NHS SCOTLAND

# Cancer in Scotland: Sustaining Change

Cancer Incidence Projections for Scotland (2001-2020)

An Aid to Planning Cancer Services

SCOTTISH EXECUTIVE

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Update of Cancer Scenarios

The projections based on incidence trends observed during 1961-2000 and Government Actuary Department 2002-based population projections for Scotland



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# FOREWORD

*Cancer Scenarios* published in 2001 mapped out how cancer in all its forms might affect Scots over the subsequent decade and provided a foundation for forward planning. The projections indicated a likely continuing increasing trend in incidence over the next 10-15 years.

It is important to check these projections every few years using up-to-date information as it becomes available. This document reviews those cancer projections and extends them to 2020. It is based on the Government Actuary Department population projections and the most recent cancer incidence figures up to 2000. Although incidence is largely on track compared with the projections in 2001 the underlying trends have changed considerably for some cancers.

We hope that NHSScotland will find this update as useful as the original *Cancer Scenarios* in planning cancer services in the longer term.

**E M Armstrong**
Chief Medical Officer

## INTRODUCTION AND SUMMARY

It is predicted that there will be over 168,000 cases of cancer diagnosed in adults in Scotland during 2016-20 (around 33,700 cases per annum) compared to around 26,400 cases per annum actually recorded during 1996-2000. Most types of cancer are predicted to increase in numbers of new cases. Notable exceptions are stomach, lung and cervical cancers, all of which are predicted to decline. Overall, it is predicted that there will be a 28% increase in the number of people diagnosed with cancer over the next 20 years (approximately 1.4% per year).

An increase of around 650 cases a year is expected in the under 75s and 1,200 in those aged 75 and over. Most of the predicted increase is attributed to a growing number of elderly people in the population. However, the individual risk of some types of cancer is also predicted to increase.

| Cancer (ICD[1] code) | N diagnosed 1996-2000 | N predicted 2016-2020 | Difference (N) | Difference (%) |
|---|---|---|---|---|
| Head and neck (C00-C14, C30-C32) | 4,999 | 6,571 | 1,572 | 31.4 |
| Oesophagus (C15) | 3,907 | 6,420 | 2,513 | 64.3 |
| Stomach (C16) | 4,824 | 3,701 | -1,123 | -23.3 |
| Colorectal (C18-C20) | 17,310 | 24,643 | 7,333 | 42.4 |
| Lung (C33-C34) | 23,354 | 20,747 | -2,607 | -11.2 |
| Pancreas (C25) | 3,165 | 4,101 | 936 | 29.6 |
| Melanoma of skin (C43) | 3,312 | 5,727 | 2,415 | 72.9 |
| Breast (C50) | 17,752 | 23,697 | 5,945 | 33.5 |
| Cervix (C53) | 1,737 | 994 | -743 | -42.8 |
| Corpus uteri (C54) | 2,204 | 2,944 | 740 | 33.6 |
| Ovary (C56) | 3,174 | 4,298 | 1,124 | 35.4 |
| Prostate (C61) | 10,062 | 15,405 | 5,343 | 53.1 |
| Testis (C62) | 966 | 1,304 | 338 | 35.0 |
| Kidney (C64) | 2,727 | 4,708 | 1,981 | 72.7 |
| Bladder, all (C67, D09.0, D41.4) | 7,538 | 9,781 | 2,243 | 29.8 |
| Brain, meninges and CNS (C70-C72) | 1,790 | 2,210 | 420 | 23.4 |
| Hodgkin's disease (C81) | 628 | 691 | 63 | 10.1 |
| Non-Hodgkin's lymphoma (C82-C85) | 4,156 | 7,124 | 2,968 | 71.4 |
| Leukaemia (C91-C95) | 2,996 | 4,325 | 1,329 | 44.4 |
| Other and unspecified | 15,606 | 19,331 | 3,725 | 23.9 |
| **Total** | **132,207** | **168,724** | **36,517** | **27.6** |

