6 Conclusions

Health system costs of cancer in Australia

The total health system cost of cancer in Australia in 1993–94 is estimated as $1,904 million or 6% of health system costs. For disease groups defined in terms of ICD-9 chapters, cancer ranks eighth in terms of direct costs, yet is the second highest contributor to deaths (33,176 deaths, which represent 27% of all deaths). Direct costs for both digestive and circulatory diseases are approximately double those of cancer.

Unlike most other disease groups, hospital inpatient expenditure accounts for the majority (over 70%) of the health system costs of cancer. Medical service costs outside hospitals account for a further 14%, 11% other costs, 3% pharmaceutical costs, 2% nursing home costs and 0.6% allied health costs.

The cancer which contributes most to direct health system costs is NMSC (an estimated $232 million) which accounts for a small number of deaths (379 in 1993). However, NMSC dominates new cases, with over 243,000 in 1993 (78% of all new cancers). These cost estimates include health interventions for benign skin tumours and in-situ skin cancers, frequently aimed at excluding or preventing invasive cancer, as well as for invasive cancers.

Colorectal cancer is the second highest contributor to direct costs (an estimated $205 million), ranks second in terms of cancer deaths (4,440 in 1993, 13% deaths), and ranks third in terms of new cases (9,538 cases, which is 3% of all new cases and 14% of cases excluding NMSC). Breast cancer ranks third in terms of direct costs ($184 million), third in terms of deaths (2,641, 8% deaths), and fourth in terms of new cases (8,448 cases). Breast cancer costs are about 80% of those for NMSC.

Lung cancer accounts for the largest number of cancer deaths (6,393, 19% deaths), has approximately the same number of new cases as deaths (6,911), and ranks fifth in terms of costs ($107 million).

For most cancer sites, the vast majority of direct costs are for hospital costs. The exceptions are cervical cancer, NMSC and breast cancer, where a significant proportion of the costs are in the medical sector (which includes general practice and specialist consultations, and pathology tests which are not conducted in hospitals) and in the 'other' sector (because public health programs for these three sites have been included in the disease cost estimates).

Overall, health system treatment costs for cancers are estimated to be 14% higher for females than males. Health system costs for cancer rise with age, peaking in the 45–64 year age group for females and the 65-74 year age group for males, and then decline at older ages.

Estimated lifetime treatment costs for invasive cancers vary enormously, from around $58,000 per leukemia to less than $3,000 for melanomas and other skin cancers. The average lifetime treatment cost per new case of invasive cancer (excluding NMSC) is estimated to be around $16,000.

Improving the reliability of cancer costing

The major limitations to the methodology used to estimate the health systems costs of cancer for 1993–94 relate to the lack of up-to-date information on treatment patterns for medical and allied health services, and to some extent for drugs. Utilisation data for these sectors relate to 1989–90 or 1990–91 and will not reflect changes in clinical practice or disease patterns between then and 1993–94.

The 1995 National Health Survey unit record data will be available for future costing work but this provides only self-reported data on medical, allied health and pharmaceutical drug usage for broad categories of illness condition. Improving the reliability of cancer cost estimates requires the collection of detailed morbidity and treatment patterns along the lines of the 1990–91 Survey of Morbidity and Treatment in General Practice. An ongoing survey of general practice activity commenced in April 1998, undertaken by the General Practice Statistics and Classification Unit at the University of Sydney, in collaboration with the Australian Institute of Health and Welfare. The new survey is built on the experience of the 1990–91 Australian Morbidity and Treatment Survey conducted by the Family Medicine Research Unit at the University and will fill a major gap in national health statistics, enabling future disease costing analyses to use up-to-date information on the patterns of morbidity managed by general practitioners and the role of general practitioners in primary health care provision.

