

Appendix A: Classification of health expenditure by cancer site

Diseases and injury are classified using the Ninth Revision of the World Health Organisation's International Classification of Disease (ICD-9). The broad categories of disease used in Table 1 to compare the health system costs of cancer with other diseases and injury are defined by the chapters of ICD-9. There are also general categories for fertility control, reproduction and development, cosmetic surgery, general health examination and screening, and treatment and aftercare (disease unspecified) which are grouped together in a final category 'Other'.

The term cancer is generally used to refer to invasive (malignant) neoplasms and excludes in-situ carcinomas, benign neoplasms and neoplasms of uncertain behaviour. The most common cancer in Australia is non-melanocytic skin cancer. Incidence data for this cancer are not collected on a routine basis by cancer registries and are often excluded from statistics relating to 'cancers'.

Since much of the cost associated with screening and treatment of benign and in-situ neoplasms is associated with excluding or preventing malignancy, cancer sites are defined to include malignant neoplasms, benign neoplasms, in-situ neoplasms and neoplasms of uncertain behaviour (see Table A.1). Data on new cases includes incident cases of malignant neoplasm only, as reported to the National Cancer Statistics Clearing House, AIHW. New cases of non-melanocytic skin cancer are estimated from unpublished data on the incidence of treated, histologically confirmed non-melanocytic skin cancer provided by the Victorian Anti-Cancer Council. Appendix C provides estimates by site of treatment costs for malignant neoplasms only, as well as total treatment and prevention costs for neoplasms of all types.

The categories used for costing neoplasms by site and type are defined in Table A.1. Where other classifications of disease are encountered (such as the International Classification of Primary Care (ICPC)), these are mapped across to the ICD-9 codes (see Mathers et al. 1998b for details of these mappings). Costs are split between two categories for each type of neoplasm: treatment and prevention. For some cancers, screening and diagnostic tests may not be specific to a particular site, or indeed to cancer as opposed to other diseases. This problem arises because screening and diagnostic tests were not linked to diagnoses in the 1990-91 Survey of Morbidity and Treatment in General Practice in Australia. Where there were multiple diagnoses, costs for pathology and imaging tests were attributed equally across all diagnoses. Additionally, the ICPC codes do not generally distinguish between preventive and diagnostic screening. As a result, some cancer prevention activities in primary care will be costed in the general prevention category and the general treatment category (in the 'Other' category of Table 1) and will not be included in the cancer costs reported for specific sites or for all cancers.

There is only a single ICPC code for 'skin cancer' and it is not possible to distinguish melanoma from NMSC in the GP survey data. Within each age-sex group, medical, pharmaceutical and allied health costs were apportioned to melanoma and NMSC in proportion to estimated incident cases. An estimated 20% of melanomas are removed by general practitioners rather than specialists, compared with 60% of NMSCs (Robert Burton, personal communication). These estimates were used to separately weight the attributions between melanoma and NMSC categories for general practitioner and for specialist costs.

Table A.1: Classification of cancer sites in terms of ICD-9 codes for neoplasms

| Cancer site | Malignant neoplasms | Benign, in-situ and of uncertain behaviour | Prevention activities |
|----------------------------------|---|--|-----------------------|
| Head and neck ^(a) | 140–149 | 210, 212.0, 230.0, 235.0, 235.1 | V76.42 |
| Oesophagus | 150 | 211.0, 230.1, 235.5(p), 239.0(p) | |
| Stomach | 151 | 211.1, 230.2, 235.2, 239.0(p) | |
| Colorectal ^(b) | 153–154 | 211.3, 211.4, 230.3–230.6, 239.0(p) | V76.41 |
| Liver | 155 | 211.5, 230.8, 235.3 | |
| Pancreas | 157 | 211.6–211.7, 235.5(p), 239.0(p) | |
| Lung ^(c) | 162 | 212.2, 212.3, 231.1, 231.2, 235.7, 239.1 | V16.1, V76.0 |
| Melanoma | 172 | 216 (q), 232 (q), 238.2 (q) | V76.43 |
| Non-melanoma skin ^(d) | 173 | 216 (q), 232 (q), 238.2 (q) | |
| Breast ^(e) | 174 | 217(p), 233.0, 238.3, 239.3 | V16.3, V76.1 |
| Cervix | 180 | 219.0, 219.9, 233.1, 233.2, 236.0 (50%) | V76.2 |
| Uterus | 179, 182 | 218, 219.1–219.8, 236.0 (50%) | |
| Ovary | 183 | 220, 233.3, 236.2 | |
| Prostate | 185 | 222.2, 233.4, 236.5 | |
| Bladder | 188 | 223.2, 223.3, 233.7, 236.7, 236.99, 239.4 | V76.3 |
| Kidney | 189.0, 189.1 | 223.0–223.1, 236.91 | V16.5 |
| Brain and CNS ^(f) | 191–192 | 225, 237.5, 239.6 | |
| Lymphoma ^(g) | 200–203 | 228, 229, 238.5–238.6 | V16.7 |
| Leukemia | 204–208 | 238.7 | V16.6 |
| Other neoplasms | Balance 140–208 | Balance 210–239 | Balance V16, V76 |
| Unspecified sites ^(h) | V58.0, V58.1, V66.1, V66.2, V67.1, V67.2, V71.1, V10, V15.3 | | V16.9, V76.9 |

Note: (a) Includes neoplasms of the lip, oral cavity and pharynx.

(b) Includes neoplasms of the colon and rectum (bowel).

(c) Includes neoplasms of the trachea, bronchus and lung.

(d) Includes all neoplasms of the skin apart from melanocytic neoplasms.

(e) Includes female breast cancer only. Male breast cancer is included in the category 'Other neoplasms'.

(f) Includes all neoplasms of the brain and nervous system.

(g) Includes Hodgkin's disease, non-Hodgkin's lymphoma and multiple myeloma.

(h) Costs in this category are distributed pro-rata across the site-specific categories for this report.

(p) Codes that fall across several categories are distributed in proportion to costs for malignant neoplasms for those sites.

(q) Costs apportioned to melanocytic and non-melanocytic neoplasms in proportion to the costs for malignant neoplasms.