Health Equity Audit of the NHS Health Check Programme in Oxfordshire, 2013-18

December 2018

OXFORDSHIRE COUNTY COUNCIL

NHS HEALTH CHECK

Helping you prevent
diabetes
heart disease
kidney disease
stroke & dementia

Executive summary

Local Authorities have now been operating NHS Health Checks for a full five-year cycle, from April 2013 to March 2018. Every eligible person should therefore have been offered an NHS Health Check by their Local Authority and, in Oxfordshire, almost every eligible person was: 98.8% of Oxfordshire's eligible population were offered an NHS Health Check. This is better than the national average (90.9%).

A higher proportion of Oxfordshire residents took up the offer and received an NHS Health Check than the national average too (50.4% vs 48.7%).

Resultantly, a higher proportion of Oxfordshire residents received an NHS Health Check (49.8%) compared to the national average (44.3%). All of these differences are highly statistically significant.

These are key indicators, reported in the Public Health Outcomes Framework, which demonstrate the thriving NHS Health Check programme in Oxfordshire.

However, there is room for improvement. Whilst a very high proportion of eligible residents are offered an NHS Health Check, carers, people with serious mental illness and people with a learning disability experience high levels of cardiovascular disease yet appear less likely receive an NHS Health Check.

After receiving the NHS Health Check offer, older people, women and White people were more likely to receive an NHS Health Check than younger people, men and ethnic minorities. Socially deprived individuals are also probably less likely to receive an NHS Health Check. This is important because men, ethnic minorities and deprived individuals all experience higher than average rates of cardiovascular disease, and therefore stand to benefit from NHS Health Checks.

The biggest improvements in the equity of access to NHS Health Checks would come from increasing uptake in men and individuals from deprived sections of the community. These groups are underserved and need cardiovascular disease prevention.

Increasing uptake for ethnic minority groups would also improve equity, though the gains here are likely to be marginal given the relatively small numbers involved and reasonable uptake among these groups already.

Overall, Oxfordshire is good at providing equal care across all levels of need. However, to be truly equitable, service provision to those most in need should increase in the next five-year cycle of NHS Health Checks.

At a glance

The NHS Health Check programme in Oxfordshire performs better than the national average.

But some groups are still less likely to receive an NHS Health Check than the general population.

Men, ethnic minorities, deprived individuals, carers and others experience more cardiovascular disease but are less likely to receive an NHS Health Check.

The programme needs to target these groups in the next five-year cycle.

Contents

1. Background

1.1 What is an NHS Health Check?

The NHS Health Check is a check-up for men and women in England aged 40-74. NHS Health Checks aim to improve the health and wellbeing of adults through the promotion of earlier awareness, assessment, and management of the major risk factors and conditions driving premature death, disability and health inequalities in England. These conditions are the major cardiovascular diseases in England – ischaemic heart disease, stroke, type 2 diabetes, chronic kidney disease and dementia. People with existing cardiovascular disease, or those who are being treated for certain long-term conditions, are not eligible for an NHS Health Check.

An NHS Health Check risk assessment takes about 20-30 minutes. A healthcare professional – usually a nurse or healthcare assistant – takes a simple lifestyle (smoking, alcohol and physical activity) and family history, measures the service user's weight and height and blood pressure. A blood test is taken for cholesterol, and for kidney function (and diabetes, if they have high blood pressure and/or a high body mass index (BMI)). The outcome from the risk assessment enables for a cardiovascular risk score to be calculated. If risk factors are identified as part of an NHS Health Check, people are referred for advice, treatment or counselling to lower their risk – for example, someone with a high cardiovascular risk score may be started on statins[1]. The NHS Health Check process is illustrated in Figure 1.1.

Specifically, NHS Health Checks aim to identify and reduce:

- Lifestyle factors such as smoking, poor diet, obesity, excessive alcohol consumption and physical inactivity,
- Medical conditions such as high blood pressure, high cholesterol, diabetes.

The programme also aims to raise awareness of dementia for those aged 65-74.

