preference to other locations

Workforce

As indicated above, workforce is one of the identified areas in regard to the development of appropriate capacity to ensure that Australia will be able to reach the benchmark of being able to treat approximately 50% of patients with cancer. There is anecdotal evidence that one of the 'pull' factors for locally educated and trained staff to overseas centres is the more advanced equipment which they have access to in those environments.

Funding mechanisms

Provision of up-to-date equipment in Australia helps to ensure that more consistent, quality treatments are provided, as newer equipment is equipped with, and integrates better-automated quality assurance mechanisms. The Faculty is strongly of the opinion that the current inconsistent funding arrangements for the purchase and up grading of equipment between the public and private sectors are detrimental to the wellbeing of the Australian community. Specifically, the existing mechanisms create a limitation on the development and integration of new technologies into practice in the private sector.

The implementation of new technology into Australia is affected by perceptions of efficacy, international experience, and MSAC approval for funding under the MBS. The introduction of new technology is not necessarily consistent with MSAC requirements in that the lag time to generate high-level evidence of benefit is often not consistent with clinical imperatives to introduce new technology. Furthermore, a chicken and egg situation can develop where funding for equipment is needed to generate evidence of efficacy.

The nature of equipment based developments and the process of obtaining sufficient data for approval is a complex one, and there has been at least one instance in the Faculty's field (brachytherapy for prostate cancer) in which MSAC provided an interim approval. There have been challenges in collecting data to gain ongoing approval of MBS funding, especially when this is undertaken in an arms-length manner from the equipment manufacturers, along the lines of clinical trial data collection protocols.

Information systems

A matter of ongoing concern at both a broad cancer control level and on the ground in terms of individual radiation oncology departments is the paucity, compatibility, and integration of information systems. There have been some productive developments in this area, e.g. the NSW Radiotherapy Information Strategy, but this is limited in its application to only the public sector in one jurisdiction. This is one of the reasons that the Faculty supports the notion of a national body overseeing strategy in tackling cancer prevention, diagnosis, treatment and research, in addition to evaluating the performance of cancer centres in providing quality and timely treatment.

Current technological developments in Radiation Oncology

A specific new technology in radiotherapy, which is certain to become more prevalent in the next five to ten years, is Intensity Modulated Radiation Therapy (IMRT). This is a developing technology, which is currently being trialled in a number of sites across Australia. The premise of the technique is that it allows more radiation to be targeted to sites of tumour involvement, whilst also limiting the dose to adjacent normal tissue. As mentioned above, the need for accurate imaging to guide IMRT treatment planning is self-evident.

At a broader oncology level, there are a number of emerging developments in respect of targeted gene therapy and enhanced chemotherapy treatments which will likely impact on the management of patients with cancer. In this sense, the Faculty also supports the development of a model of cancer services based around the principle of integrated multi-disciplinary care as outlined in the Optimising Cancer Care in Australia Report, published in 2003.

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[i] Australian Institute of Health and Welfare (AIHW) & Australasian Association of Cancer Registries (AACR) 2003. Cancer in Australia 2000. AIHW cat. no. CAN 18. Canberra: AIHW (Cancer Series no. 23).

[ii] http://www.europhysicsnews.com/full/06/article6/article6.html (Will we need proton therapy in the future?)

[iii] http://www.health.gov.au/internet/wcms/publishing.nsf/Content/health-roi-radiother-index.htm (accessed 6 December 2004)

[iv] http://www.health.gov.au/internet/wcms/publishing.nsf/Content/Radiation+Oncology+Inquiry-1 (accessed 6 December 2004)

Report of the Radiation Oncology Inquiry, 'A Vision for Radiotherapy, Commonwealth Department of Health and Ageing, 2002