

North Wales Regional Report



2025



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North West Cancer Research was founded more than seven decades ago with the purpose of independently funding regionally-focused research, strategies, and community-level engagement designed to tackle the cause, improve the care and ultimately find the cure for cancer.

Thanks to this work, we have cultivated an informed and nuanced picture of the key cancer issues within our area. Building up this level of localised awareness is critical, as cancer cannot be effectively tackled without a highly targeted approach that accounts for the multi-faceted, complicated, and evolving nature of the challenges at hand.

We know that no two villages, towns, cities, or even regions are exactly alike,

therefore we cannot take a one-size-fits-all approach to cancer around the country.

This is why we have invested over £55 million since 2000 in life-saving research projects, as well as preventative awareness campaigns that address cancer inequalities. All this work is aimed at empowering local care systems with tailored measures that reflect the lived realities of their communities.

“Localised awareness is critical, as cancer cannot be effectively tackled without a highly targeted approach.”

● Unravelling answers to our region’s complex cancer questions

The population and healthcare infrastructure in the North West of England and North Wales face a number of stark cancer related challenges.

This is underlined by the fact that residents in this region are 25% more likely to be diagnosed with cancer than in the rest of the UK*, and the latest cancer prevalence data shows that North Wales still records a higher annual diagnoses rate than the rest of Wales.

As discussed in the report, the cancer burden faced across North Wales can vary, but every county exhibits disproportionate levels of cancer in general while particular types of the disease continue to have an outsized impact on specific communities.

The role that socioeconomic factors play in the area’s health expectations is clear in the

data, with counties that exhibit high levels of deprivation overlapping with areas managing some of the worst cancer rates. In addition, ‘lifestyle related’ cancers, such as bowel, lung, liver, kidney, stomach, and skin, show some of the most alarming regional disparities.

Throughout the course of our annual reports, we’ve seen how these rates have remained largely static for a number of years, which likely reflects the entrenched deprivation in communities across North Wales.

Building up this understanding of the region’s cancer landscape and the intertwined factors that contribute to it, provides us with a compass for our wider work and the approach we take to tackling the disease within our communities.

● This has informed our two-pronged approach to lowering cancer rates:

1. Educating people of all ages and backgrounds on key lifestyle factors to boost prevention by creating cross-society behavioural change
2. Investing in research into early diagnosis and treatment to improve outcomes and support those living with cancer and their families.

Strand one underscores the critical need for targeted education and outreach programmes that provide people of all ages with the information they need to live healthy lives that minimise their risk of being diagnosed with cancer.

We frequently implement campaigns designed to spread vital information and raise awareness of the cancers most prevalent in our region. Encouraging early diagnosis and getting important messages on cancer prevention and education to all corners of our communities has seen us undertake a wide range of activities, including

school engagement to provide young people with healthy lifestyle skills and knowledge. We have also rolled out region-wide awareness campaigns to share vital information with the media alongside boots-on-the-ground work at key locations to circulate information first-hand.

Recently, this has involved creative messaging around oesophageal, ovarian, skin, bowel, and head and neck cancers, which are all present at above average levels across North Wales as a whole or within specific counties. Central to these campaigns has been taking the time to understand why people in our area are not taking measures that would help prevent cancer or facilitate early diagnosis, such as wearing sunscreen or completing bowel cancer screening kits. These insights were then used to create messages that spoke to these perceptions and ways of thinking to encourage changes in behaviour and a wider understanding of the cancers impacting our communities.

“Building up an understanding of the region’s cancer landscape provides us with a compass for our work and how we tackle cancer within our communities.”

*National Institute of Health and Care Research North West Coast Clinical Research Network (2023)

This approach relies on facilitating education, communication, and collaboration throughout all levels of society. Opening up a dialogue between stakeholders in our communities such as politicians, health directors, NHS clinicians, mayors, councillors, academics, and more, is essential to aligning our region’s cancer initiatives and ensuring that the issues are understood and the priorities tackled.

A guiding ethos for this work is that cancer is the point at which the pressures of society meet medicine. This underscores the impact of societal factors such as deprivation, environment, and lifestyles but also emphasises how the weight of responsibility lies across civil society, from the expansive network of local government, central government, and the NHS to community bodies, private entities, and third sector organisations.

When untangling this web of overlapping influence and responsibility, we can break this down into three distinct levels within society and the medical landscape which governs the North West’s collective ability to prevent and treat cancer and through which we aim to engage – these are the political, medical, and research spheres.

For **strand two**, our research portfolio includes a mix of research types focused on common cancers, such as breast and prostate, along with studies on rare and childhood cancers and those that over-index in our region.

The largest weight of our funding is concentrated on those cancers which have the greatest impact in the North West and North Wales. This includes head and neck cancers, cancers of the digestive system, the lungs, and the liver. Our funding is spent through academic and health institutions, with the overall aim and focus of improving the region’s standard of health.

