GIG CYMRU NHS WALES | Iechyd Cyhoeddus Cymru Public Health Wales	**Name of Meeting** Knowledge, Research and Information Committee **Date of Meeting** 5 September 2024 **Agenda item:** *3.5a*

Inequalities in Cancer	
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Approval/Scrutiny route:	**Data Science and Analysis Board; Stephanie Smits; Dyfed Wyn Huws; Iain Bell; Alisha Davies**

Purpose
This paper summarises the findings to date from the 'Inequalities in cancer' project. The work links Census 2011 data to cancer registration data at the individual level to report on information not routinely collected in NHS data. Phase 1 has considered the impact of variables such as ethnicity on cancer incidence.

Recommendation:				
APPROVE ☐	CONSIDER ☒ **Error! Bookmark not defined.**	RECOMMEND ☐	ADOPT ☐	ASSURANCE ☐
The Committee is asked to: • **Note** and **consider** the progress being made against our commitment to influence the wider determinants of health				

Link to Public Health Wales Strategic Plan Public Health Wales has an agreed strategic plan, which has identified seven strategic priorities and well-being objectives. This report contributes to the following:	
Strategic Priority/Well-being Objective	1 - Influencing the wider determinants of health 5 - Delivering excellent public health services to protect the public and maximise population health outcomes
Strategic Priority/Well-being Objective	Choose an item.
Strategic Priority/Well-being Objective	Choose an item.

Summary impact analysis	
Equality and Health Impact Assessment	Not required – the report will be used to inform stakeholders
Risk and Assurance	N/A
Health and Social Care (Quality and Engagement) (Wales) Act	This work will highlight potential inequalities/inequities which were not previously understood.
Financial implications	Work will be covered by 2 WTE analysts within the normal resourcing for the cancer analyst team.
People implications	N/A

1. Purpose / situation

This work considers how cancer incidence varied by broad ethnic group and other sociodemographic factors. Research shows that there are inequalities in cancer incidence rates by many socio-demographic factors at the *individual* level, including by certain protected characteristics. Such research – or surveillance at the whole population level - has not been extensively conducted amongst the Welsh population. Furthermore, the Public Health Wales Welsh Cancer Intelligence and Surveillance Unit's (WCISU) routine statutory official statistics on cancer incidence cannot currently report on inequalities at the individual level – except for age and sex. This is because such data is not available, or poorly recorded, in the multiple sources of raw NHS data that WCISU uses to compile the whole-population Wales cancer registry. Nevertheless, inequalities by area-deprivation, but not individual level, are currently reported in statutory and official statistics using the Welsh Index of Multiple Deprivation.

2. Background

The Data, Knowledge and Research Directorate's cancer analysis team and WCISU, along with the CAN Research Group set-up by WCISU to examine the COVID-19 pandemic effects on cancer incidence and outcomes in Wales, are conducting a comprehensive assessment of cancer inequalities. The aim is to identify inequalities in cancer incidence in Wales at the individual level for a range of socio-demographic factors, including by ethnicity (a protected characteristic), occupation, household tenure, and over-crowding.

This programme will be completed in two phases;

- Phase 1 will link the WCISU cancer registry data to individual level ONS Census 2011 data within the SAIL Databank.
- Phase 2 will utilise linkage of more recent cancer registry data to census 2021, as well as census 2011, to examine cancer incidence inequalities for a broader range of individual level factors and protected characteristics, and it will develop research questions to help understand the inequalities in Wales.

This work is of interest to the Welsh Government-led NHS Wales Health Inequalities Group. This also supports the Public Health Wales mission to increase healthy life expectancy, improve health and well-being and reduce inequalities for everyone in Wales, now and for future generations. We must also endeavour to report our statistics and epidemiology by protected characteristics.

3. Description/Assessment

This paper and accompanying presentation presents a summary to date of Phase 1 of the programme.

Key findings are

- After adjusting for differences in age structure, rates of new diagnoses remain highest in the white population for all cancers combined (excluding non-melanoma skin cancer) at 532.6 per 100,000. The lowest rate of 332.9 per 100,000 is in the Asian/Asian British group. The rate in the white group is also significantly higher than the Black/African/Caribbean/ Black British group and the 'Other' ethnic group. Similar studies investigating the differences in cancer incidence by broad ethnic group in England also found a lower risk of cancer in non-white ethnic groups when compared to the white group (Christine Delon, 2022).

- The analysis also shows that the rate of newly diagnosed cancers *unadjusted* for age is much higher in the white population than any other ethnic group. This is largely due to the differing age-structure between the study populations. The white ethnic group have a much older population, and therefore a much larger proportion of the population at risk of developing cancer.

- It is not entirely clear why the phase 1 finding of the overall *age-adjusted* cancer incidence rate remains the highest in the white population, compared to the other ethnic groups, as these differences cannot be explained by the large age differences between the groups.

- Exploration of other societal factors, after adjusting for age, found higher incidence of all cancer in those living in overcrowded households. Also, a higher proportion of those with more manual occupations, than non-manual occupations, were likely to be diagnosed late.

Next steps

We will progress to Phase 2 to examine these differences further.

Phase 2 of this work will include cancer registration data up to 2021 allowing insight into the impact of the Covid-19 pandemic. The work is in early stages of development, but will include a multivariate analysis with a view to understanding how and *why* different factors (including ethnicity) impact a person's risk of developing cancer.

The work will be shared with the NHS health inequalities data group and made available to wider stakeholders, including the wider public, clinicians, third sector and other policy makers and influencers.

Caveats and data considerations

SAIL's ethnicity spine table was used to identify ethnicity for 12.4% of cases where there was no ethnicity recorded in the Census 2011 data, or where cancer cases didn't map to a Census 2011 record. In total, an ethnic group was identified for 98% of cancer registration records.

The cancer diagnosis data covers 2011-2020, with cases being assigned variables based on the 2011 census. For the calculation of crude and age-standardised rates, the counts for ethnicity, occupation, overcrowding and household tenure were based on the 2011 census variables or ethnicity spine, and population counts based on the 2021 census results. This is because the 2021 census was the only available data for the population counts. As *some* demographic characteristics, including household status, can change over a 10 year period, the different timeframes for each dataset should be considered when interpreting the results. Some outputs are suppressed for privacy disclosure control.

References

Christine Delon, K. F. (2022). Differences in cancer incidence by broad ethnic group in England, 2013–2017. *british journal of cancer* , 1765-1773.

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