Note 1: International Classification of Diseases, Tenth Edition

## MATERIALS

Data from the Scottish cancer registry (extracted April 2004) were used to examine trends in historical cancer incidence rates (1961-2000). Population estimates (1961-2001) and 2002-based population projections (2002-2020) were obtained from the General Register Office (Scotland). All malignancies excluding non-melanoma skin cancer (C00-C96 excluding C44) were considered. The most common 19 malignancies were considered separately (covering 90% of all malignancies), and the remainder combined into a category labelled "Other and unspecified". Only persons aged 35 or more years were included in the analyses, with the exception of melanoma skin cancer (ages 20+), cervical cancer (25+), testicular cancer (20+) and Hodgkin's disease (15+). Due to a recent (late 1990's) change in the coding of bladder cancers it was necessary to combine malignant, *in situ* and uncertain behaviour bladder tumours.

## METHODOLOGY

Generalised linear models (so called age-period-cohort or APC models (Clayton and Schifflers, 1987)) were fitted to the observed data. The following models were considered: age effect only; age effect+linear period effect or 'drift'; age+period effects; age+cohort effects; full age+period+cohort effects model. The models were analysed for each site and gender and the best (most parsimonious) model was then used to make predictions for the future using the GRO(S) population projections.

The models were fitted using five year age groups (35-39, …., 80-84, 85+) and five year time periods (quinquennia: 1961-65, ….., 1996-2000). Overlapping birth cohorts were then calculated as based on the age groups and time periods. Earlier age groups were considered for testes, uterine cervix, malignant melanoma and Hodgkin's disease. The modelling was performed using SAS Release 8.02.

In applying the best model to the future time periods an assumption was made that the age effects would remain the same in the future, so that the fitted age parameters could be used for the projection. Future period and cohort effect parameters were considered in six different ways (these are fully described in the *Cancer Scenarios* report (Scottish Executive Health Department, 2001)). Three of these allowed drift, the linear trend by period or cohort, to continue into the future. The other methods did not allow period and cohort trends to continue unchanged into the future.

As noted in *Cancer Scenarios*, the limitations of the procedure used here must be stressed. Statistical predictions for values outside the range of observed data used in a model should always be interpreted with caution. There are theoretical reasons why the predictions may be fallible and, in addition, changes may occur in the future which are independent of the historical data and so cannot be identified in the statistical analyses. These include changes in the exposure of the population to risk factors either in the new time periods or in birth cohorts who were too young to be included in the analyses.

## RESULTS

Overall, it is predicted that there will be over 168,000 cases of cancer diagnosed during 2016-20 (around 33,000 cases per year) (see Table 1 and Figure 1). An increase of around 650 cases a year is expected in the under 75's and around 1,200 cases a year in those aged 75 and over (see Tables 2a and 2b). Most of predicted increase is a result of a growing elderly population (see Figure 2).