We maintain a research pipeline from the earliest discovery science and understanding of the genetic causes of cancer to studies which seek to improve patient care in hospitals today. Added to this are studies which aim to improve available treatments using current techniques and those which focus entirely on novel and groundbreaking new ways to treat cancers.

This scope of research activity is reflected in the wide variety of research activities currently underway. Examples of this include a project with



the Betsi Cadwaladr University Health Board on immunotherapy and advanced lung cancer. While at Bangor University, we are working with Dr Christopher Staples on a project looking into DNA and therapeutic responses in head and neck squamous cell carcinoma (HNSCC) and ovarian cancers. Beyond these examples, there are more than 60 research programmes in progress, with many already yielding results.

With our region’s unique needs and cancer landscape being our core focus, 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 diverse socioeconomic factors that need to be accounted for in our region. It’s important to understand our inequalities if we are to address them, and this is what our research aims to do.

Defining the approaches in these two routes provides a useful prism through which to understand the steps we need to take – although admittedly the overlapping nature of many of the local differences, medical options, political realities, and research objectives means many activities will fall into both approaches to a greater or lesser extent.

In essence, the underlying thread that connects all this work is uncovering and addressing why cancer is a more common disease in North Wales compared to the rest of the country.

● **This report’s purpose**

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 fifth year, this document plays an important part in our activities, as it helps to define the cancer map across North Wales. The metrics we analyse consistently reveal long-term trends that illustrate the scale of the challenge as well as the vital need for long-term community-level interventions.

To understand the region, we look at the available data on cancer in North Wales and explore it at a county level, covering Conwy, Gwynedd, Flintshire, Wrexham, Anglesey, and Denbighshire. Our analysis overlays multiple data points, including socio-economic information and cancer incidence rates.

This provides us with a granular perspective on how cancer affects our communities and which conditions are having the most significant impact on the people of the North West and its healthcare systems.

● **Empowering communities**

Over the course of our regional reports, we have repeatedly seen more continuity than change, with key cancer rates remaining consistently above the national average. From this, it is clear we are facing a long-term issue that is going to require significant investment at a local level to understand the problems and how we can collectively solve them.

Education initiatives that build healthy life skills and which raises awareness of preventative measures should be a priority. Increasing levels of understanding across populations will help North Wales’ cancer rate start to achieve parity with the national average.

To achieve this, we are committed to implementing outreach projects at a grassroots level. Our presence within communities and region-led research tells us that creating a cancer free future is going to take innovation, investment, time, and collaboration to address localised issues and empower people across North Wales to take control of their own health.



● **Alastair Richards,**
North West Cancer Research CEO

NORTH WALES

Regional Overview



NORTH WALES Regional Overview

Communities in North Wales are managing cancer incidence rates that far exceed those recorded in the rest of the country. The latest data from 2021 shows that the region's incidence rate is 11% higher than the national average, an increase of one percentage point compared to 2020. In total, 688 people per 100,000 in North Wales received a cancer diagnosis during 2021.

Each of the six counties in North Wales exhibit a higher incidence rate than the Welsh norm, with several counties recording significantly disproportionate levels of between 19-21% above average. Asides from Anglesey, every county's incidence rate has moved further from the national average, with Wrexham increasing from four percentage points below the Welsh benchmark to 1% above, while Conwy has moved from a 15% to a 21% higher than average incidence rate.

Specific health challenges can be seen by the fact that 22 of the 24 cancers for which incidence data is available recorded higher rates than the national norm. Some of the cancer types which are most starkly above the rest of the country includes cervical, oesophagus, breast, head and neck, and ovarian cancers, which all recorded a disparity of between 15% and 26%.

Some cancer types have seen especially significant jumps in the difference between the Welsh benchmark and the incidence rate in North Wales, with uterine cancer increasing by seven percentage points to a total of 11% higher than the national average. Similarly, the disparity in colorectal cancer incidence rate has increased by five percentage points while the lung cancer incidence rate has risen from 2% to 7% above the rest of the country.

Certain cancer types are having an outsized impact on populations and healthcare infrastructure within specific areas. For example, Conwy is managing an oesophageal cancer incidence rate 56% higher than the rest of the country, while breast, head & neck, and oral & oropharynx cancers are all recorded in the county at a 40% above average rate.

Other areas facing particularly acute challenges include Denbighshire, which exhibits incidence rates for oral & oropharynx and cervical cancers that are respectively 75% and 71% higher than the rest of Wales. In addition, Anglesey's oesophageal cancer incidence rate indexes 52% above the national norm and Wrexham's cervical cancer incidence rate shows a 38% disparity.

“Higher than average incidence rates were recorded in North Wales for 22 of the 24 cancers for which data is available.”

● Regional Inequality

Understanding local population demographics, lifestyles, the environment, and deprivation levels is vital to recognising how these factors impact the cancer challenges specific communities experience.

