

The Financial Impact of Prostate Cancer in Australia

EXECUTIVE SUMMARY

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About CAHE

The Centre for Applied Health Economics (CAHE) is located within the Population and Social Health Research Program and the School of Medicine on the Logan Campus of Griffith University. It also sits under the broader Griffith Health Institute. CAHE is developing an Australian and international reputation for quality health economics research. CAHE's goal is to undertake economic research to deliver safe, effective and efficient health care solutions that are responsive to consumer preferences and improve quality of life.

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Glossary

Active Surveillance: this is a management technique for men with low risk prostate cancer involving regular clinical examination, PSA measurements and repeat biopsies. If these assessments suggest the risk of progression, men are offered radical treatment of curative intent.

Androgen Deprivation Therapy (ADT): (previously referred to as 'hormone therapy') treatments that minimise the effect of testosterone in the body and designed to slow or stop the growth of prostate cancer. ADT can also be achieved through bilateral orchidectomy or injection therapies that block (luteinising hormone) messages to the testicles to produce testosterone and anti-androgen tablets. In this document, bilateral orchidectomy is considered as separate to other forms of ADT.

Brachytherapy: a type of radiation treatment where radioactive seed(s) are implanted directly into the prostate. Low dose rate brachytherapy involves insertion of seeds for localised prostate cancer where the seeds are retained. High dose rate brachytherapy involves temporary insertion of radioactive substances into the prostate.

Continence Aids Payment Scheme (CAPS): Men with prostate cancer may be eligible for a subsidy payment through one of the various state funding schemes for continence products.

Extended Medicare Safety Net (EMSN): Families and singles qualify for EMSN benefits once they have accumulated a given threshold in out-of-pocket (OOP) costs for out of hospital services during the calendar year. After the threshold is reached, the EMSN pays 80 per cent of all OOP costs for out-of-hospital Medicare-related services for the remainder of the calendar year.

External beam radiation therapy (EBRT): Radiotherapy given from a source outside the body.

Gap payment: This refers to the gap between what the medical practitioner charges and what the patient receives back through the Medicare rebate and/or private health insurer. These additional costs are imposed directly on the patient.

Gleason score: This score reflects a grading system for how abnormal the tissue looks and whether it is likely that the cancer or the 'risk' posed by the cancer will grow.
Low risk = low grade, well-differentiated tumour, Gleason score 2–6;
Medium risk = intermediate grade, moderately differentiated, Gleason score 7;
High risk = High grade, poorly differentiated, Gleason score 8–10.

Health system costs: in this report these refer to costs borne by Government in the direct treatment of prostate cancer and include payments for surgery, radiotherapy, hormone treatment and medicines involved in prostate cancer care.

Hormone therapy: see Androgen Deprivation Therapy

Medicare Benefits Scheme (MBS): administered by Medicare Australia, the MBS provides payment for medical procedures, pathology testing, consultations and a range of other medical services for Australian citizens and permanent residents.

Orchidectomy/orchiectomy: Surgical removal of both testicles but leaves the scrotum intact. Bilateral orchidectomy (also called bilateral orchiectomy) is the original form of ADT.

Out-of-pocket expenses: payments made by individuals that are not covered by any third party and may include, for example, over-the-counter medicines or medical devices/aids, health professional visits, medical tests, transport costs, home and self-care assistance. In this document, these expenses are also referred to as 'patient costs'.

Pharmaceutical Benefits Scheme (PBS): administered by Medicare Australia, the PBS provides payment for pharmaceutical products for Australian citizens and permanent residents.

Prostate-Specific Antigen (PSA): A protein produced by the cells in the prostate, which is usually found in the blood (ng/ml) in larger than normal amounts when prostate cancer and other prostatic conditions are present. It is used as an initial test for prostate cancer to indicate a need for biopsies and to monitor for prostate cancer recurrence following treatment.

Radical prostatectomy: complete excision of the prostate gland and sparing of nerves around the bladder and bladder neck reconstruction. Surgical procedure can be open, laparoscopic or robotic (robot-assisted laparoscopy).

Watchful waiting: a decision to not treat the cancer initially, but monitor the patient and to determine whether or how fast the cancer is progressing, delaying non-curative treatment until a clinically optimal time for commencement is reached.

