Briefing to inform Committee Inquiry into Cancer Services

Submitted to Public Accounts and Public Administration Committee

Public Health Wales

April 2025

Contents

1. Introduction

The purpose of this briefing paper is to inform the Public Accounts and Public Administration Committee inquiry into Cancer Services in Wales. Public Health Wales was asked to provide information on the following:

- What data is available comparing cancer mortality and survival outcomes in Wales to other UK nations and internationally – and for what is available, we would welcome a summary of comparable performance;
- What data is available on cancer stage at diagnosis to understand variation at lower super output level and below in Wales – and we would welcome a summary of what any available data shows;
- An update on the unit's work with the SAIL database to link cancer registry data to other relevant datasets to understand the impact of social and demographic factors (such as education and employment) on cancer incidence.

2. Public Health Wales

We are the National Public Health Organisation for Wales. Our purpose is working together for a healthier Wales. We help all people in Wales live longer, healthier lives. With our partners, we aim to increase healthy life expectancy, improve health and well-being, and reduce inequalities for everyone in Wales, now and for future generations.

Together, our teams work to prevent disease, protect health, provide system leadership, specialist services and public health expertise. We are the primary source of public health information, research and innovation, to help everyone in Wales live healthier lives.

By 2035, we will have achieved a healthier future for Wales. We are working towards a Wales where people live longer, healthier lives and where all people in Wales have fair and equal access to the things that lead to good health and well-being.

3. Welsh Cancer Intelligence and Surveillance Unit (WCISU)

Public Health Wales runs the Welsh Cancer Intelligence and Surveillance Unit (WCISU). WCISU collaborates and publishes with several UK-wide and international research programmes. The research programmes include both childhood and adult cancers. Annually, WCISU also publishes official statistics on cancer incidence, mortality and survival in Wales.

Cancer statistics for Wales are available through the cancer reporting tool which is regularly refreshed. Mortality data up to the end of 2024 will be published in June 2025.

4. Summary of latest mortality data

The most recent cancer mortality official statistics were published by WCISU in February 2024, covering 2002-2022. In 2022, there were 9,154 deaths from cancer, comparable to the pre-pandemic level. Cancer remains the leading cause of mortality in Wales, accounting for one quarter of all deaths in 2022 (see Annex 1) and the long-term trend of decreasing cancer mortality rate appears to have stalled since around 2015.

Lung, bowel (colorectal), prostate and female breast cancers accounted for four in ten cancer deaths in Wales in 2022, with lung cancer alone accounting for two in ten cancer deaths. The

deprivation gap between the most deprived and least deprived areas in Wales has persisted since 2002, despite slight variations over time (see Figure 1). More details by cancer type are in **Annex 2**.

Figure 1: Deprivation gap for cancer mortality between the most deprived and least deprived areas in Wales since 2002. Produced by Public Health Wales, using PHM & MYE (ONS) and WIMD (WG).

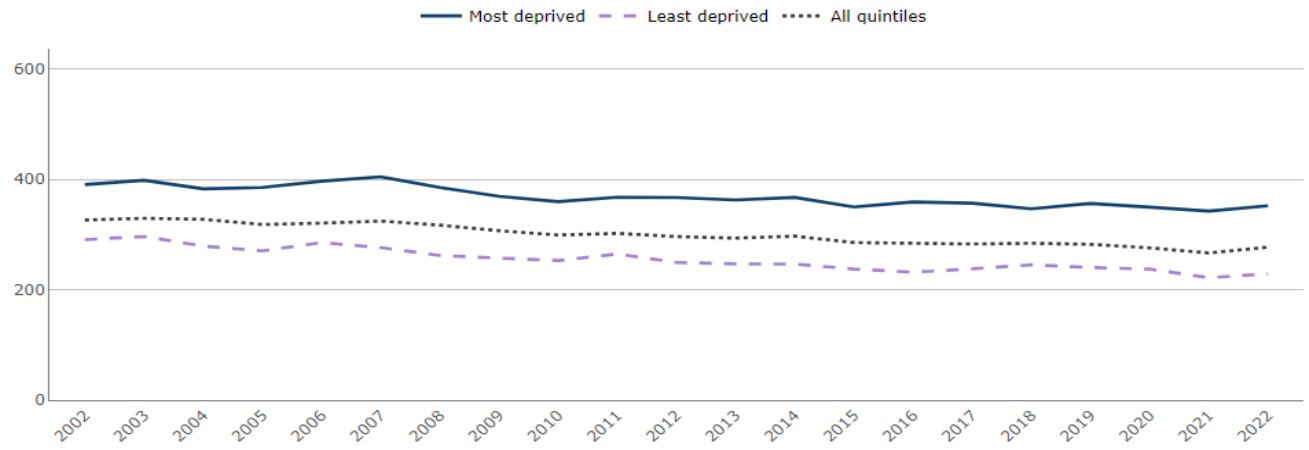


Figure 2: Cancer mortality, all cancers excluding nmsc, European age-standardised rate per 100,000 persons, all ages, by UK jurisdiction