Comparing the pervasiveness of cancer at a local level to socio-economic data for North Wales is particularly important, as the inequality statistics for North Wales shows that some areas are experiencing deprivation levels that are up to 25% higher than most of the country.

Pockets of significant deprivation are often located close to areas of comparative affluence, with communities in Flintshire and Gwynedd recording high levels of income deprivation despite being close to relatively high-income areas in Denbighshire.

North Wales’ healthcare landscape is also managing an older than average population, with 46% of the adult population aged 55 years or older, which is four percentage points higher than the rest of Wales.

The three counties with the oldest average populations include:

Anglesey - 51% of the adult population aged 55 years or older

Conwy - 51% of the adult population aged 55 years or older

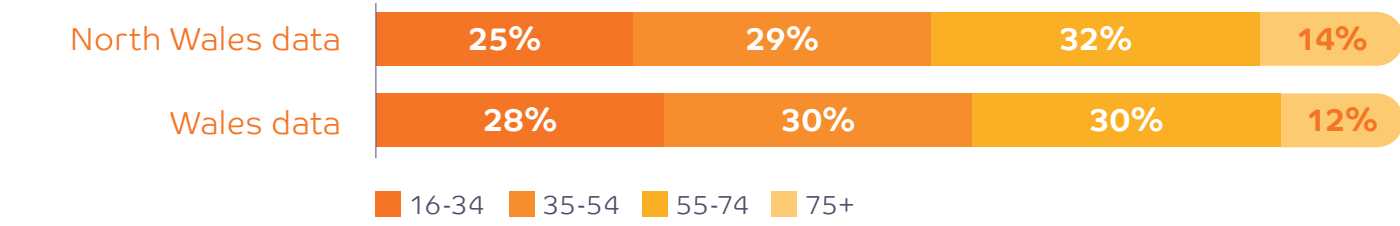
Denbighshire - 49% of the adult population aged 55 years or older

The age demographics of a population play a significant role in the frequency and type of cancers recorded in that area. The large proportion of elderly people could indicate a causative link to the region’s disproportionately high cancer rates. This is illustrated by the fact that the above three counties are also the three North Wales counties with the most above average cancer incidence rates. In contrast Wrexham, which has one of the youngest populations in North Wales, also has the lowest overall cancer incidence rate - although still one percentage point worse than the national average.

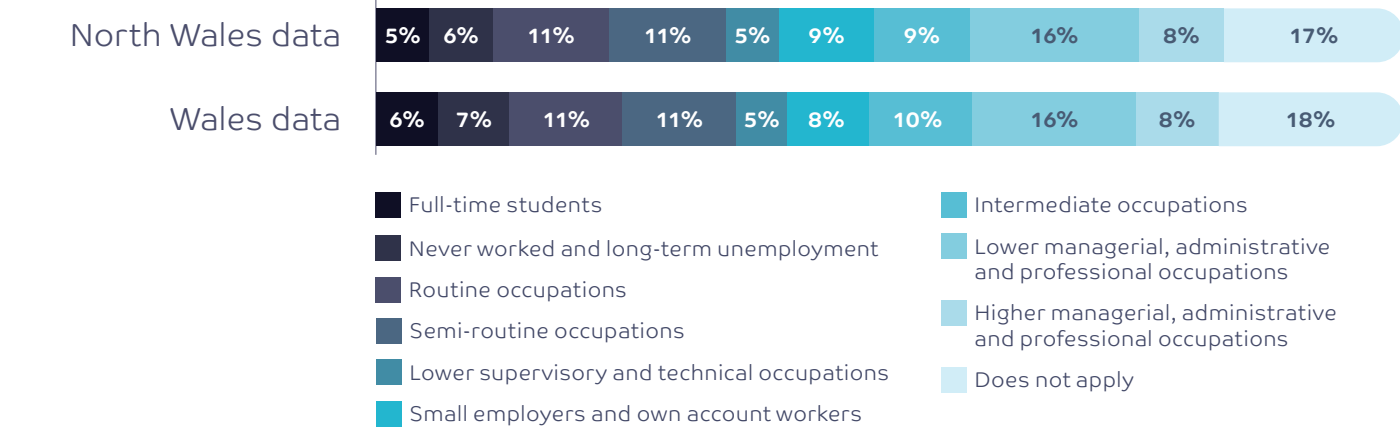


North Wales population profile

Age profile



Occupation profile



“Inequality statistics for North Wales shows some areas are experiencing deprivation levels up to 25% higher than the national average.”

● Cancer impacting women

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

This is especially notable for breast cancer, which across North Wales is being diagnosed at an 18% higher rate than the rest of Wales. All six counties in North Wales recorded a higher than average incidence rate for this disease, with Conwy and Anglesey exhibiting particularly high levels at 40% and 26% respectively above the rest of the country.

The incidence rate for ovarian cancer has increased by two-percentage points in the latest data compared to the 2020 results and is currently tracking at 15% higher than the national benchmark. Only Flintshire exhibits an incidence rate for this disease that's lower than the national average, with Anglesey and Denbighshire's communities being acutely affected, with respective incidence rates that are 55% and 38% higher than the rest of the country.

