North Wales Regional Report

north west cancer research

2023

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EXECUTIVE SUMMARY

Since our founding over eight decades ago, North West Cancer Research has been independently funding research, strategies and community-level engagement designed to understand the causes of cancer and support those living with and beyond cancer in the North West of England and North Wales.

Over this time, we have developed a finely nuanced understanding of the prevailing cancer issues within our area. This level of awareness is vital, as cancer cannot be effectively tackled without a highly localised approach that understands the multi-faceted, complex and evolving nature of the challenges at hand.

We cannot take a one size fits all approach to cancer around the country, as no two villages, towns, cities or even regions are exactly alike. To enable local care systems to employ tailored measures that reflect the lived realities of their communities, we've invested over £45 million since 2000 in life-saving research projects as well as preventative awareness campaigns that address cancer inequalities.

Levels of engagement

A central aspect of our work has been to engage three overlapping but distinct levels within society and the medical landscape which governs the collective ability to prevent and treat cancer in North Wales.

Public engagement

Many of the cancer types which most disproportionately affect North Wales are lifestyle related. This fact underscores the critical need for targeted education and outreach programs that empower people young and old with the information they need to live healthy lives that minimise their risk of being diagnosed with cancer.

Achieving this has seen us undertake a wide range of activities. This has included school engagements to provide our communities' next generation with healthy lifestyle skills and knowledge. We've also rolled out region-wide awareness campaigns to spread important messages into the media as well as boots-on-the-ground work at key North Wales locations to disseminate information first-hand.

System engagement

As I mentioned in a recent roundtable on tackling health inequalities, "cancer is the point at which the pressures of society meet medicine". This is highlighted by the expansive network of local government, Welsh Assembly, central government, NHS, and third sector organisations that have a role to play in tackling high cancer rates in North Wales.

Talking to stakeholders in our communities such as politicians, health directors, NHS clinicians, mayors, councillors, academics, and more is essential to aligning our region's approach to tackling cancer and ensuring that the issues are understood, and the priorities addressed.

"Cancer is the point at which the pressures of society meet medicine."

Research engagement

North West Cancer Research maintains a research pipeline from the earliest discovery science, understanding the genetic causes of cancer to studies which seek to improve patient care through our hospitals today. We add to this studies which aim to improve available treatments using current techniques to those which focus entirely on the new and ground-breaking – creating new ways to treat cancers. Our focus is on the unique needs of our region and so an increasing amount of our research is on the inequalities which exist across the area. These may be connected to disparities in wealth or the many other diverse factors at play as we live and age but they are what makes our region unique. We need to understand our inequalities if we are to address them and this is what our research aims to do.

Into the mix of research types is added the different cancer types which are covered in this report. As a Charity we believe that our mission is to tackle the cancer needs of the region. Because of this our research portfolio includes cancers which are common, such as breast and prostate cancer, through those which over-index in our region and even including studies on rare and childhood cancers. The largest weight of our funding however is concentrated on those cancers which have the greatest impact in our region – head and neck cancers, cancers of the digestive system, the lungs and liver. Our funding is spent through academic and health institutions but its aim and focus is to improve the health of the region.

The underlying thread that connects all this work and each tier of engagement is uncovering and addressing why cancer is a more common disease in North Wales compared to the rest of the country.

Purpose and approach

The disparity between the national and regional cancer rates has been a core driver of our work as well as our regional report. Now in its third year, this report plays an important part in our engagement activities, as it paints a multi-layered picture of the cancer landscape across North Wales. The data we analyse consistently illustrates long-term trends that highlight both the scale of the challenge as well as the critical necessity of community-level interventions. In preparing this, we assess the available data on cancer in North Wales and explore it at a county level, covering Conwy, Gwynedd, Flintshire, Wrexham, Anglesey, and Denbighshire. This provides us with granular insights into how this disease affects our communities and which specific conditions are putting the greatest strain on the people and healthcare infrastructure of North Wales.

Central to this analysis is the overlaying of multiple data points, including socio-economic information with incidence (total and age standardised), prevalence and total cancer death rates, to identify connections that may not be immediately obvious. This creates a rounded picture of cancer trends and shows where specific needs lie.

From this, we sadly see more continuity than change over the course of our annual reports, with the prevalence, incidence, and overall number of deaths from cancer staying above the national average. In fact, residents in the North West of England and North Wales are 25% more likely to be diagnosed with cancer than in the rest of the UK.