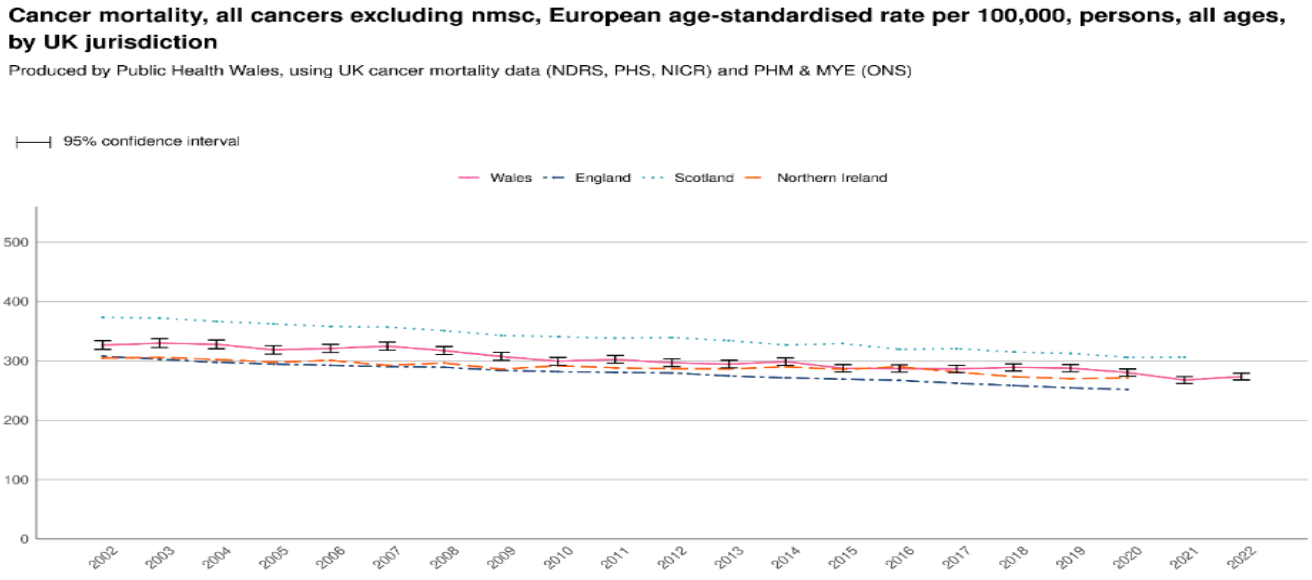


Figure 2 shows that over recent years, the highest cancer mortality rate is in Scotland, followed by Wales, Northern Ireland and then England.

5. Summary of latest cancer survival data

The latest cancer survival official statistics, published by WCISU in March 2025, show that for people in Wales diagnosed from 2017 to 2021, 63.1% survived cancer five years from diagnosis, on average (reference 1).

Long-term historic improvement in five-year net cancer survival had stagnated since the 2014-2018 diagnosis period, that is, before the Covid-19 pandemic (Annex 3). The stalling in survival improvement has also continued beyond the first year of the pandemic.

More details by cancer type are included in Annex 2.

6. Response to queries

*6.1 POINT 1. What data is available comparing **cancer mortality** and **survival outcomes** in Wales to other UK nations and internationally? – and for what is available, we would welcome a summary of comparable performance*

Cancer registries globally uniquely collect data according to the same World Health Organization (WHO) international rules, and so their data can be reliably compared. WCISU aligns with these standards.

Data from the European Cancer Information System (ECIS) dashboard (reference 8) provides cancer mortality rates in 2020 for European countries, and the whole of the UK. WCISU has additionally compared this to Wales alone.

ECIS cancer mortality in Wales, and the UK is higher than EU-27 as a whole (see Annex 4). The higher mortality rates are in eastern EU countries and Denmark, Ireland and Netherlands. Lower cancer mortality is in the rest of western, southern, northern EU, Czechia and Bulgaria.

Data from the ECIS dashboard also models cancer incidence estimates using population cancer registry data for EU-27 countries and the UK. Age-standardised cancer incidence rate estimates for 2022, for all cancer excluding NMSC, female breast, colorectal and mesothelioma, show the UK to have incidence rates that fall roughly in the middle of the EU-27 countries' rates. This suggests that Wales is close to the EU-27 average.

WCISU collaborates with the International Cancer Benchmarking Partnering (ICBP), which provides knowledge of the global picture for cancer survival. Using cancer registry data, WCISU with the ICBP researched the absolute change in one-year survival from 1995-1999 to 2010-2014 diagnosis periods for oesophageal, stomach, colon, rectum, pancreas, lung and ovary cancers (reference 3). Pre-pandemic, Wales already had relatively poor cancer outcomes compared to many other high-income countries but was improving. In general, improvement was most rapid in Denmark, Ireland and England.

The ICBP research (reference 3) also examined five-year net survival. For colorectal cancer, survival was highest in Australia, followed by Canada, Denmark, Norway, New Zealand and the UK (reference 3).

The ICBP UK analysis also examined cancer incidence, five-year net survival and mortality (reference 3) by UK jurisdiction. Wales had the highest incidence of colorectal cancer, followed by Northern Ireland, Scotland and then England. For five-year net survival, Northern Ireland had the highest rate, followed by Scotland, England, and Wales. For mortality, Scotland was highest, followed by Wales, Northern Ireland and England. Collectively this data suggests that Wales colorectal cancer mortality is high due to high incidence and comparatively lower survival.

In another international collaboration that includes WCISU, the CONCORD 3 study examined five-year age-standardised net survival for 2010-2014. Wales already had relatively poor

cancer outcomes compared to many other high-income countries (reference 4). Amongst others, CONCORD 3 researched colon cancer, lung cancer and female breast cancer. Wales had poorer survival compared to England and Scotland. Wales was in the bottom fifth of worse performing countries for these three cancers, with highest performing countries including Australia, Iceland, Switzerland, Canada and Norway.

Another international collaboration for WCISU is the Benchista project. Benchista aims to understand the variation in childhood cancer survival rates between countries, and to highlight any areas for improvement (reference 5). The work found evidence that children in the UK and Ireland with neuroblastoma, had a higher probability of diagnosis at the metastatic stage, whereas eastern and southern Europe had the lowest probabilities (reference 6).

WCISU also collaborates with the EUROCARE programme. The on-going study published data on survival and health care burden of children with retinoblastoma in Europe. Five-year survival of children aged 0-14 years, with a diagnosis of retinoblastoma from 2000 to 2013 shows Wales, Scotland, Northern Ireland, Slovenia and Norway with the highest 5-year survival (reference 7). Bulgaria, Estonia, Portugal and Latvia had the lowest 5-year survival (reference 7).