### Table 1: Predicted numbers of cases 2001-2020 by cancer site

| Cancer | 2001-05 | 2006-10 | 2011-15 | 2016-20 |
|---|---|---|---|---|
| Head and neck (C00-C14, C30-C32) | 5,455 | 5,921 | 6,246 | 6,571 |
| Oesophagus (C15) | 4,422 | 4,990 | 5,630 | 6,420 |
| Stomach (C16) | 4,471 | 4,105 | 3,931 | 3,701 |
| Colorectal (C18-C20) | 18,517 | 20,222 | 22,336 | 24,643 |
| Lung (C33-C34) | 22,672 | 21,828 | 21,122 | 20,747 |
| Pancreas (C25) | 3,332 | 3,568 | 3,805 | 4,101 |
| Melanoma of skin (C43) | 3,804 | 4,318 | 5,027 | 5,727 |
| Breast (C50)[1] | 19,142 | 20,612 | 21,902 | 23,697 |
| Cervix (C53) | 1,541 | 1,349 | 1,169 | 994 |
| Corpus uteri (C54) | 2,346 | 2,500 | 2,710 | 2,944 |
| Ovary (C56) | 3,453 | 3,724 | 4,013 | 4,298 |
| Prostate (C61) | 10,478 | 11,720 | 13,581 | 15,405 |
| Testis (C62) | 1,064 | 1,143 | 1,225 | 1,304 |
| Kidney (C64) | 3,010 | 3,600 | 4,112 | 4,708 |
| Bladder, all (C67, D09.0, D41.4) | 8,124 | 8,632 | 9,196 | 9,781 |
| Brain, meninges and CNS (C70-C72) | 1,791 | 1,944 | 2,065 | 2,210 |
| Hodgkin's disease (C81) | 655 | 667 | 671 | 691 |
| Non-Hodgkin's lymphoma (C82-C85) | 4,768 | 5,457 | 6,249 | 7,124 |
| Leukaemia (C91-C95) | 3,296 | 3,618 | 3,956 | 4,325 |
| Other and unspecified | 16,380 | 17,277 | 18,239 | 19,331 |
| **Total** | **138,723** | **147,193** | **157,185** | **168,724** |

[1] This does not take into account a short to medium term increase in breast cancer cases expected as a result of extending the Scottish breast screening programme upper age range from 64 to 70.