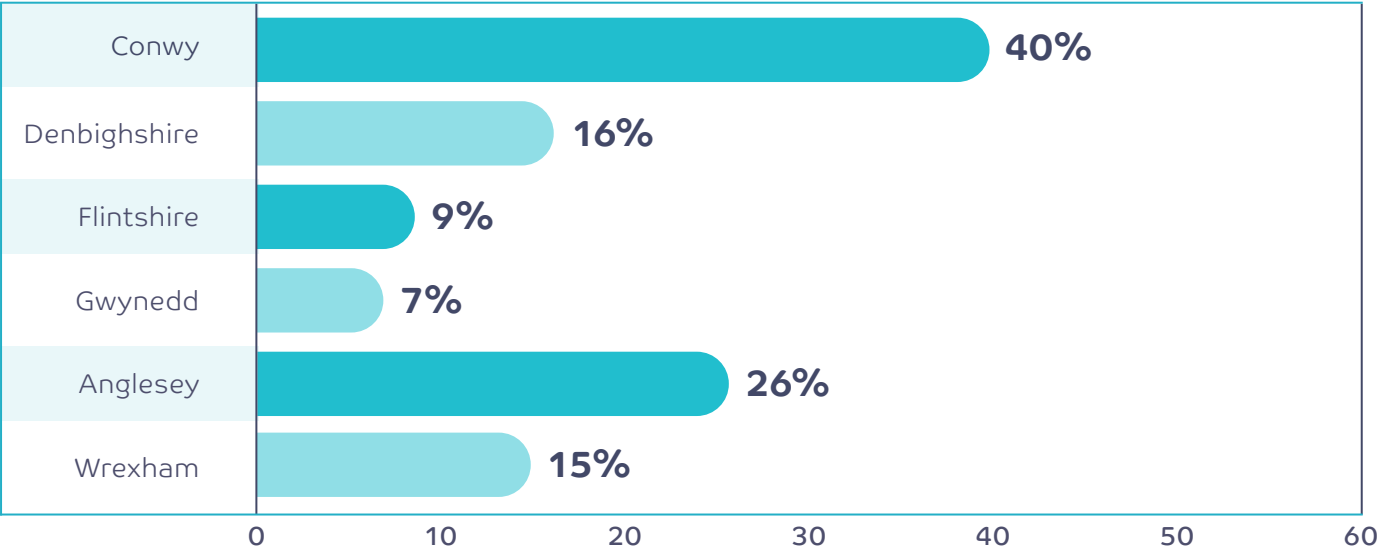
The incidence rate of cervical cancer has increased by 13 percentage points since our 2024 report and is now 26% above the national norm. Only Anglesey indexed at a lower rate for this disease than the Welsh average, with Denbighshire being a notable outlier and recording an incidence rate 71% higher than the national



benchmark. Wrexham, Flintshire, Gwynedd, and Conwy all recorded incidence rates between 21-38% above the Welsh average.

Incidence rates for uterine cancer in North Wales remain above the national average, with this disease recording an 11% disparity. Anglesey, Denbighshire, and Gwynedd all recorded incidence rates that are more than 20% higher than the rest of Wales for this disease.

 **North Wales breast cancer incidence compared to the Welsh average**



● Cancer impacting men

North Wales records higher than average incidence and mortality 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 12% higher in North Wales than it is nationwide. Every county aside from Wrexham recorded a higher-than-average incidence rate for this disease. Anglesey and Denbighshire's communities are especially impacted by prostate cancer, with respective incidence rates 35% and 22% higher than the rest of the country.

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 the national average. Anglesey remains the most acutely affected by this disease, with an incidence rate 42% higher than the rest of the country. Conwy and Denbighshire also recorded markedly above average incidence rates for this disease, at 40% and 28% respectively.



“Anglesey is acutely affected by head and neck cancer, with an incidence rate 42% higher than the rest of the country.”

● Key challenges for North Wales

The data analysed for this report highlights the fact that North Wales has a defined cancer landscape with unique and highly localised challenges.