Lower survival in Wales compared to many high-income countries is likely related to (largely researched by WCISU and the ICBP programme):

- High population cancer incidence with inequalities and ageing population
- Late stage diagnosis –related to beliefs and attitudes and help seeking behaviour, access to primary care and capacity, referral patterns from primary care, capacity and access to diagnostics by primary and specialist care.
- Variation in outcomes between services and health boards in geographic areas.
- Access to treatment for each stage at diagnosis, whether late stage or not.
- Access to diagnostics in general across Wales, with inequitable access to diagnostics and treatment for older age groups (and in more deprived areas).
- Population burden of other inequalities in health and co-morbidities.
- Excess of emergency presentation diagnoses (worse outcomes, regardless of diagnosis stage).

In 2015, a UK collaboration study led by Cancer Research UK with WCISU and other UK cancer registries, researched the fraction of cancer attributable to modifiable risk factors in England, Wales, Scotland and Northern Ireland (reference 9).

The published study (reference 9) estimated that some of the new cancer cases from the pre-pandemic period could be attributable to potentially preventable risk factors (for example, smoking, weight, alcohol) by cancer type. In Wales, nearly four in ten (37.8%) of cancer cases were attributable to known risk factors. In England (37.3%) and Northern Ireland (38.0%) the figures were similar, and in Scotland it was slightly higher at 41.5%.

For the UK combined, 37.7% of cancers were attributable to known risk factors in 2015 (reference 9). Data from other countries includes 42.0% in the US in 2014 (reference 10), 40.8% in Alberta, Canada in 2012 (reference 11) and 31.9% in Australia in 2010 (reference 12).

*6.2 POINT 2: What data is available on **cancer stage at diagnosis** to understand variation at lower super output level and below in Wales – and we would welcome a summary of what any available data shows.*

Due to small numbers and to ensure robust estimates, analyses are produced at the health board level. A summary of analyses at the health board level for lung, colorectal, prostate and female breast cancer is provided below. At local authority level and below, the estimates are more susceptible to random variation. Numbers at lower super output area (LSOA) level are small and therefore are not produced. In future, we intend to analyse stage of diagnosis by Welsh Index of Multiple Deprivation (WIMD) deprivation quintiles to understand the impact of inequalities.

Figure 3: Lung Cancer, persons, all ages, 2019 - 2021

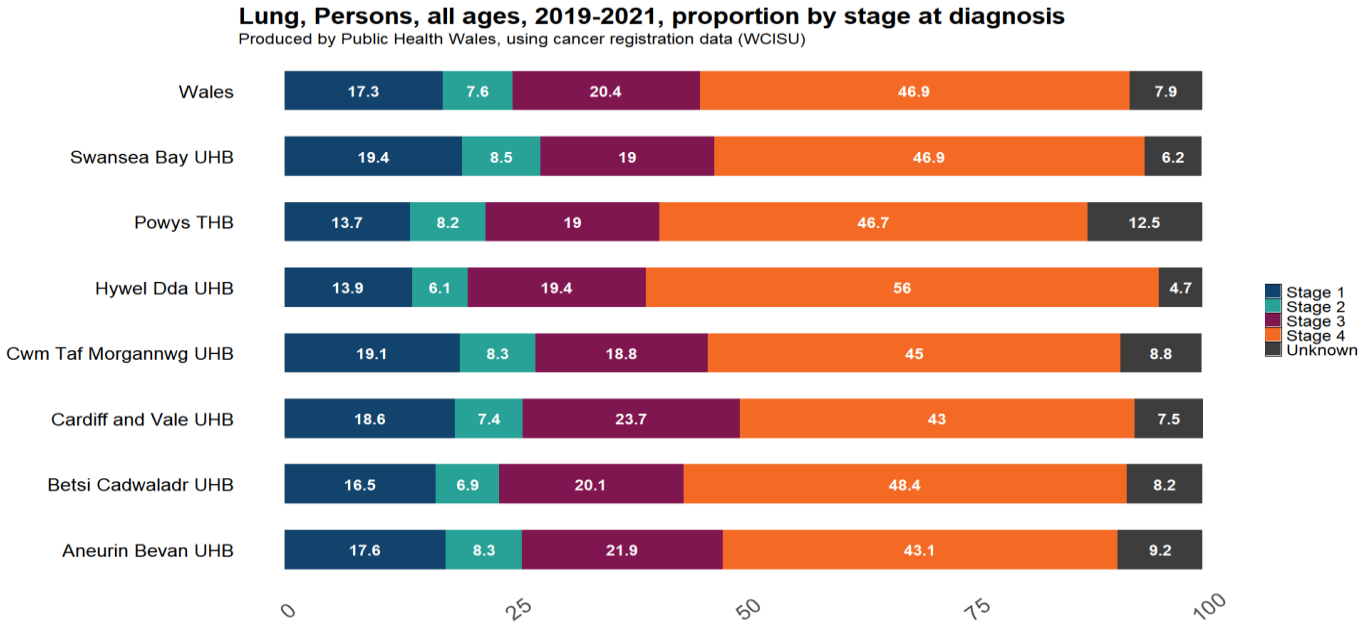


Figure 3 shows that residents in Hywel Dda University Health Board area have a significantly lower proportion of stage 1 diagnoses and a significantly higher proportion of stage 4 lung cancer diagnoses than Wales as a whole. Stage 4 diagnoses in Aneurin Bevan UHB were statistically significantly lower when compared to Wales as a whole.