For the 22 key cancer groups for which incidence data is recorded by the NHS, North Wales exhibits higher rates for 20 of them when compared to the national average. The overall number of deaths from cancer has also remained largely the same, as from 2020 to 2021 the total number of cancer deaths in North Wales fell from 283.95 to just 272.9 per 100,000 people. In addition, age standardised total cancer deaths were up to 15% higher for some types of cancer in the northern six counties compared to the overall Welsh benchmark.

Entrenched inequalities

The static nature of the region's cancer rates mirrors the sluggish pace of improvement in its deprivation levels. This entrenching of inequalities is important, as a clear correlation between deprivation and increased cancer rates is evident in our research.

We can see this in areas such as Flintshire, which is the most deprived county in North Wales and where certain cancers are present at a significantly inflated rate. This is particularly the case for liver cancer, for which Flintshire exhibits a 46% higher incidence rate than the national average. In contrast, Denbighshire, the least deprived area, records a level of liver cancer diagnosis that's equivalent to the national average.

The role that socio-economic factors play in an area's health expectations is further underlined by data that indicates it is 'lifestyle related' cancers that show the most alarming regional disparities. Stomach and oesophageal cancer for example, both of which may result from smoking, drinking or obesity, are respectively tracked at a 29% and 25% higher incidence rate in North Wales compared to the rest of the country.

This alarmingly high number of cases poses a substantial burden for the region's healthcare network, as not only is it present in high numbers but these can be particularly challenging types of cancer to treat.

Another key issue uncovered in this research is that cases of some cancers specific to women are higher in North Wales than across the rest of the country. This is the case for cervical cancer, as it has an incidence rate 44% higher than the national average – which shows a marginal increase from the 43% rate identified in our 2022 report. Ovarian cancer also is tracking at an above average rate across North Wales, with a 13% higher incidence rate and a 9% above average number of recorded deaths from this disease.

Connecting communities

With cancer death rates flatlining rather than decreasing in North Wales, it is clear we are facing a long-term issue that is going to require significant levels of investment targeted at understanding the problems – and the solutions - at a local level. Education and awareness of preventative measures should be high up on the agenda for this investment, as increasing levels of understanding across our communities will significantly help bring North Wales' cancer rate into alignment with the national average.

This is why we work hard to implement outreach projects and to spread information at a grassroots level. Our presence in the region's communities and our work on research like this tells us that creating a cancer-free future takes more than researchers in labs and doctors in hospitals - it will take each town and county to realise where its specific concerns lie and how exactly they can be empowered to take control of their own health.

Alastair Richards,
North West Cancer Research CEO

North Wales Regional Overview

NORTH WALES
Regional Overview

Health outcomes for people living in North Wales are distinctly different to those in the rest of the country, with the region over-indexing on the total number of cancer cases diagnosed per year compared to the national average.

Specific health challenges can be seen by the fact that 20 of the 22 cancers for which incidence data is available were above the national rate, while North Wales also records a higher total cancer death rate than the Welsh average. This means that people living in the region's communities are facing a higher chance of both developing and dying from cancer than those living in the rest of the country.

For the fourth report in a row, incidence rates for a long list of cancer types have remained starkly above the national average. This includes for cervical, oesophagus, head and neck, ovarian, prostate, and pancreatic cancers. Some cancer types have seen significant jumps in the disparity between the Welsh norm and the incidence rate in North Wales, with stomach cancer increasing to 29% above average (up 15%) and breast cancer moving to 18% higher (up 13%). It's important to note that some cancers have also moved from below to above average rates, such as colon cancer which was previously 3% below the Welsh benchmark but is now 13% above it.

The three cancer types that accounted for the most total deaths in 2021 were trachea, bronchus and lung; followed by colon, sigmoid, rectum and anus; and lymphoid, haematopoietic and related tissue. Total deaths from some of the most challenging types of cancer surveyed, including breast, pancreas, and brain, have remained higher than the Welsh average for consecutive years.

Regional inequality

Localised factors such as population demographics, the environment and deprivation levels have a notable impact on the pervasiveness, mortality levels and types of cancer that specific communities experience. This is important, as communities in North Wales often face higher levels of inequality than elsewhere in the country and the healthcare infrastructure is typically managing with an older than average population.