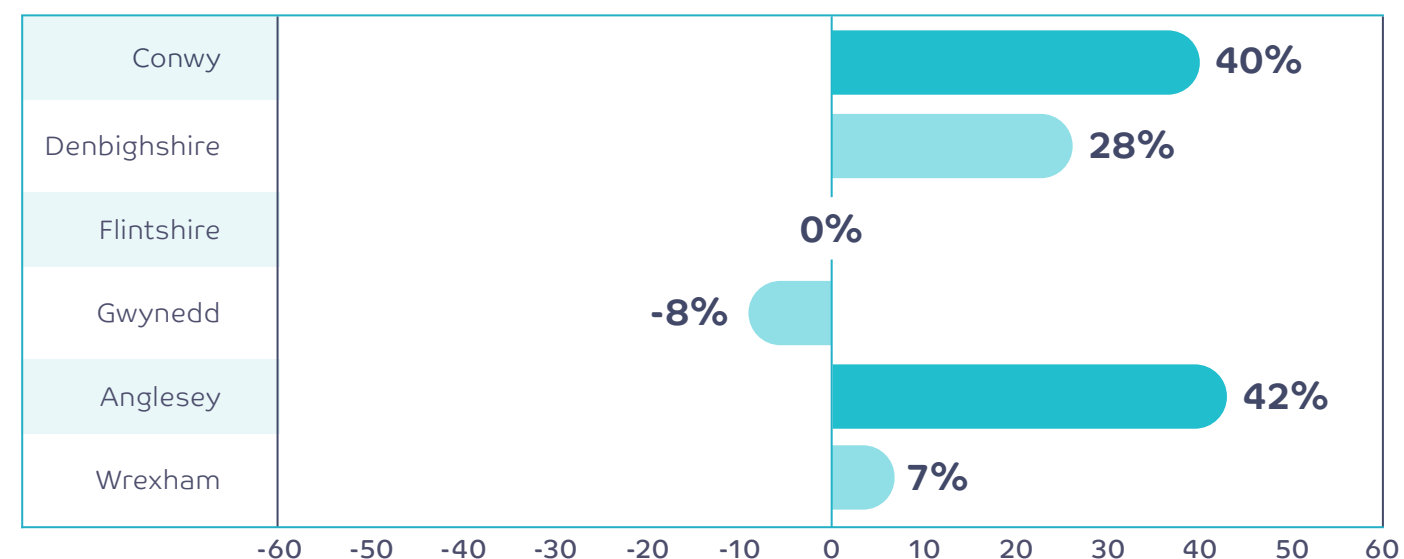
The latest incidence data shows that North Wales is impacted by both cancer as a whole and by specific cancer types at a scale not present elsewhere in Wales. These key variances in the communities of North Wales means the area's healthcare network is facing a complex and highly challenging cancer burden.

High rates of lifestyle related cancers continue to be evident across North Wales. This includes above average incidence rates for:

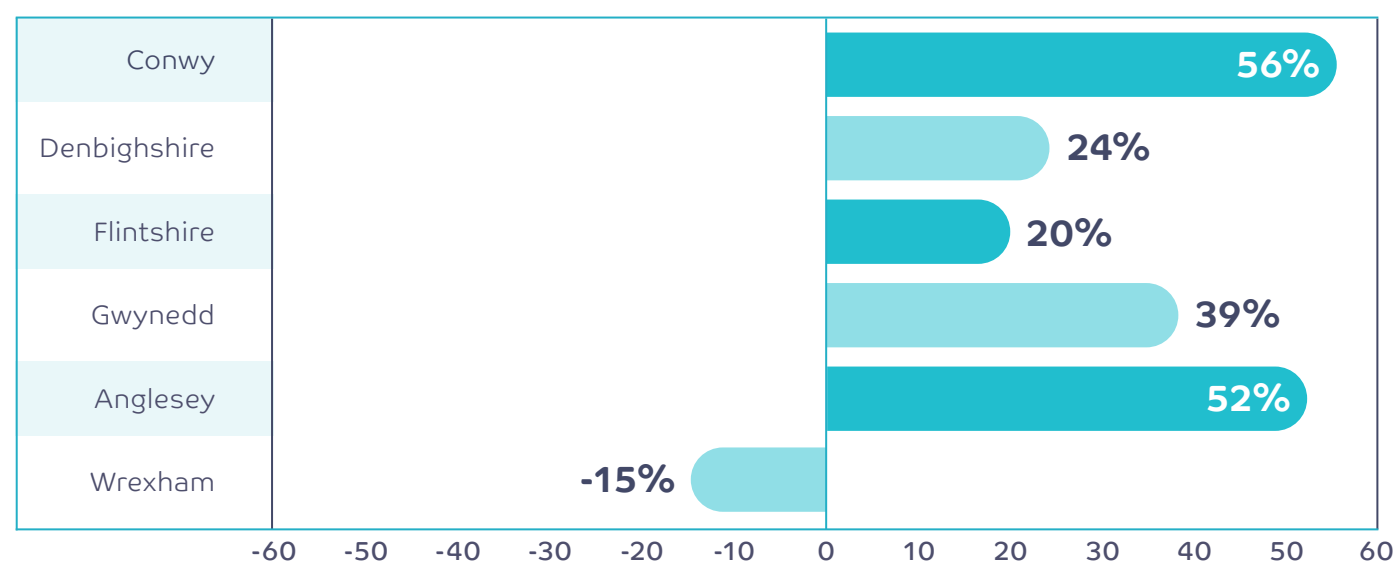
- **Oesophageal: 26%** ■ **Bladder: 11%**
- **Kidney: 12%** ■ **Stomach: 9%**
- **Head & neck: 15%** ■ **Lung: 7%**

Many of these are impacting certain communities to an extent far exceeding what would be expected for Wales as a whole. The following three graphs illustrate how specific diseases, while being high across the whole region, are having a particularly outsized effect within individual counties.