Executive Summary

Background

Each year approximately 20,000 men in Australia will be told by their doctors that they have prostate cancer. The impact on men and their families can be severe in terms of their physical health, emotional well-being, and relationships and work-life. As such, prostate cancer is a significant public health issue in Australia.

One aspect of the burden of prostate cancer that is not well understood is the financial impact of prostate cancer to the health system or to men and their families. For men with prostate cancer, high out-of-pocket medical expenses and disruption to employment can be financially devastating and fuel the anxiety and distress already caused from dealing with a potentially life-threatening disease. This report is the first to describe the economic impact of prostate cancer in Australia.

Objectives

The objectives of the study were to:

1. Quantify the health system costs for the major patterns of care faced by men with prostate cancer, taking a health system perspective; and
2. Quantify the economic burden faced by patients and families affected by prostate cancer by examining out-of-pocket costs and impact on employment.

This study examined the costs relating to treatment for men recently diagnosed with prostate cancer with a focus on the period up to 12 months post-diagnosis where most primary treatments and their attendant costs occur. It is acknowledged that for many men, particularly those with advanced cancer, the costs are ongoing and extend well beyond the first 12 months.

Data sources

Three data sources were analysed for this study:

- 1) Medicare Australia data collated on Queensland men from the ProsCan study (n=895);
- 2) Self-reported telephone survey data reported for Queensland men from the ProsCan study (n=912); and
- 3) An online survey provided self-reported data from men with prostate cancer and who were members of support groups around Australia (n=289).

ProsCan is a research study conducted by the Cancer Council Queensland that enrolled men from 24 urologist clinics across Queensland (1-2). It targeted men with newly-diagnosed clinically localised prostate cancer who were diagnosed between February 2005 and July 2007, with data collected up to 2011. The study collected a range of measures on clinical and diagnostic information, management patterns, psychosocial outcomes and health service utilisation and work impact. Medicare claims data were abstracted from Medicare Australia and included Government reimbursements, medical professional fees, and patient out-of-pocket expenses.

The online survey was administered over a 6-week period in 2013 and comprised of 289 men diagnosed with prostate cancer, mostly within the last five years (65%), and 65 (22%) diagnosed since January 2012. Questions were asked about treatments undertaken, employment impacts, out-of-pocket expenses, health insurance, financial situation, quality of life and retirement.

Comparison between study cohorts

Men recruited to the ProsCan study were similar to men participating in the online survey with respect to age (mean 64 years), having private health insurance (70%), and employment status (~40% employed). However, a greater proportion of men in the online survey had higher education and incomes, were partnered, underwent radical prostatectomy and fewer men had external beam radiation therapy (EBRT). Given that 132 (46%) of men responding to the online survey were diagnosed from 2010 onwards, it is likely that a higher proportion of men underwent minimally-invasive (laparoscopic or robotic-assisted) radical prostatectomy techniques that became available (in 2010) after the ProsCan data collection.