The inequality data for North Wales highlights this, as some areas are experiencing deprivation levels that are up to 25% higher than most of the country. Pockets of significant deprivation are often sitting very close to areas of comparative affluence - with communities in Flintshire and Gwynedd indexing high levels of income deprivation despite being close to relatively high-income areas in Denbighshire.

The overlaying of income data with cancer rates paints a mixed picture across North Wales. The region exhibits higher than average levels for both cancer incidence and deprivation, being 10% (a 3% increase on our previous report) and 8% higher than the Welsh average respectively. However, cancer rates across the region fluctuate considerably, going as high as 25% above the average in Anglesey to a slightly below average rate in Wrexham. Interestingly, while Flintshire records the worst levels of deprivation among the six counties surveyed, the most affluent area in North Wales, Denbighshire, is roughly in the middle of these extremes with an incidence rate 15% above the national average.

"North Wales exhibits higher than average levels for both cancer incidence and deprivation."

Just under a third (29%) of the population in North Wales are employed in routine or manual roles, while a similar number (28%) have managerial, administrative, or professional occupations. Students make up 8% of the population, while 5% of people living in the region are long term unemployed or have never worked.

The gender breakdown in North Wales aligns with the national population, with men making up 49% and women making up 51% of the population.

The age demographics of a population can play a significant role in the frequency and type of cancers experienced by communities. In North Wales, the population tracks as slightly older than Wales as a whole, with 38% of its residents being aged 55 or over, which compares to 33% for the country as a whole. This large proportion of elderly people could indicate a causative link to the higher rates of cancer found in the research. Communities across North Wales with higher levels of elderly residents are likely to report increased rates of certain cancers that predominantly impact older people, such as myeloma.

"Areas of North Wales are experiencing deprivation levels that are up to 25% higher than the majority of the country."

Cancer impacting women

Incidences of several cancers which impact women continue to be recorded at markedly higher rates in North Wales compared to the rest of the country.

The incidence rate of cervical cancer is particularly notable at 44% above the national average, which is an increase from last year's rate of 43%. Communities in Wrexham are the most acutely affected, with recorded rates of cervical cancer almost double the national average (96%). Gwynedd, Conwy, Flintshire, and Denbighshire all record rates between 14% and 41% higher than the rest of Wales for this disease (cervical cancer incidence data was not available for Anglesey).

Across the region, ovarian cancer rates are 13% above those recorded in the rest of Wales. In 2021, this led to total deaths from this type of cancer being 9% above the national statistics. Four out of the six counties in North Wales experienced higher rates of ovarian cancer than the rest of the country. Anglesey tracked the highest incidence rates for this disease at 32% above the Welsh median, which is an increase of 29% from last year's regional report. This was followed by Conwy at 30%, Denbighshire at 18%, and Gwynedd at 17% above the national average. Incidence rates for cancer of the uterus in North Wales have fallen but remain above the national average for the third report in a row, with this disease currently recorded at 4% above the Welsh benchmark. Gwynedd reported the highest prevalence rate of this disease, at 44% higher than the national norm. Conwy and Flintshire both also exhibited a 10% above average rate for this type of cancer.

Cancer impacting men

North Wales records higher than average incidence rates for several male specific cancers compared to the rest of the country.

Prostate cancer is a key challenge for the region's health infrastructure, with an incidence rate 16% higher in North Wales than it is nationwide. Out of all deaths by cancer in North Wales, this disease accounted for the fifth most fatalities in 2021 at 19.31 deaths per 100,000 people.

Four of the six counties surveyed recorded incidence rates for prostate cancer in excess of the national average. Communities in Anglesey reported the highest burden of this disease, with an incidence rate 62% above the national benchmark. Conwy, Denbighshire, and Flintshire all tracked incidence rates much higher than the Welsh average, with this disease being respectively 20%, 9%, and 8% above average in these counties, while Gwynedd was approximately the same as the national benchmark. While not male specific, men are more likely to be diagnosed with head and neck cancer than women. Across the region, the incidence rate for this disease is 15% above average and it also ranks as one of the region's top ten most prevalent cancers, with 24.08 cases per 100,000 people. Head and neck cancers pose a particular challenge for Conwy, Denbighshire, and Anglesey, which respectively record 49%, 37%, and 31% above average incidence rates.