Figure 4: Colorectal cancer, persons, all ages, 2019 - 2021

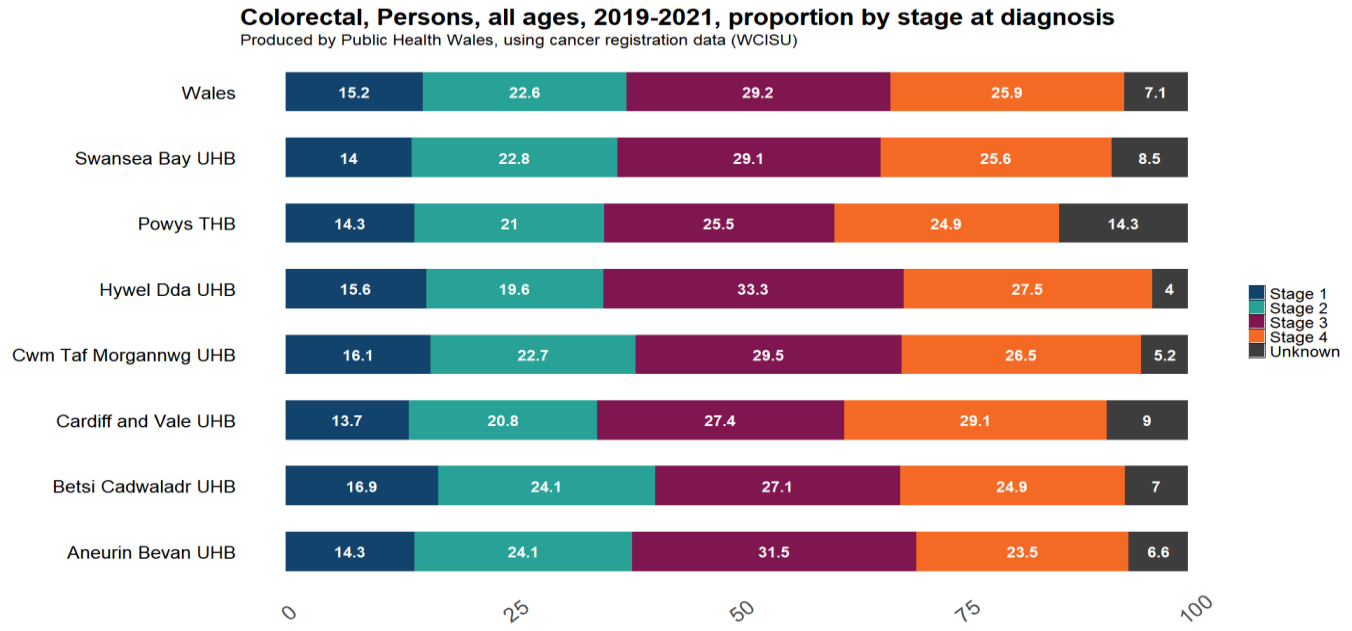


Figure 4 shows that there is less variation in stage of diagnosis across health boards for colorectal cancer, the majority of differences are not statistically significant.

Figure 5: Prostate cancer, persons, all ages, 2019 - 2021

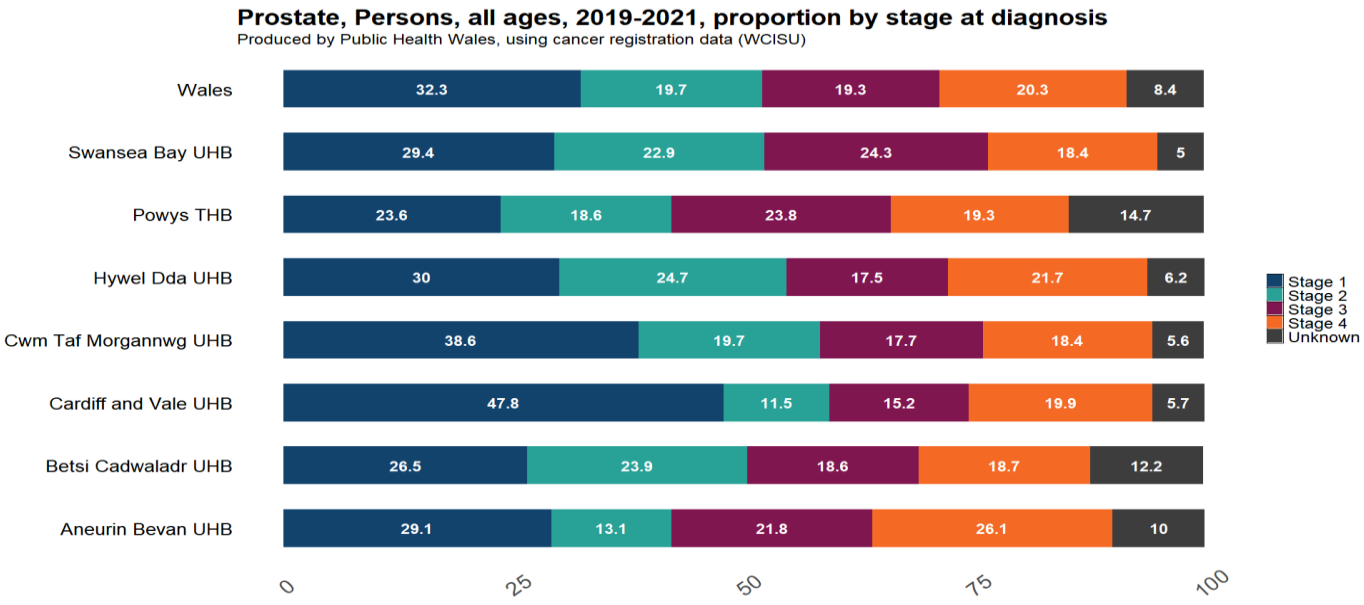


Figure 5 shows that one in four prostate cancers for residents in Aneurin Bevan University Health Board are diagnosed at stage 4, statistically significantly higher than Wales as a whole. Cardiff and Vale University Health Board residents have a statistically significantly higher proportion of stage 1 prostate cancer diagnoses and a significantly lower proportion of stage 2 diagnoses when compared to Wales. Residents in Powys Teaching Health Board area have the lowest percentage of stage 1 diagnoses, with both stage 1 and stage 2 proportions significantly lower than those in Wales as a whole.