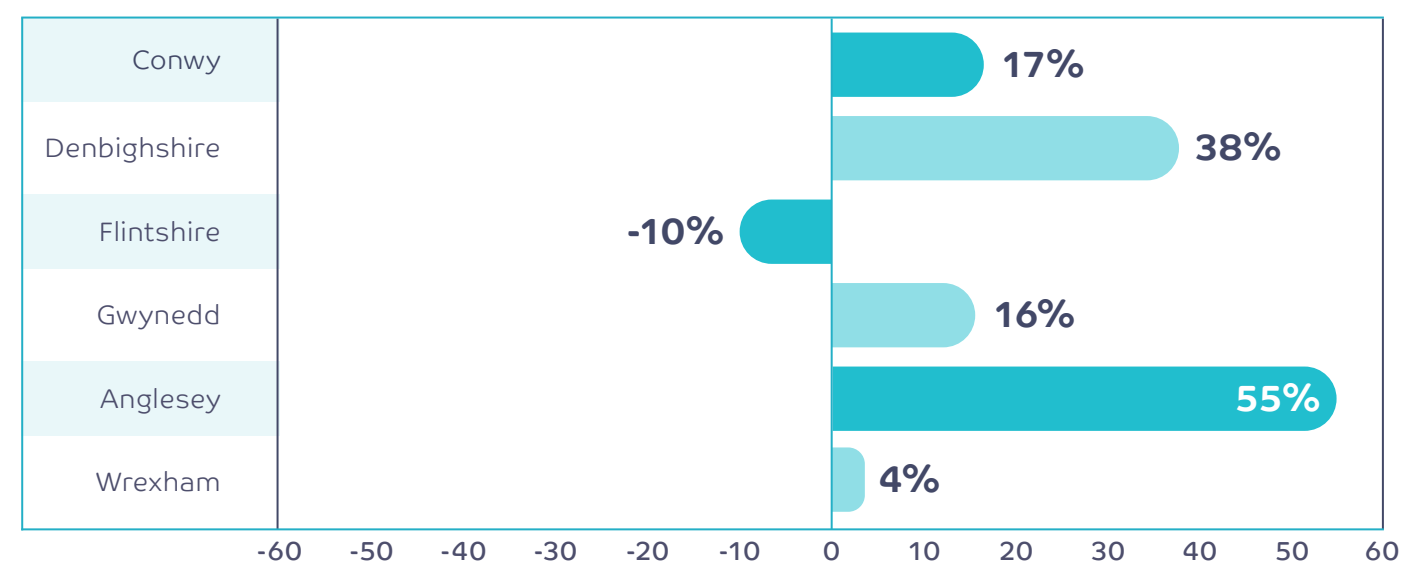
North Wales head & neck cancer incidence rate compared to the Welsh average