Key Challenges for North Wales

Oesophageal cancer continues to be diagnosed at a very high rate among communities in North Wales. While it has come down since our last report, the overall incidence for this disease is still 25% higher than the rest of Wales, with some counties in particular suffering from this type of cancer at a rate that far surpasses the national average. This is especially the case in Conwy, which records a staggering 99% higher incidence rate and 14% higher total deaths compared to the national average. This is a drop by just 2% in Conwy's incidence rate recorded for last year, which was more than double the Welsh norm at 101%. Flintshire, Gwynedd, and Anglesey, all also record double digit higher rates of oesophageal cancer at 40%, 19% and 11% respectively.

Breast cancer represents a growing challenge for the region's healthcare infrastructure, with the incidence rate for this disease increasing from 5% to 18% above the national average. Anglesey was the most significant outlier for this statistic, with an incidence rate 82% higher than the rest of the country. In comparison, Denbighshire had the next highest figure at a 22% above average incidence rate. The total cancer death rate for this disease is also higher than the national average and ranks as the fourth most fatal type of cancer in the region.

The incidence rate for stomach cancer witnessed one of the largest jumps when compared to last year's regional report, increasing from 14% to 29% above average. Only Flintshire and Wrexham indexed below the national average for this disease, with the four other counties all recording an incidence rate of between 39%-69%. Pancreatic and colon cancer rates also pose challenges to communities in North Wales.

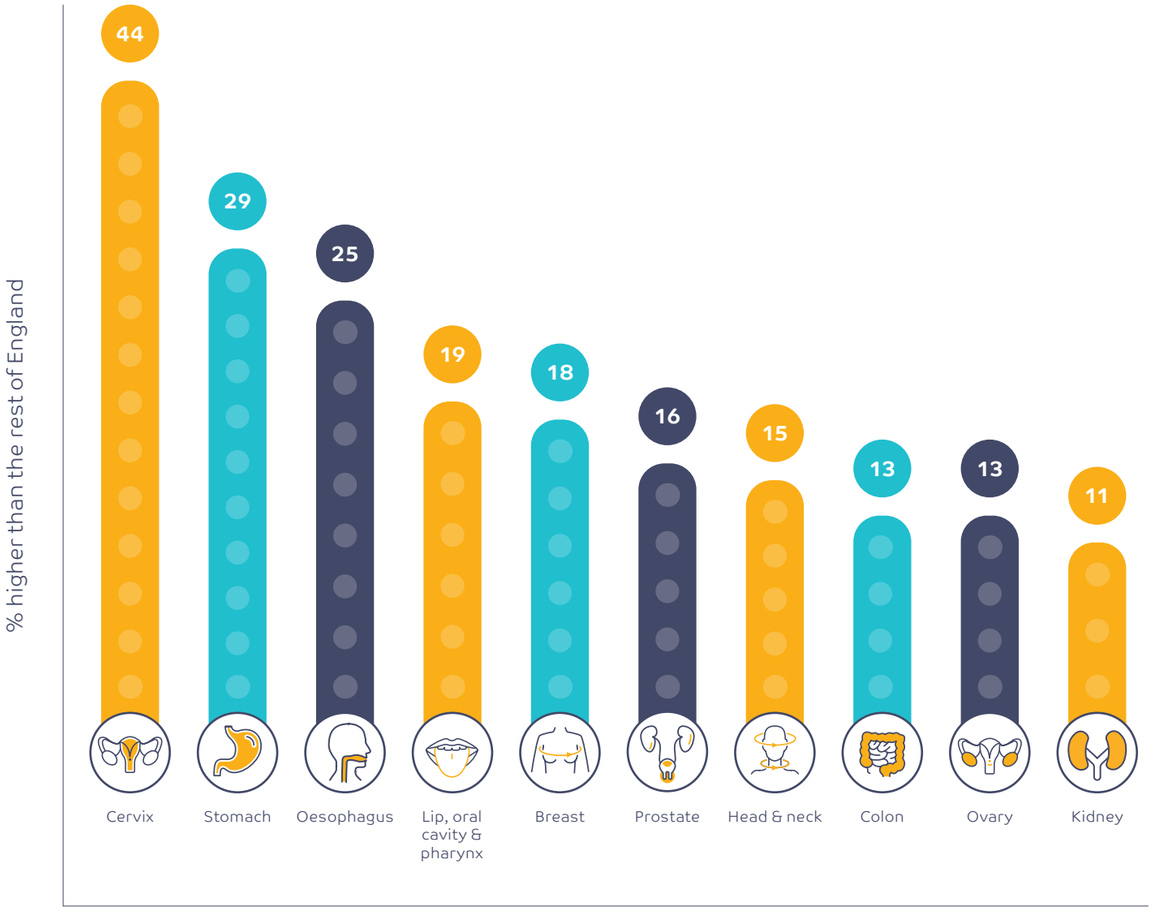
The incidence rate for pancreatic cancer is currently at 10%, a fall of 3% from last year, and the total death rate from this disease in North Wales is 15% above the rest of the country. When looking at total death rates, Anglesey and Gwynedd saw 32% and 23% above average rates for pancreatic cancer. Colon cancer has increased 16% since last year, when it was 3% below the national average, with Gwynedd recording the highest incidence rate for this disease out of the six counties.