## Table 2a: Observed and predicted numbers of cases by cancer site, ages <75

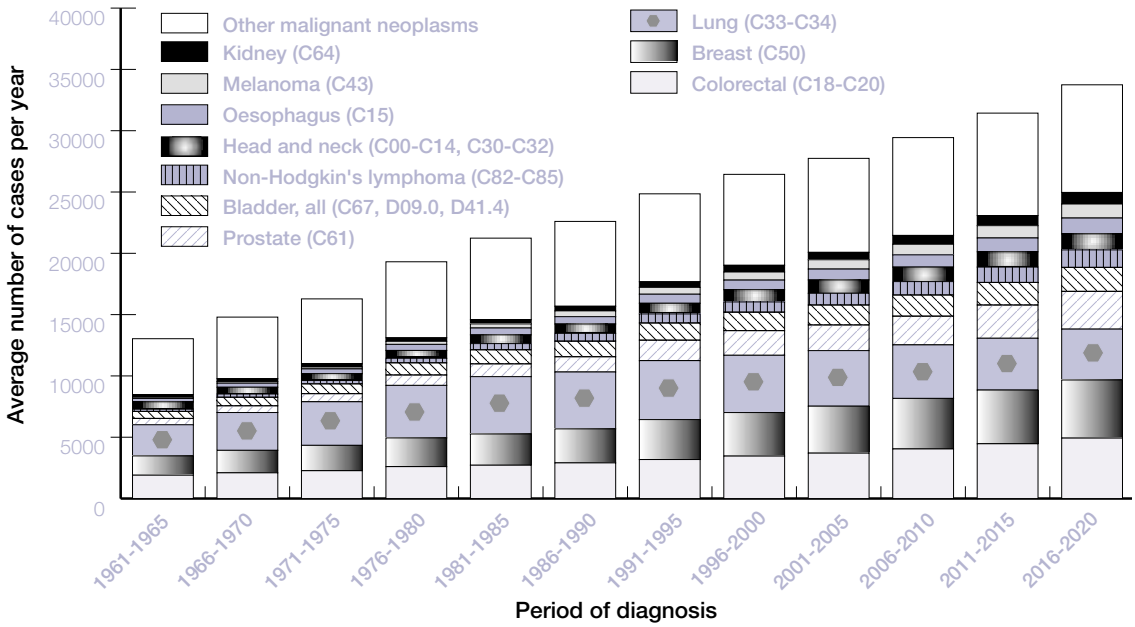
| Cancer | 1991-95 | 1996-00 | 2001-05 | 2006-10 | 2011-15 | 2016-20 |
|---|---|---|---|---|---|---|
| Head and neck (C00-C14, C30-C32) | 3,408 | 3,922 | 4,328 | 4,597 | 4,752 | 4,886 |
| Oesophagus (C15) | 2,322 | 2,415 | 2,677 | 2,974 | 3,303 | 3,705 |
| Stomach (C16) | 3,108 | 2,776 | 2,427 | 2,168 | 2,058 | 1,962 |
| Colorectal (C18-C20) | 9,582 | 10,250 | 10,365 | 10,953 | 11,574 | 12,472 |
| Lung (C33-C34) | 16,407 | 15,216 | 13,202 | 11,982 | 11,376 | 11,166 |
| Pancreas (C25) | 1,755 | 1,797 | 1,867 | 1,940 | 2,025 | 2,033 |
| Melanoma (C43) | 2,263 | 2,627 | 3,002 | 3,334 | 3,829 | 4,301 |
| Breast (C50)[1] | 12,458 | 13,668 | 14,405 | 15,370 | 16,019 | 17,031 |
| Cervix (C53) | 1,746 | 1,496 | 1,393 | 1,250 | 1,099 | 939 |
| Corpus uteri (C54) | 1,314 | 1,666 | 1,729 | 1,800 | 1,894 | 2,001 |
| Ovary (C56) | 2,192 | 2,331 | 2,479 | 2,643 | 2,773 | 2,954 |
| Prostate (C61) | 4,303 | 5,563 | 5,535 | 6,288 | 7,367 | 8,099 |
| Testis (C62) | 852 | 949 | 1,050 | 1,126 | 1,198 | 1,269 |
| Kidney (C64) | 1,658 | 1,970 | 2,149 | 2,538 | 2,884 | 3,238 |
| Bladder, all (C67, D09.0, D41.4) | 4,472 | 4,641 | 4,641 | 4,626 | 4,634 | 4,651 |
| Brain, meninges and CNS (C70-C72) | 1,443 | 1,458 | 1,487 | 1,584 | 1,647 | 1,727 |
| Hodgkin's disease (C81) | 611 | 563 | 595 | 608 | 608 | 622 |
| Non-Hodgkin's lymphoma (C82-C85) | 2,635 | 2,836 | 3,258 | 3,714 | 4,126 | 4,442 |
| Leukaemia (C91-C95) | 1,776 | 1,902 | 1,974 | 2,084 | 2,184 | 2,252 |
| Other and unspecified | 9,076 | 9,080 | 9,172 | 9,519 | 9,919 | 10,362 |
| **Total** | **83,381** | **87,126** | **87,734** | **91,097** | **95,269** | **100,111** |

[1] This does not take into account a short to medium term increase in breast cancer cases expected as a result of extending the Scottish breast screening programme upper age range from 64 to 70.