Figure 6: Female breast cancer, persons, all ages, 2019 - 2021

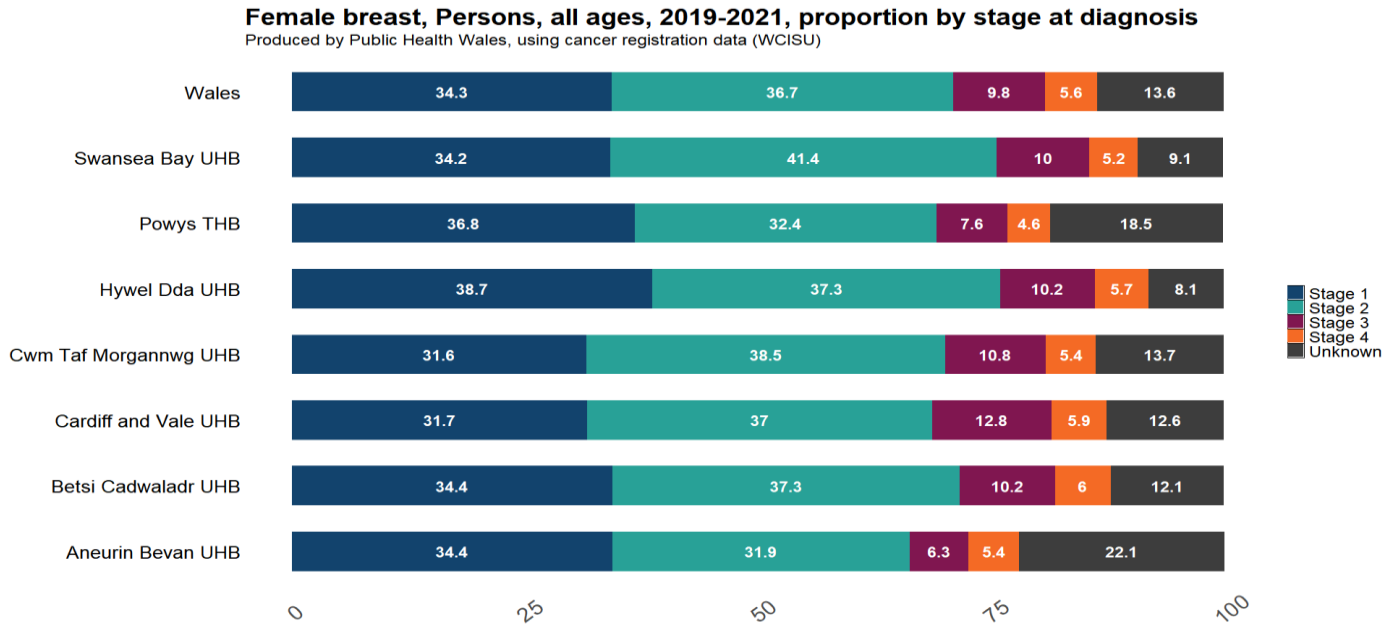


Figure 6 shows that for residents in the Aneurin Bevan University Health Board area, both stage 2 and stage 3 diagnoses are statistically significantly lower than in Wales. Cardiff and Vale University Health Board show a statistically significantly higher proportion of stage 3 diagnoses. Stage 1 diagnoses for residents in Hywel Dda University Health Board and stage 2 in Swansea Bay University Health Board are statistically significantly higher when compared to Wales as a whole.

6.3 POINT 3. An update on the unit's work with the SAIL database to link cancer registry data to other relevant datasets to understand the impact of social and demographic factors (such as education and employment) on cancer incidence.

This important analysis project that linked WCISU cancer registry data to Census 2011 data in the SAIL Databank is nearing completion. It is at the commentary and quality assurance stage. It is envisaged that findings from this Phase 1 of the work on Cancer Inequalities will be published in June 2025. We will notify the Committee as soon as the findings are published.

Phase 1 considers how cancer incidence (2011-2020) varies by ethnicity, housing tenure, overcrowding and occupation. Cancer types include all malignancies (excluding NMSC), lung, colorectal, male prostate and female breast cancers.

We are currently in the planning stages for Phase 2 of this Cancer Inequalities work in SAIL Databank. Phase 2 will expand on learning from Phase 1. It will also include linking to Census 2021 data to explore new variables and cancer diagnoses data for 2021.

6.4 Other remarks

You also asked for any other remarks we would like to make. The following gives an overview of some of the developments that are under way.

Official statistics for cancer mortality in Wales, up to 2024, are due for release in June 2025. These will be published in the Cancer Reporting Tool, with an accompanying main message

document. This represents a significant improvement in timeliness of mortality data, and we will look to publish earlier in the year next year. We are also exploring the work necessary to further improve the timeliness of our cancer incidence data.

All the international research programmes with which WCISU is collaborating are poised to complete or mostly to commence their next phases. They include ICBP-Covid19 Module, ICBP Phase 3, EUROCARE-7, CONCORD-4, and BENCHISTA-2. The next phases of these programmes will all include much more recent cancer registry data and examine in more detail factors related to international inequalities in cancer survival. The committee can be notified of any new publications.

References

1) WCISU cancer survival official statistics messages CancerSurvivalInWales_2002-2021_MainMessages.docx

2) WCISU cancer mortality official statistics main messages Main messages - Mortality OS 2022 - Corrected April 2024.docx

3) International Cancer Benchmarking Partnership Surv Mark 2 *Lancet Oncology*, 2019 Progress in cancer survival, mortality, and incidence in seven high-income countries 1995–2014 (ICBP SURVMARK-2): a population-based study - The Lancet Oncology

4) Allemani et al. Global surveillance of trends in cancer survival 2000-14 (CONCORD-3): analysis of individual records for 37 513 025 patients diagnosed with one of 18 cancers from 322 population-based registries in 71 countries. Lancet 31 January 2018

5) Benchista website: The BENCHISTA Project | UCL Great Ormond Street Institute of Child Health - UCL – University College London

6) International benchmarking of stage at diagnosis for six childhood solid tumours (the BENCHISTA project): a population-based, retrospective cohort study - PubMed

7) Virgili G, Capocaccia R, Botta L, et al. Survival and Health Care Burden of Children With Retinoblastoma in Europe. *JAMA Ophthalmol.* 2024;142(11):1062–1070. doi:10.1001/jamaophthalmol.2024.4140

8) ECIS dashboard: European Cancer Information System (ECIS) and Welsh Cancer Intelligence and Surveillance Unit Official Statistics

9) Brown. Cruk paper The fraction of cancer attributable to modifiable risk factors in England, Wales, Scotland, Northern Ireland, and the United Kingdom in 2015 | British Journal of Cancer

10) Islami F. et al. Proportion and number of cancer cases and deaths attributable to potentially modifiable risk factors in the United States. CA Cancer J. Clin. doi: https://doi.org/10.3322/caac.21440 (2017)

11) Grundy, A. et al. Cancer incidence attributable to lifestyle and environmental factors in Alberta in 2012: summary of results. CMAJ Open 5, E540–E545 (2017)

12) Whiteman, D. C. et al. Cancers in Australia in 2010 attributable to modifiable factors: summary and conclusions. Aust. NZ J. Public Health 39, 477–484 (2015).