North Wales oesophageal cancer incidence rate compared to the Welsh average



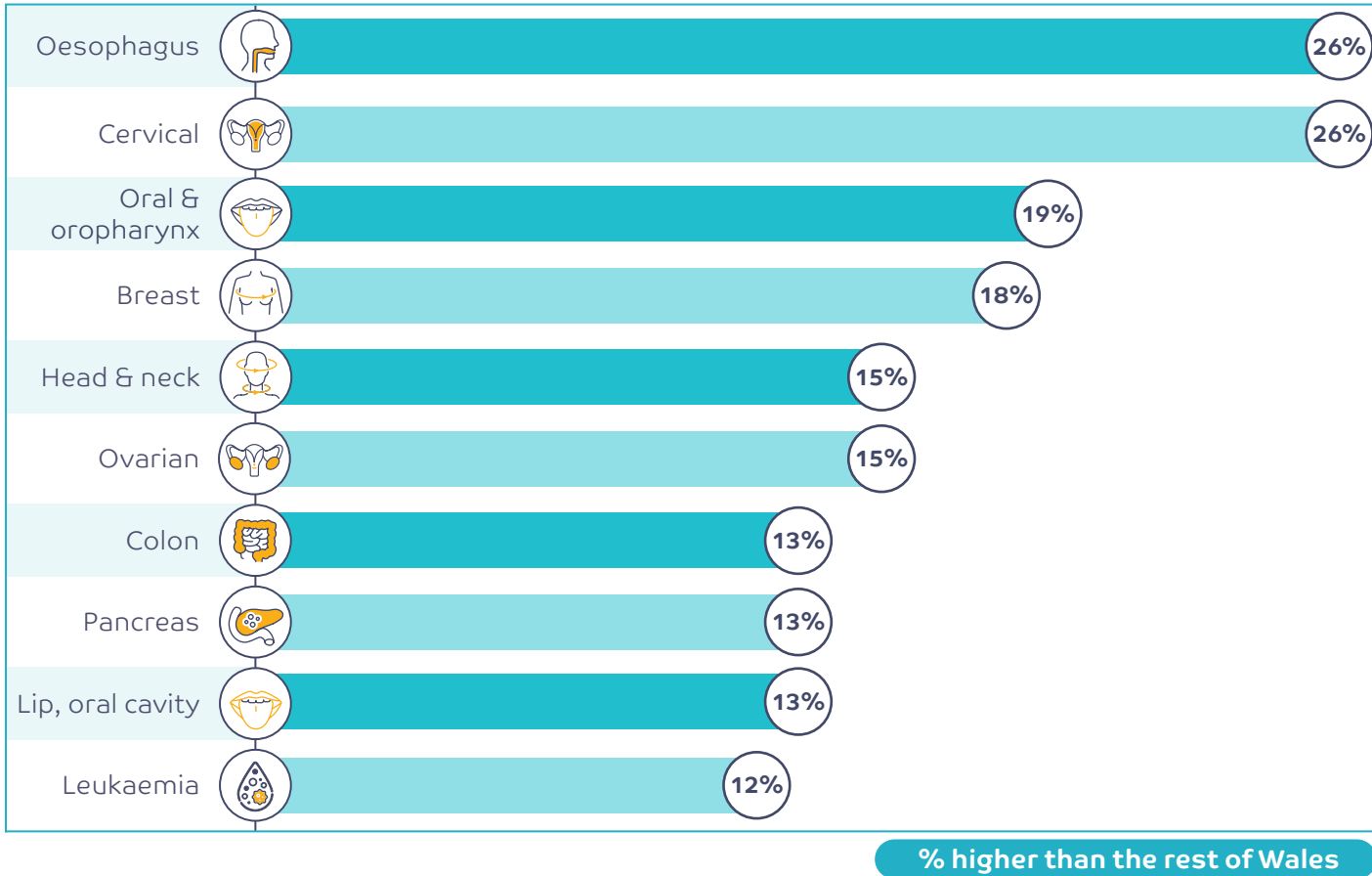
North Wales ovarian cancer incidence rate compared to the Welsh average



The entrenched nature of North Wales’ cancer challenge is underlined by the fact that the region’s incidence rates have remained largely static across multiple years of data gathering. In some instances, the difference between the regional and national picture has been increasing, including for:

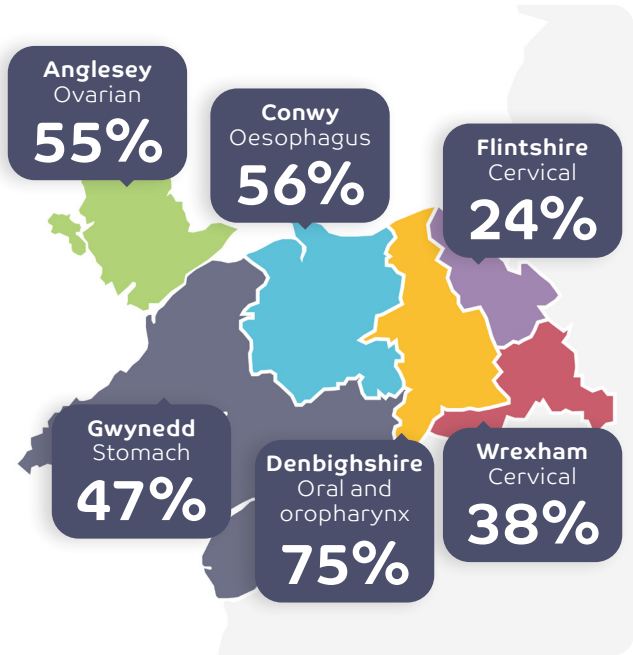
- **Uterine cancer: +7% disparity increase between 2020 and 2021’s incidence data**
- **Lung cancer: +5% disparity increase between 2020 and 2021’s incidence data**
- **Colorectal cancer: +5% disparity increase between 2020 and 2021’s incidence data**
- **Ovarian cancer: +2% disparity increase between 2020 and 2021’s incidence data**

North Wales - top ten over-indexed cancers by incidence



● **Mapping the most prevalent cancers in each county**

While each county in North Wales is managing a disproportionate cancer burden, the specific challenges can significantly vary across the region. As this map shows, the cancer type in each county that over indexes the most by incidence is rarely the same. This snapshot highlights both the severity of the issue as well as the need for localised approaches.



● **INNOVATIVE CANCER TREATMENT RESEARCH:** Our work

Ovarian cancer is among the top ten cancers that occur disproportionately in the region, recording an incidence rate 15% above the national average in our latest data analysis. Certain counties are particularly affected by this disease, with Anglesey and Denbighshire recording incidence rates 55% and 38% above 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 suppress 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.

Communicating with Communities

Education is a central pillar of our approach.