## Table 2b: Observed and predicted numbers of cases by cancer site, ages 75+

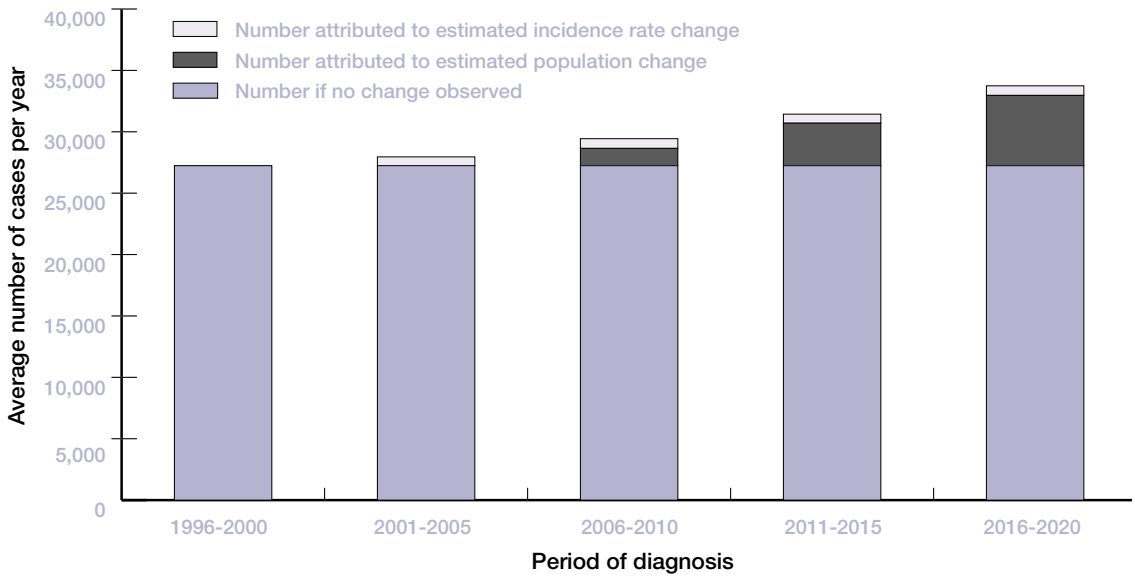
| Cancer | 1991-95 | 1996-00 | 2001-05 | 2006-10 | 2011-15 | 2016-20 |
|---|---|---|---|---|---|---|
| Head and neck (C00-C14, C30-C32) | 930 | 1,077 | 1,128 | 1,324 | 1,495 | 1,685 |
| Oesophagus (C15) | 1,369 | 1,492 | 1,745 | 2,016 | 2,327 | 2,715 |
| Stomach (C16) | 2,170 | 2,048 | 2,044 | 1,937 | 1,873 | 1,739 |
| Colorectal (C18-C20) | 6,316 | 7,060 | 8,153 | 9,269 | 10,762 | 12,171 |
| Lung (C33-C34) | 7,639 | 8,138 | 9,471 | 9,846 | 9,746 | 9,582 |
| Pancreas (C25) | 1,228 | 1,368 | 1,466 | 1,628 | 1,780 | 2,068 |
| Melanoma (C43) | 531 | 685 | 802 | 984 | 1,198 | 1,426 |
| Breast (C50) | 3,839 | 4,084 | 4,737 | 5,242 | 5,883 | 6,665 |
| Cervix (C53) | 219 | 241 | 148 | 99 | 70 | 55 |
| Corpus uteri (C54) | 407 | 538 | 616 | 699 | 816 | 943 |
| Ovary (C56) | 716 | 843 | 974 | 1,081 | 1,240 | 1,344 |
| Prostate (C61) | 4,049 | 4,499 | 4,943 | 5,432 | 6,214 | 7,307 |
| Testis (C62) | 11 | 17 | 14 | 18 | 26 | 36 |
| Kidney (C64) | 649 | 757 | 861 | 1,062 | 1,229 | 1,470 |
| Bladder, all (C67, D09.0, D41.4) | 2,532 | 2,897 | 3,484 | 4,006 | 4,562 | 5,130 |
| Brain, meninges and CNS (C70-C72) | 220 | 332 | 304 | 361 | 418 | 482 |
| Hodgkin's disease (C81) | 61 | 65 | 59 | 59 | 63 | 69 |
| Non-Hodgkin's lymphoma (C82-C85) | 1,056 | 1,320 | 1,510 | 1,742 | 2,123 | 2,682 |
| Leukaemia (C91-C95) | 1,008 | 1,094 | 1,323 | 1,534 | 1,772 | 2,074 |
| Other and unspecified | 5,930 | 6,526 | 7,208 | 7,758 | 8,320 | 8,969 |
| **Total** | **40,880** | **45,081** | **50,989** | **56,096** | **61,917** | **68,613** |

## Figure 1: Observed (1961-2000) and projected (2001-2020) incidence estimates for the most common[1] cancers




[1] Most common 10 cancers according to the predictions for 2016-2020

## Figure 2: Impact of population effect[1] and incidence effect[2] on the projected (2001-2020) incidence estimates




[1] The additional cancer cases expected if the incidence rates observed during 1996-2000 remained constant in the future and the only influence on the numbers was the predicted change in population size.