Annex 1: **Cancer mortality in Wales**

Cancer is the leading cause of death in Wales, accounting for one quarter of all deaths in 2022.

Broad Cause	Count	Age-standardised Mortality Rate
All cancers excluding NMSC	9,154	273.5
Circulatory system	8,770	264.4
Other causes	5,077	152.8
Respiratory system	4,393	132.0
Dementia & Alzheimer	3,833	110.3
Digestive system	1,960	58.8
External causes	1,584	50.7
Flu and pneumonia	1,389	42.6
Diabetes Mellitus	490	14.7
Infectious diseases	433	13.1

Source: Main messages - Mortality OS 2022 - Corrected April 2024.docx (reference 2)

Annex 2: The deprivation gap for cancer mortality and survival in Wales

The impact of deprivation varies across different cancer types with examples of cancer types provided below. Additional detailed breakdowns are available on the cancer reporting tool.

Cancer mortality and deprivation:

- Of the four most common cancers, lung cancer has the widest inequalities in cancer mortality by area deprivation in Wales (Figure A).
- The gap in bowel cancer mortality rates between the most and least deprived areas in Wales rapidly decreased in 2022 (Figure B).

Figure A: Lung cancer mortality and deprivation in Wales. Produced by Public Health Wales, using PHM & MYE (ONS) and WIMD (WG).

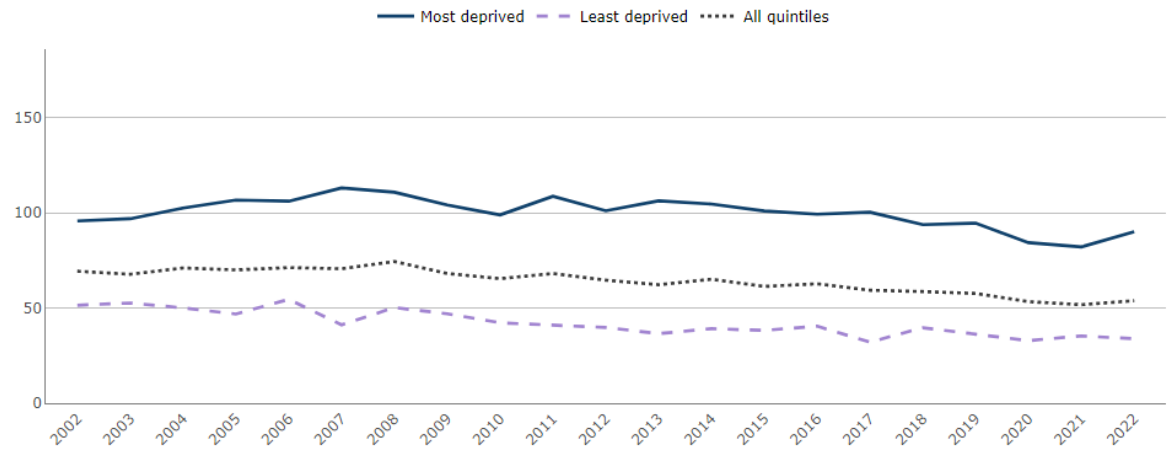
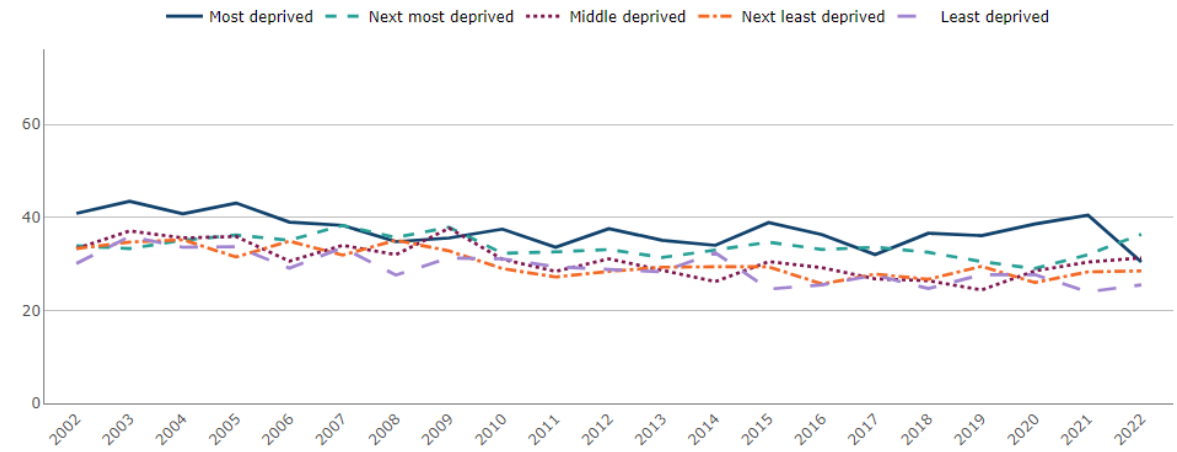


Figure B: Bowel cancer mortality and deprivation in Wales. Produced by Public Health Wales, using PHM & MYE (ONS) and WIMD (WG).