The data analysed for this report reveals that North Wales has a defined cancer landscape that presents unique and highly localised challenges. The region is evidently impacted at both a regional and county level by specific cancers at a scale not seen elsewhere in the country. These key variances in the communities of North Wales means that the area's healthcare network is facing a number of specific burdens.

"Oesophageal cancer remains a key challenge for North Wales, particularly for Conwy where the incidence rate is almost double the national average."

The entrenched nature of this problem is illustrated by the fact that almost all the indices used to benchmark cancer incidence, prevalence, and total death rates are largely static across multiple years of data gathering – and in some instances the difference between the regional and national picture has been increasing. This highlights the urgent need for immediate evidence-led interventions at a local level across all six counties of North Wales.

"Almost all the indices for cancer incidence, prevalence and total death rates have been largely static for several years. This indicates an entrenched problem that requires urgent interventions at a local level."

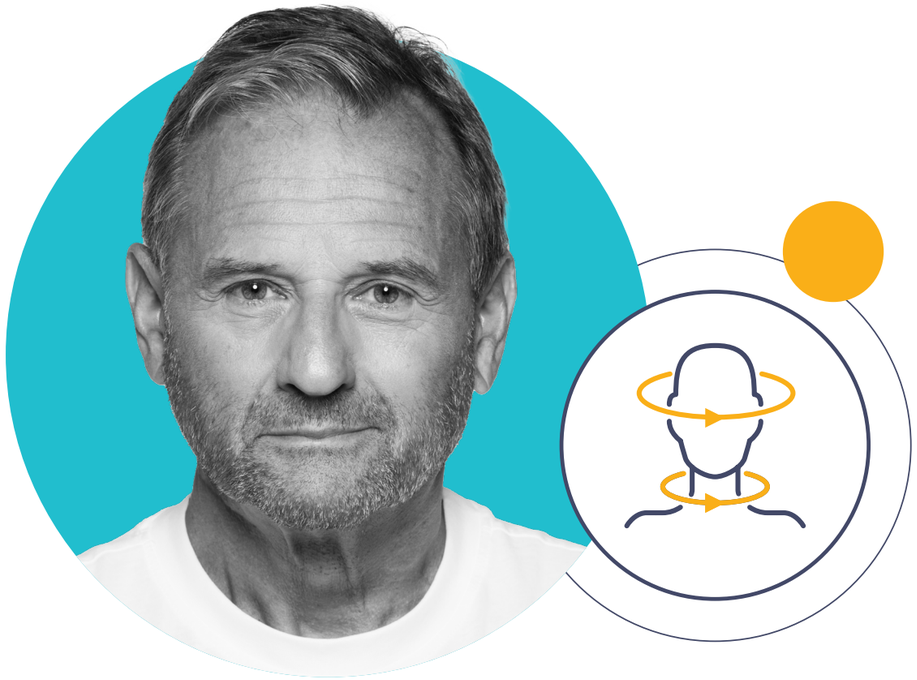


North Wales: Top Ten Cancers by incidence

Top 10 cancers by total deaths *

1. Trachea, bronchus & lung
2. Colon, sigmoid, rectum & anus
3. Lymphoid, haematopoietic & related tissue
4. Breast
5. Prostate
6. Pancreas
7. Oesophagus
8. Bladder
9. Liver
10. Brain

* List is based on age standardised total cancer deaths for which data was available.