[2] The additional cancer cases expected due to a predicted increase in cancer incidence rates in the future (note: this figure is the summation of cancers where incidence is expected to increase plus those where incidence is expected to decrease) and is independent of population change.

## DISCUSSION

The numbers of new cases of cancer seen in a population are products of individual risks of developing cancer and the numbers of individuals actually at risk. The present analysis suggests that the dominating feature determining cancer incidence in Scotland in the next twenty years will be growing numbers of older people. Although an individuals' risk will increase for many cancers, there are notable exceptions: lung cancer risk is continuing to decline in men and is expected to begin to decline very soon in women; cervical cancer incidence is expected to fall further as screening and potentially other preventive measures become more effective; finally, the reduction in risk in stomach cancer is part of a long-term trend which has been seen in many developed countries.

The projections presented in this report are clearly of practical significance to the planning of cancer services in Scotland. How robust are the data? Appendix A describes a validation exercise in which the methodology was applied to historical data for 1961-1990 in order to estimate incidence for 1991-2000. The latter was then compared to the incidence actually observed for this period. Overall, the results were encouraging for all cancers in aggregate: the estimates were within 2% of the observed data. However, for some of the less common cancers the estimates and observed incidence differed by 30% or more. This tended to be due to interventions which occurred after the period of the observed data used in the model. For example, improvements in the cervical screening programme in the early 1990s. For the more common cancers such as breast, lung and colon-rectum, the results are more satisfactory. Therefore we believe that use of the projections in aggregate and for the major cancers is suitable for planning purposes, but would urge caution in use of data for less common cancers in isolation.

Advances in the methodology for calculating projections have been made since the preparation of the *Cancer Scenarios* report in 2000. A similar project was undertaken in New Zealand (New Zealand Ministry of Health, 2002). This suggested that the APC models used in the analyses presented here can give projections that are too high for cancers where the rate is increasing relatively fast. This will be investigated before the next set of projections are published. Specifically, the New Zealand approach involved use of:

- Generalised linear models (APC models as used in this report; Clayton and Schliffers, 1987) with drift applied using Osmond technique (Osmond, 1985)
- Non-parametric generalised addative models (GAM) (Wahba, 1990; Hastie and Tibshirani, 1990)
- Non-linear models (Dyba and Hakulinen, 2000)

The projections would then be based on all the models passing the initial testing phase using a *model averaging* process. This would comprise of the mean of the modelled number of cases of the models selected and fitted for each cancer site. In the New Zealand report this average gave a better fit than any of the component models in their empirical testing.

## APPENDIX A: EMPIRICAL TESTING

To test the validity of the chosen models they were fitted using data from 1961-1990 and the projected numbers of cases were then estimated for 1991-2000 using the same projection method as used for the main analysis applied to the most parsimonious model. The differences between the observed and predicted values (see Table A1) show that overall the estimate was very close (difference 1,588 cases; 1.2% higher than was actually observed), but for individual cancer sites the accuracy of the predictions did vary considerably.

The prediction underestimated the true number of cases by more than 20% for cancers of rectum in males, melanoma in females, prostate and brain in males. Male rectal cancers and prostate cancers saw a rise in the 1990s that could not have been predicted beforehand. The models performed poorly at predicting the trends for females with melanoma – a very conservative model (predicting 1,533 cases) being chosen over a highly escalating model (2,734 cases). A similar situation was observed for males with brain cancer. Due to this, the younger age groups were modelled differently in the main analyses.