Source: Figures 5 and 6 in Main messages - Mortality OS 2022 - Corrected April 2024.docx (reference 2)

Cancer survival and deprivation:

- For people diagnosed with colorectal cancer, this inequality gap in net survival is wider than it was for the previous period (Figure C).
- For lung cancer, ten-year net survival has greatly improved in the least deprived areas of Wales, but much less so in the most deprived, widening existing deprivation inequalities (Figure D).

Figure C: Colorectal cancer net survival and deprivation in Wales

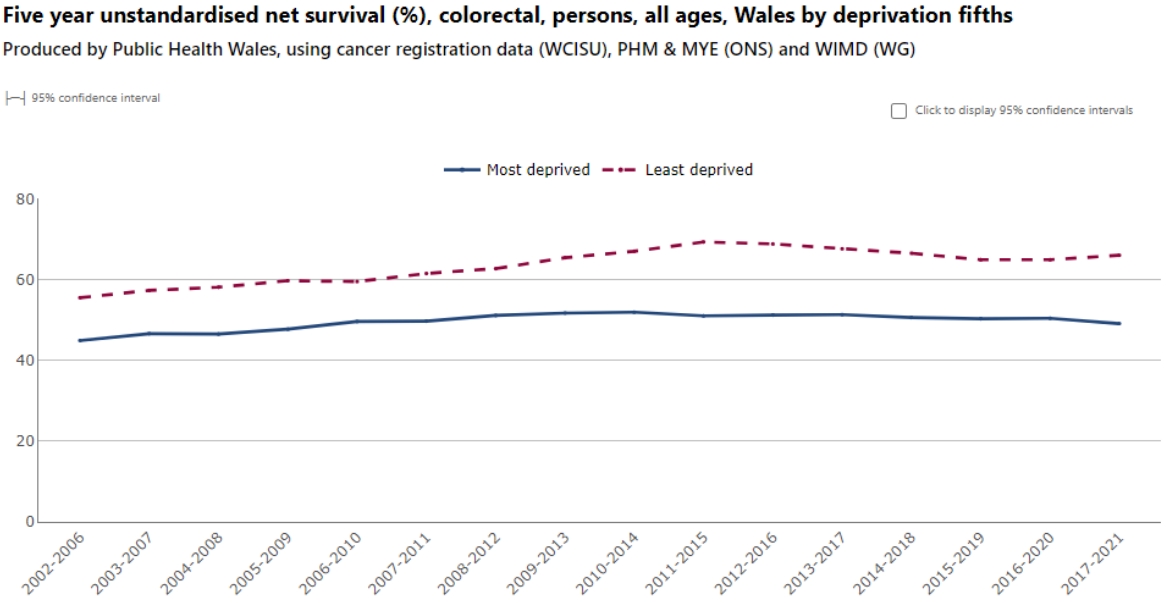
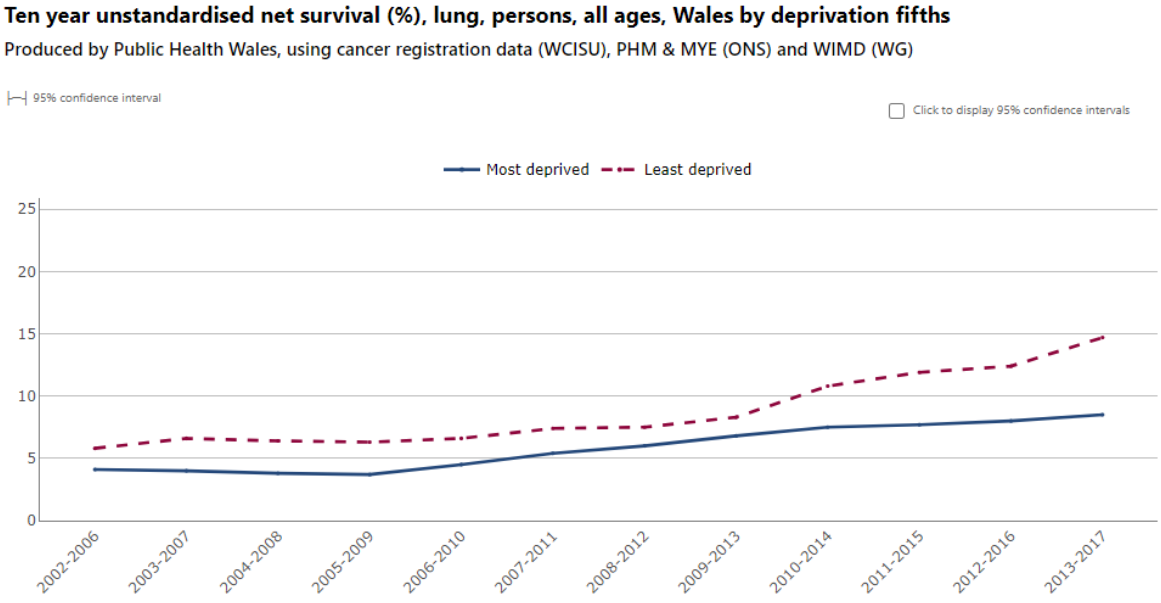