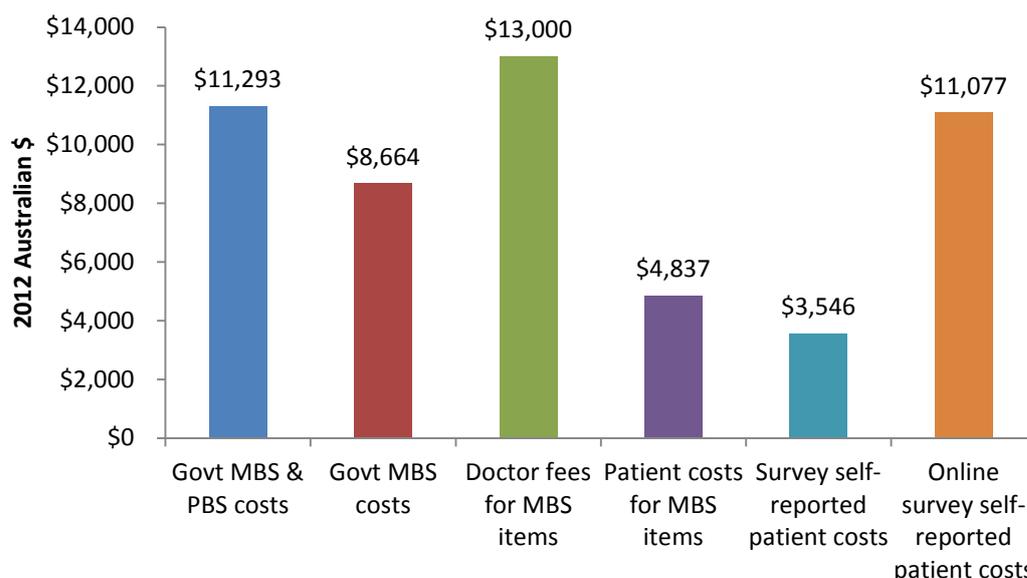
Representativeness of cohorts

Participants with private health insurance status are over-represented in this research and therefore this reduces the generalizability of the results to all men in Australia with prostate cancer. Participants without private health insurance tended not to have brachytherapy as a treatment option (10% of men in ProsCan, 2.6% of men in the online survey vs 22% in ProsCan with private health insurance). Further research is needed in men treated in the public sector. In this study, men without private health insurance tended to be older, retired and faced longer waiting times for treatment. Only a small proportion of men in our online survey were in this situation but the impact of out-of-pocket costs on those least able to afford them is likely to be devastating. It is also notable, that one third of men without private health insurance chose to be treated in a private hospital and face full private fees as opposed to incurring little or no costs in a public hospital.

Summary of Government Funding

Government costs through the Medicare Benefits Scheme (MBS) and Pharmaceutical Benefits Scheme (PBS) (in 2012 Australian dollars) for men with prostate cancer, from the initial date of appointment prior to the diagnosis to 12-months post-diagnosis, averaged \$11,293 (Figure 1). Government MBS and PBS expenditure was highest for men undergoing androgen deprivation therapy (ADT) \$16,883, followed by EBRT \$13,310, orchidectomy \$13,282 and was lowest for the most common treatment in the men, radical prostatectomy \$7,653.

Figure 1. Mean expenditure on prostate cancer over 12 months



For medical services on the MBS, medical providers (doctors) charged mean fees of \$13,000. For the same services, Government rebates to patients were \$8,664. Part of

the reason for these gap payments, that need to be met by patients and/or health insurers, is that indexation of MBS items has been below health care inflation levels and therefore may not represent the realistic cost of professional medical care and treatment in Australia (3).

The additional State government hospital funding for men with prostate cancer was not available from the study data. Recent Queensland evidence suggests hospital case-mix funding is \$13,605 (mean) for open prostatectomy and \$17,582 (mean) for robotic-assisted prostatectomy (4). Hospital funding will vary across States. It is estimated the total government cost for prostate cancer treatment in Australia is \$25,000 - \$30,000 per case.

Out of Pocket expenses

Our study showed a wide range of out-of-pocket costs during the first year after diagnosis, with the majority of men (75%) paying up to \$6,037 (n=380, mean \$3,546, median \$1,627).

Men responding to the online survey and had been diagnosed since January 2012 (n=65) reported higher out-of-pocket costs (mean \$11,077, median \$8,000) than men in the ProsCan study. This may be due to a higher uptake of more expensive laparoscopic prostatectomies. The finding also supports the upward trend of out of-pocket costs in Australians receiving Medicare services with sharp increases in recent years (5).

Out-of-pocket costs for men were substantially higher if they had radical prostatectomy or brachytherapy as initial treatment and notably lower for men having watchful waiting/active surveillance or ADT. Costs were particularly high during the first two months of diagnosis and these were mainly attributed to specialist fees and hospital stays. We found similar levels of out-of-pocket costs for men living in rural and remote regions of Australia compared to those living in metropolitan areas.

Most men in the online survey stated they paid for their cancer treatment by using their own savings, with few men (<10%) selling an asset(s) or increasing credit card debt.

An analysis of the self reported quality of life of men post diagnosis showed that having distress about the cost of prostate cancer was associated with poorer quality of life.