The prediction overestimated the true number of cases by more than 20% for cancers of cervix, melanoma in males, NHL, leukaemia, and other and unspecified tumours in males. The decrease in cervical cancers was a result of service re-organisation that could not have been predicted beforehand. The rate of increase in melanoma in males in the 1980s did not continue in the 1990s and this also could not have been predicted. Trends in the other and unspecified tumours are difficult to comment on because they comprise of a mixed group of tumours. The models performed poorly at predicting the trends for NHL and leukaemia. Again, as a result of this, the younger age groups were modelled differently in the main analyses.

## Table A1: Accuracy of the predicted compared to observed estimates for 1996-2000; prediction based on 1961-1990 trends and known population estimates

| Cancer group | Sex | Observed Cases | Minimum Difference | | |
|---|---|---|---|---|---|
| | | | Model | N | % |
| Head and Neck | M | 3,441 | D2 | 103 | 3.0% |
| | F | 1,492 | D1 | -178 | 11.9% |
| Oesophagus | M | 2,315 | D1 | 155 | 6.7% |
| | F | 1,586 | D1 | 49 | 3.1% |
| Stomach | M | 2,830 | D1 | 303 | 10.7% |
| | F | 1,974 | ND3 | -178 | 9.0% |
| Colon | M | 5,605 | D2 | -360 | 6.4% |
| | F | 5,728 | D1 | 63 | 1.1% |
| Rectum | M | 3,478 | D1 | -717 | 20.6% |
| | F | 2,417 | D3 | -20 | 0.8% |
| Lung | M | 13,442 | D2 | 351 | 2.6% |
| | F | 9,878 | D2 | -118 | 1.2% |
| Pancreas | M | 1,487 | D2 | 55 | 3.7% |
| | F | 1,666 | D3 | -220 | 13.2% |
| Melanoma of skin | M | 1,367 | D2 | 399 | 29.2% |
| | F | 1,912 | ND1 | -379 | 19.8% |
| Breast | F | 17,392 | D2 | 310 | 1.8% |
| Cervix | F | 1,709 | D3 | 831 | 48.6% |
| Corpus uteri | F | 2,194 | ND1 | -332 | 15.2% |
| Ovary | F | 3,045 | D1 | 84 | 2.8% |
| Prostate | M | 10,061 | ND1 | -1,890 | 18.8% |
| Testis | M | 948 | ND2 | -1 | 0.1% |
| Kidney | M | 1,603 | D1 | -175 | 10.9% |
| | F | 1,104 | D1 | -124 | 11.3% |
| Bladder (invasive, insitu and uncertain behaviour) | M | 5,193 | D1 | 308 | 5.9% |
| | F | 2,298 | D1 | 108 | 4.7% |
| Brain, meninges and CNS | M | 878 | D1 | -282 | 32.1% |
| | F | 729 | D1 | -82 | 11.2% |
| Hodgkin's disease | M | 340 | D1 | 15 | 4.4% |
| | F | 288 | D1 | 18 | 6.3% |
| NHL | M | 1,899 | ND1 | 430 | 22.6% |
| | F | 2,083 | D1 | 428 | 20.6% |
| Leukaemia | M | 1,534 | D1 | 303 | 19.8% |
| | F | 1,298 | D1 | 308 | 23.8% |
| Other and Unspecified | M | 7,242 | D1 | 1,625 | 22.4% |
| | F | 7,961 | D1 | 400 | 5.0% |
| **Total** | | **130,417** | | **1,588** | **1.2%** |

Note: Negative values denote underestimates

## APPENDIX B: COMPARISON OF RESULTS WITH THOSE PREVIOUSLY PUBLISHED IN *CANCER SCENARIOS*

The estimates from *Cancer Scenarios* (old) are compared to those presented here (new) in Table A2.