Figure D: lung cancer net survival and deprivation in Wales

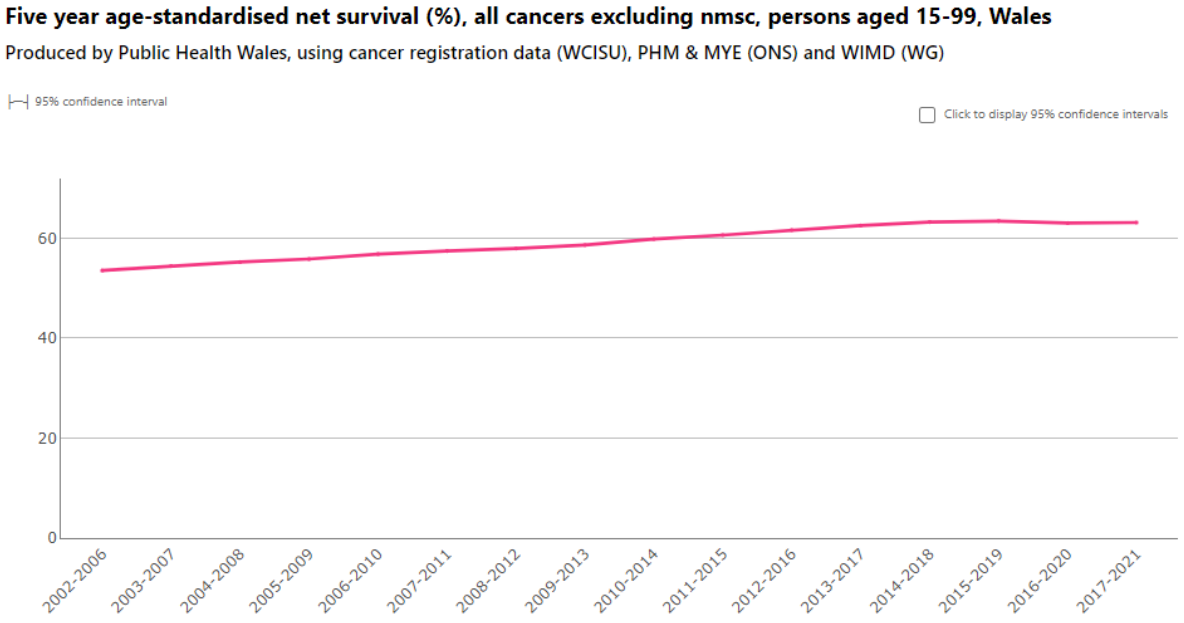


Source: Chart 8 and Chart 9 in CancerSurvivalInWales_2002-2021_MainMessages.docx (Reference 1)

Annex 3: Five-year net cancer survival in Wales

Long-term historic improvement in five-year net cancer survival has stagnated since the 2014-2018 diagnosis period. This stalling in improvement started before the Covid-19 pandemic and has continued beyond it.

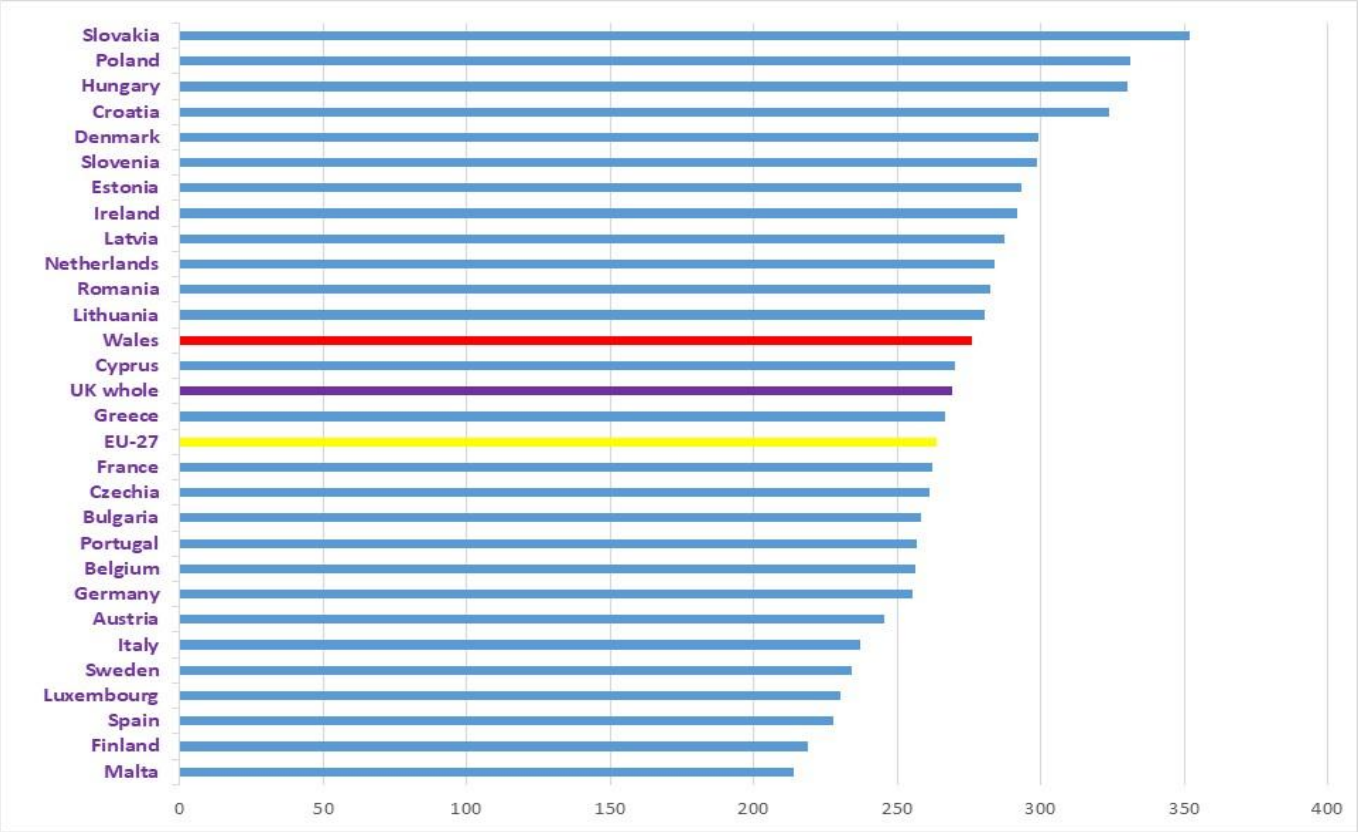
Figure E: Five year age-standardised net survival %



Source: Chart 1 CancerSurvivalInWales_2002-2021_MainMessages.docx (reference 1)

Annex 4: Cancer mortality from the European Cancer Information System (ECIS) dashboard

Figure F: European Cancer Information System (ECIS) dashboard for mortality in EU-27 countries, UK as a whole, and Wales



Source: ECIS dashboard 2020