The current methodology estimates disease costs associated with medical specialist services from referrals and tests recorded in the survey of general practitioners. It would clearly be preferable and more accurate to directly survey specialist practice patterns, perhaps as part of an ongoing survey of morbidity and treatment patterns in private medical practice. Additionally, utilisation patterns for drugs, pathology and imaging services are estimated from the survey data for general practitioners. Data for medical specialists would enable the differential prescription and test-ordering patterns of medical specialists to be taken into account.

The current methodology assumes that all specialist medical services for a particular type of specialist have the same average cost. This is probably not a major problem for disease-specific specialties but does seriously limit the accuracy of disease cost estimates for services provided by specialties such as physicians, surgeons, paediatricians, diagnostic imaging and pathology. In the current methodology, for example, this means that all pathology tests (apart from Pap smear and PSA tests) are assumed to have the same average cost.

It may be possible to make substantially greater use of data for individual Medicare Benefits Schedule items, as was done in this report for pathology screening tests for cervical and prostate cancer where 1993–94 Medicare data were used. It would then be necessary to take careful steps to ensure the consistency of the medical practitioner survey data with the Medicare utilisation data.

Cost estimates for hospital inpatient services are based on full national casemix information for 1993–94 and national diagnosis-related group (DRG) cost weights and are considered to be the most reliable of all the health sectors. The major limitation is the accuracy of the estimated inpatient fractions for each State and Territory (the proportion of total hospital costs that are considered to relate to inpatient services).

Hospital non-inpatient costs were estimated in this report using self-reported data from the 1989–90 National Health Survey and assuming that all non-inpatient services had the same average cost. There are currently a number of projects underway to develop 'DRG's for non-inpatient services and to estimate average costs for these service categories. Some data on non-inpatient utilisation patterns are also available in a number of States and Territories. Such data, together with cost weights, could be used to substantially improve the costing of non-inpatient service.

Community and public health programs in general are not yet included in the estimates of disease costs due to the difficulties in obtaining comprehensive casemix data for these health sectors. A recent attempt by the Centre for Health Program Evaluation and the AIHW to estimate expenditure on public health programs by broad disease/risk factor areas was able only to quantify Commonwealth expenditure. Estimates of the costs for the breast and cervical cancer national screening programs and for lung and skin cancer prevention programs have been included for this report, but the lack of information on other public health programs severely limits the usefulness and interpretation of the prevention cost estimates provided here. Analysis of national expenditure on public health programs at Commonwealth, State and local level is a very high priority for improving the reliability and usefulness of direct cost estimates for cancer.

AIHW is currently collaborating in the development of a minimum dataset for community health services and it may be possible already to obtain some indicative casemix and costing data for community health services, even at a broad level.

Future analyses of health system costs for cancer should also attempt to include medical aids and appliances and ambulance services. Previous attempts by AIHW to obtain casemix data for ambulance services did not yield usable information to apportion patient transport costs to disease. It is not known whether there is any information on the disease distribution of medical aids and appliances expenditure.

Conclusion

Cancer costs the Australian community around $2 billion per year in direct health system costs, of which more than 80% are treatment costs. It is likely that additional funding of proven cost-effective prevention strategies will result in an overall reduction in total direct costs of cancer in the longer term. This will be addressed in other reports of the National Cancer Control Strategy.

The aim of this report has been to provide the best possible estimates of the health system resources directed at the prevention and treatment of cancer to assist in understanding the allocation of resources among the population, across different health sectors, and for different cancer. Such information will assist in considering a variety of equity, access and utilisation issues in relation to the use of scarce health care resources. For example, the health system cost information presented here could be used to develop broad order estimates of the potential health care cost offsets to the cost of the prevention activities.

It must be emphasised that this report has not attempted to estimate the total economic impact of cancer in Australia. As well as the health system costs documented here, there are substantial costs relating to absenteeism, lost productivity, the burden on carers and family, and lost quality and quantity of life.

As the pressure on health care funding continues to rise, there will be increasing interest in understanding the costs associated with specific diseases and in attempting to evaluate the overall cost-effectiveness of health system interventions. Future disease costing work should take into account the opportunities identified above to improve the data and methodology used for disease costing in Australia.