### Table A2: Old and new estimates of number of cases expected in 2010-14 (5 years combined)

| Cancer | Old estimates | New estimates | Difference (N) | Difference (%) |
|---|---|---|---|---|
| Head and Neck | 6,738 | 6,246 | -492 | -8 |
| Oesophagus | 6,223 | 5,630 | -593 | -11 |
| Stomach | 2,903 | 3,931 | 1,028 | 26 |
| Colorectal | 23,254 | 22,336 | -918 | -4 |
| Lung | 22,577 | 21,122 | -1,455 | -7 |
| Pancreas | 3,004 | 3,805 | 802 | 21 |
| Melanoma of skin | 5,552 | 5,027 | -525 | -10 |
| Breast | 23,377 | 21,902 | -1,474 | -7 |
| Cervix | 1,958 | 1,169 | -789 | -68 |
| Corpus Uteri | 2,051 | 2,710 | 658 | 24 |
| Ovary | 3,317 | 4,013 | 696 | 17 |
| Prostate | 21,516 | 13,581 | -7,935 | -58 |
| Testis | 1,361 | 1,225 | -136 | -11 |
| Kidney | 4,167 | 4,112 | -55 | -1 |
| Bladder | 9,075 | 9,196 | 121 | 1 |
| Brain | 1,974 | 2,065 | 91 | 4 |
| Hodgkin's disease | 671 | 671 | 0 | 0 |
| NHL | 7,928 | 6,249 | -1,679 | -27 |
| Leukaemia | 3,752 | 3,956 | 204 | 5 |
| Other and unspecified | 17,487 | 18,239 | 751 | 4 |
| **Total** | **168,885** | **157,185** | **-11,699** | **-7** |

There are two aspects that can account for differences in these estimates compared to those in Cancer Scenarios. First, the population predictions have changed and second, the addition of 5 years of observed data from the cancer registry may impact on the predicted incidence trends.

1) *Population predictions*

The population projections provided by the Government Actuary Department have changed substantially between those based on Scottish population estimates for 1996 (used for Cancer Scenarios) and their most recent projections, which include information from the 2001 census and based on the Scottish population in 2002 (see Table A3). The change that will have the largest impact on the cancer predictions is the fact that many more elderly people (aged 75+) are now expected in the Scottish population by 2010-14 (8% more females and 14% more males compared to the 1996-based predictions).

### Table A3: Changes in the population projections: 2002-based projections compared to 1996-based projections (which were used in the Cancer Scenarios report)

| Sex | Age | Difference (ratio) b2002/b1996 | | | Difference (N) b2002-b1996 | | |
|---|---|---|---|---|---|---|---|
| | | 2000-04 | 2005-09 | 2010-14 | 2000-04 | 2005-09 | 2010-14 |
| F | <35 | 0.99 | 0.98 | 0.97 | -79,644 | -124,717 | -122,823 |
| | 35-59 | 1.01 | 1.01 | 1.00 | 34,269 | 31,876 | 17,289 |
| | 60-74 | 1.02 | 1.03 | 1.03 | 39,515 | 52,066 | 47,676 |
| | 75+ | 1.03 | 1.05 | 1.08 | 32,269 | 57,658 | 74,504 |
| M | <35 | 0.96 | 0.95 | 0.95 | -247,260 | -247,536 | -203,913 |
| | 35-59 | 0.98 | 0.96 | 0.93 | -81,817 | -197,813 | -238,928 |
| | 60-74 | 1.02 | 1.03 | 1.03 | 37,058 | 54,218 | 47,272 |
| | 75+ | 1.04 | 1.08 | 1.14 | 22,595 | 53,690 | 77,519 |

Source of population projections: Government Actuary Department

2) Incidence trends

The original estimates were based on incidence trends up to 1995, whereas the new estimates include trends up to 2000; a further 5 years of observed data. The underlying trends have changed considerably for some cancers in the last 5 years (e.g. prostate cancer – this is known to be due to changes in diagnostic practice).

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