Impact on work practices

In general, returning to work after time off to have surgery and/or other treatments was seen as a positive step in a cancer survivor's recovery and signifies a milestone of the patient's physical and mental capacity to engage in their normal activity.

Men in this study are of the generation where many are the main 'breadwinners' and they have a strong attachment to their work roles. There is little research specifically investigating employment outcomes for men with prostate cancer (6-11).

The ProsCan findings showed that the vast majority of men who worked at the time they were diagnosed (82%) were back working by six months after diagnosis and, on average, 4.2 weeks leave was taken. This appears to be a relatively high proportion of individuals returning to work compared with all cancer types (12), which has been reported as 40% return to work rate at six months and 62% by 12 months after diagnosis (12).

Many men reported they were treated with dignity and respect from work colleagues and they took advantage of flexible work hours and reductions in workload. From the online survey, 27% of men had stopped working since their diagnosis (65% were within 5-years

from diagnosis) and in men diagnosed more recently since January 2012, 17% had stopped working. Men who retired because of their cancer on average retired 4-5 years earlier than they had planned to.

Because of their prostate cancer, a small proportion of men experienced negative reactions from managers and colleagues and reported they had been passed up for promotion (2%), were made redundant (3%) or felt pressured to leave work and some did not tell their employer they had cancer.

Limitations

These results should be interpreted with some caution. The main limitations of the research include the

- 1) over-representation of men with higher socio-economic status which, reduces the generalizability of the findings to all Australian men with prostate cancer;
- 2) reliance on patient recall of cost information that could be unreliable beyond being broad estimates only, and;
- 3) long-term costs of prostate cancer were not able to be examined.

Expected future trends

It is likely that the costs of prostate cancer to both the government sector and individuals will continue to rise due to more expensive services and pharmaceuticals, by population growth and ageing and health inflation, though mostly due to people of all ages getting more services and more expensive services per person (13).

In the future, with concerns about prostate-specific antigen (PSA) testing and over-treatment, there may be more focus on risk stratified management (i.e., very low risk, low risk, intermediate, high risk, high risk) and proposed nomograms to predict life expectancy. Treatment modalities include surgery (reserved for patients whose life expectancy is estimated to be 10 years or more) and EBRT plus ADT. Low-dose brachytherapy is used in low-risk individuals and high-dose brachytherapy is recommended for men with intermediate to high-risk prostate cancer. ADT as monotherapy is not recommended for localised disease (14).

The implications of these changing patterns of care may result in shifting the healthcare costs from the first year of diagnosis to later years, with more patients put under active surveillance before any treatment becomes necessary (15). ADT requires supportive medications (e.g., zoledronic acid, vitamin D and calcium supplements), diagnostic tests for bone health (e.g., DEXA scans) and treatment for adverse effects of ADT and other treatments.

It is possible that the smaller proportion of patients presenting with advanced prostate cancer disease currently in Australia will contribute more significantly to the financial burden of prostate cancer as new medications for these cancers become available for Government reimbursement (e.g., cabazitaxel received a restricted PBS listing in August 2012 and abiraterone will be listed with restrictions from August 2013).

Conclusions

There is a scarcity of research on the costs of prostate cancer, despite it being the most commonly diagnosed internal cancer in Australia. The costs of prostate cancer treatment in Australia are borne by governments, health insurers and men and their families. This report is the first to describe the costs of major treatments of prostate cancer by the various funders during the first 12 months of diagnosis. From the Government's perspective through Medicare Australia MBS and PBS services, higher costs are paid for EBRT and ADTs relative to radical prostatectomy and brachytherapy. For many men,

private medical providers fees were substantially higher than what they received back through health insurers and Medicare claims.

The financial impact of prostate cancer can cause distress for many men and this is linked to reduced quality of life. Although in the post-diagnosis shock, men will be adopting a 'treatment at all cost' approach, men newly diagnosed with prostate cancer should ask their doctors for their fee schedules and investigate the coverage by their health insurer so they can be fully-informed about the impact of their choice of treatment. Although, there is a wide range of out-of-pocket expenses for men, some treatment-related costs can be very high and unexpected. In this study, out-of-pocket costs were particularly high for men with private health insurance and for those undergoing prostatectomy or brachytherapy.

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