HEAD & NECK CANCER AWARENESS: Our work

The incidence rate for head and neck cancer in North Wales is 15% higher than the national average. Some communities face a particularly acute risk from this disease, with Conwy, Denbighshire, and Anglesey all recording incidence rates significantly above the Welsh norm, at 49%, 37% and 31% respectively.

Affecting more than 30 different parts of the head and neck, including the throat, tongue and mouth, the condition is more common in men, especially those aged 50 and above. To raise awareness of this disease and encourage men to get checked as soon as symptoms appear, we initiated the ‘Don’t Be Silent. Speak Out’ campaign.

A series of media and digital activities put key information regarding head and neck cancer prevention into the eyelines of those most at risk. The campaign was centred around the facts about the regional disparity in head and neck cancer rates and the personal stories of six men, who are currently or have recently lived with this disease, about the symptoms they noticed, how they felt, and why it is important that men speak out if they notice something.

Eye-catching and informative creative wasused to spread this message to the target demographic in North Wales across online channels including Facebook, Instagram and YouTube, which directed people to a dedicated ‘Speak Out’ landing page. The campaign also included media outreach, in which BBC Radio Presenter Mark Radcliffe shared his own story of head and neck cancer diagnosis and treatment. Mark’s compelling story, passionate advocacy for getting other men to look for symptoms and seek medical advice, and the stark regional statistics saw this story picked up by numerous media outlets, including several ITV and BBC shows.

INNOVATIVE CANCER TREATMENT RESEARCH: Our work

Ovarian and head and neck cancers are among the top ten cancers that occur disproportionately in the region, with incidences of patients with head and neck cancers 3.5 times the national average, and rates of ovarian cancer in Gwynedd, Denbighshire, and Anglesey between 17% and 32% higher than the rest of Wales.

A team of researchers working at Bangor University have identified a new protein in cancer cells which could lead to improved treatments for patients. The project was inspired by previous research which found that some ovarian cancer patients with the BRCA gene responded well to medicines called PARP Inhibitors. These inhibitors supress the PARP protein found in the BRCA cancer cells, stopping the protein from repairing the cancer cells which allows them to die.

The newly identified protein, named MRNIP, is found only in cancer cells and not in healthy tissue. Much like the BRCA gene in ovarian cancers, MRNIP stops DNA gaps occurring in tumour cells and helps the cancer to thrive. This means that cancer cells lacking the MRNIP are more likely to respond to chemotherapy and radiotherapy.

The team are now targeting the MRNIP protein with chemotherapy, radiotherapy, PARP inhibitors and novel drugs and will monitor the responsiveness to the cells and link the findings with the level of DNA gaps occurring to provide a route forward for new, more effective treatments for patients that will hopefully improve survival rates of cancer patients in the region.

DATA
The statistics behind the report

We assessed the 22 key cancers across North Wales for which NHS data is available. The data used in this report is the most up-to-date information available and was sourced for Wales and England from official sources. These sources were principally the National Cancer Registration and Analysis Service's (NCRAS) Cancer Data for England (www.cancerdata.nhs.uk) and Public Health Wales (https://phw.nhs.wales) for Wales.

The latest cancer incidence and prevalence data, the main metrics used in this report, are for 2020. Data on age standardised total cancer deaths came from the Office of National Statistics Leading Causes of Mortality 2020 report. Population, employment, household religion and ethnicity data was obtained from the UK Office for National Statistics via Nomis (www. nomisweb. co.uk) and from 2021 Census data.

Where data has not been directly reported for Local Authority areas, tables of data were aggregated according to their type (counts versus rates), allowing for other features such as cancer type, gender and age.

The latest full set of incidence and prevalence data used in this report covers calendar year 2020, the first year of the COVID-19 pandemic. There is significant research to suggest that the pandemic affected cancer diagnoses and treatment rates. For example, The Lancet article 'COVID-19 and cancer: 1 year on' published in April 2021 cited a study which estimated that "45% of those with potential cancer symptoms did not contact their doctor during the UK's first wave of the pandemic (March–August, 2020)". This is worth highlighting as it means that the true state of cancer diagnosis and prevalence in North Wales may be higher than that factored into this report. However, as the main metric used is the difference between the national and regional diagnosis and prevalence, rather than overall totals, this is still the best indication for the disparity between the likelihood of contracting and living with cancer in North Wales compared to elsewhere.

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