Raising awareness and empowering our communities with key skills, knowledge, and information is essential to helping individuals minimise their risk of being diagnosed with cancer and increasing their chance of an early diagnosis should they contract the disease.

The importance of education-based initiatives in North Wales is underlined by the fact that lifestyle-related cancer types are much more prevalent here than elsewhere. If we can support the region's population to adjust particular behaviours, then it will help to significantly address the disparities in cancer rates described in this report.





● SKIN CANCER AWARENESS - Sun safety campaign

Why skin cancer?

Skin cancer diagnoses are disproportionately higher than the national average across much of North Wales, with Conwy and Denbighshire exhibiting incidence rates respectively 28% and 5% above the rest of the country.

Our campaign

To highlight the danger of UV rays, we implemented a campaign to encourage adults to protect their own skin just as carefully as they do for their children. The campaign was designed to act as a general reminder while myth-busting the perception that sunscreen is only needed abroad. The content consisted of local children's voices in an informal and engaging manner that championed sun safety.

Local children voiced iconic regional characters, including Welsh dragons for North Wales, bees from Manchester, liver birds in Liverpool, and seagulls in Blackpool. To enhance the messaging's local nature, the visuals utilised recognisable landmarks, such as the Point of Ayr Lighthouse, Liver Building, and Blackpool Tower.

The campaign was executed across traditional and online media, with Meta and TikTok content directing audiences to a landing page with

sun safety tips. To spread important information among communities first-hand, a roadshow with a pop-up ice cream stand handed out free sunscreen samples at the Ice Cream Farm in Cheshire, Knowsley Safari Park, and the National Eisteddfod.

The results

The campaign led to a significant amount of engagement and a marked increase in sunscreen application.

- Nearly seven million people saw the online messaging, with more than five thousand engaging directly.
- 58% who saw the campaign claimed they applied sunscreen on a cloudy day compared to only 43% who had not seen the campaign.
- Two thirds strongly agreed that the campaign had made them more likely to apply sunscreen on their children and on themselves.
- 98% stated that it provided them with new information.
- 99% stated that it helped them understand the need to apply sunscreen on warm cloudy days.



● BOWEL CANCER AWARENESS - 'Remember when...'

Why bowel cancer?

Bowel cancer continues to have an outsized impact on communities in North Wales. The region recorded an incidence rate 11% higher than the rest of the country, a disparity which increases to more than 20% for several North Wales counties.

In a move to better prevent and treat bowel cancer, the age of receiving screening kits was lowered to 50-74. However, there is a notable correlation between the uptake of bowel screening and deprivation, which is a critical factor in North Wales, given its many low-income areas.

Our campaign

To improve screening rates, we implemented a campaign about the importance of returning bowel cancer testing kits. We conducted research to discover why people avoid returning kits, which found that fear, disgust and denial were the primary reasons. Our messaging was designed to act as a positive reminder to return kits and make people feel good about the process.

The campaign used nostalgia to connect with the audience, suggesting that if they remember a particular item or moment, such as a chopper bicycle, CRT TVs, or cassette players, then it's time to return their bowel screening kit. To resonate with the target audiences, the messaging was regionalised and case studies with people who had been diagnosed and treated for bowel cancer were utilised.

Research shows men are particularly reluctant to return screening kits, so elements of the campaign were tailored to this demographic. This included working with football clubs to develop adverts in match day programmes featuring moments from the club's history. Ex-Everton and Republic of Ireland footballer Kevin Sheedy was a prominent case study, sharing his story of being diagnosed with bowel cancer at 52 and highlighting the importance of early diagnosis.

The results

Post-campaign analysis showed this approach successfully reached the target audience and encouraged them to complete and return bowel cancer testing kits.

- Media outreach resulted in an interview on ITV Granada Reports with Kevin Sheedy alongside coverage in multiple online and broadcast outlets across the North West as well as significant engagement with social media activity and campaign videos.
- A survey of people within the campaign's geographical target area aged between 54-74 found that 94% were encouraged by the campaign to return a bowel screening kit.
- The campaign was particularly effective at encouraging male and older respondents to complete their screening kits.

DATA

The statistics behind the report



The main metric used for this report was to compare the crude rate of cancer incidence in North Wales and its six individual counties to the average for Wales. We analysed both the total incidence for all cancers as well as the incidence rates for 24 specific cancer types for which NHS data is available.

The data used in this report was sourced for Wales from official sources, primarily the Welsh Cancer Intelligence and Surveillance Unit, the Office for National Statistics (<https://www.nomisweb.co.uk/>), and Public Health Wales (<https://phw.nhs.wales>).

The latest full set of incidence data used in this report covers the 2021 calendar year. There is significant research to suggest that the pandemic affected cancer diagnoses and treatment rates. However, as the main metric used is the difference between the national and regional diagnosis, rather than overall totals, this is still the best indication for the disparity between the likelihood of contracting cancer in North Wales compared to elsewhere.

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.

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