1.2 Who is responsible for NHS Health Checks?

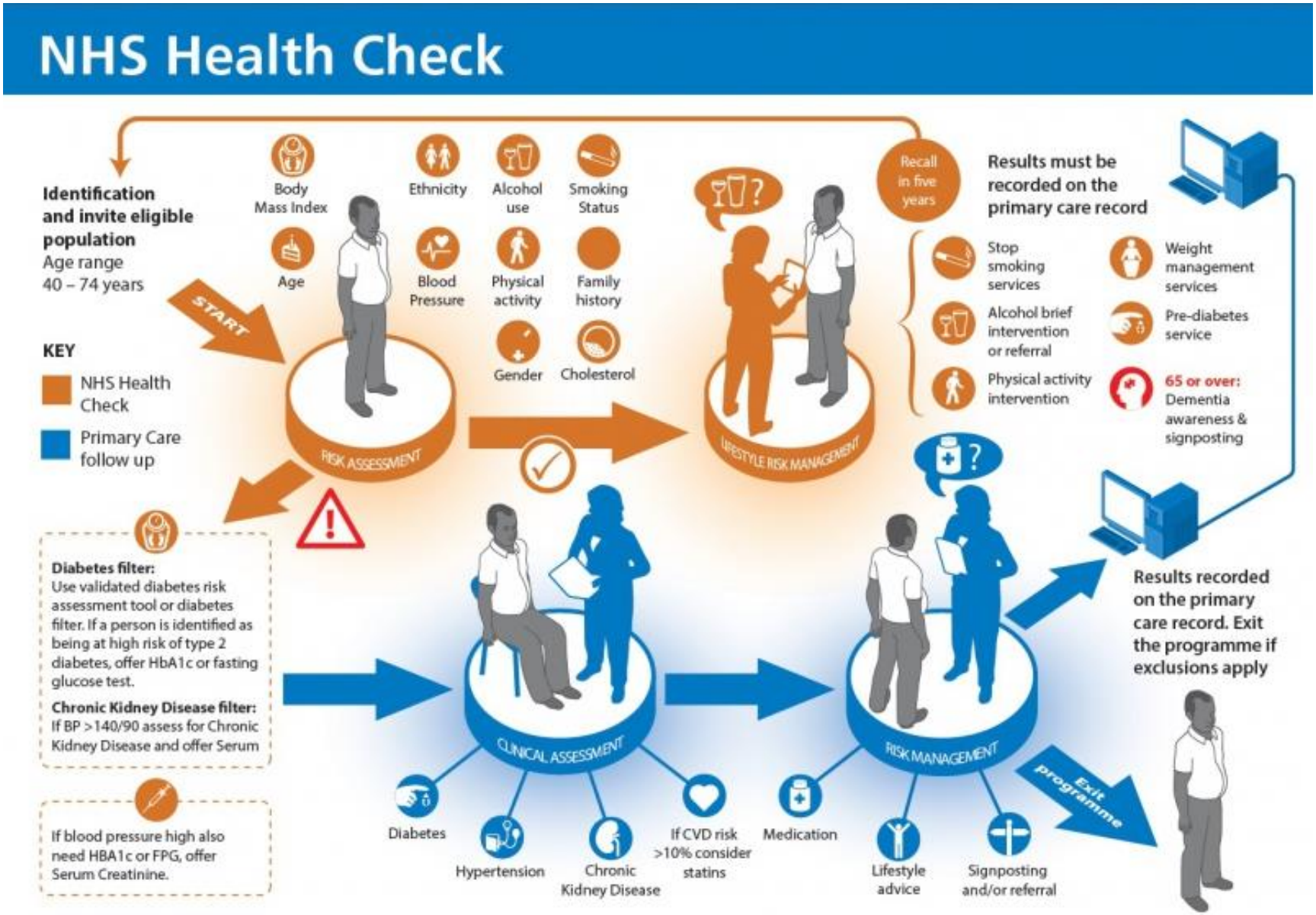
Since April 2013, Local Authorities have had a statutory responsible to ensure every eligible person is offered an NHS Health Check every five years, and to ensure that the uptake of NHS Health Checks continually improves. These are both targets in the government's Public Health Outcomes Framework (targets 2.22iii and 2.22iv)[2].

The NHS Health Checks programme is a five-year cycle – every eligible person is offered an NHS Health Check once in the five years (so 20% of all eligible people are offered an NHS Health Check every year). As of 31st March 2018, Oxfordshire County Council (OCC) has been responsible for a full five-year cycle of NHS Health Checks. All NHS Health Checks in Oxfordshire are provided exclusively by GP practices (some other Local Authorities use a range of service provider types, including community pharmacies and third-party outreach services).

[1] National Health Service. 2016. What is an NHS Health Check? URL: https://www.nhs.uk/conditions/nhs-health-check/what-is-an-nhs-health-check-new/

[2] Department of Health. 2016. Improving outcomes and supporting transparency Part 2: Summary technical specifications of public health indicators.

Figure 1.1: The NHS Health Check process.



1.3 What is health equity and why is it important?

Health equity is the absence of avoidable, unfair, or remediable differences in health among different groups of people (e.g. different genders, ages, ethnicities or social status). Health equity implies that everyone should have a fair opportunity to attain their full health potential.

Equity is related to, but not the same as, equality. Equality involves treating everyone the same, achieving equity may involve providing more resources to those most in need to eliminate avoidable inequality. These differences are further explored in Box 1.1 and Figure 1.2. Improving health equity is a key statutory responsibility of Local Authorities, as outlined under the Health and Social Care Act (2012) and the Equalities Act (2010). It is a national[3] and a local[4] priority.

NHS Health Checks have the potential to improve health equity for several reasons:

1. They are available to anyone of the right age and medical background, so every eligible person should have equal access to NHS Health Checks.
2. Risk factors for cardiovascular diseases are unequally spread across society.
3. NHS Health Checks provide a gateway to other services – if hard-to-reach groups engage with the NHS Health Check, barriers to seeking care may reduce.

Additionally, because various measures of NHS Health Check performance are collected routinely and reported nationally, statistics are readily available that enable the equity of programme to be evaluated.

Box 1.1: What is the difference between equity and equality in health?

Equality: As the name suggests, equality is the provision of equal services for all. For example, the NHS Health Checks are available to all people aged between 40-74 if they do not have a pre-existing cardiovascular disease, regardless of gender, ethnicity or deprivation. As long as everyone eligible is invited, there is equality of provision to all of those groups.

Equity: The World Health Organisation defines health equity as the absence of avoidable or remedial differences among groups of people[5]. Health inequities are therefore unfair, unjust, avoidable, unnecessary systematic differences in health status between different groups[6].

In the context of NHS Health Checks, it is known that men, certain ethnic groups and the socially disadvantaged experience more cardiovascular disease. To achieve health equity, these groups may require *more* (i.e. unequal) access to preventive services like NHS Health Checks. The difference between equality and equity is illustrated in Figure 1.1.

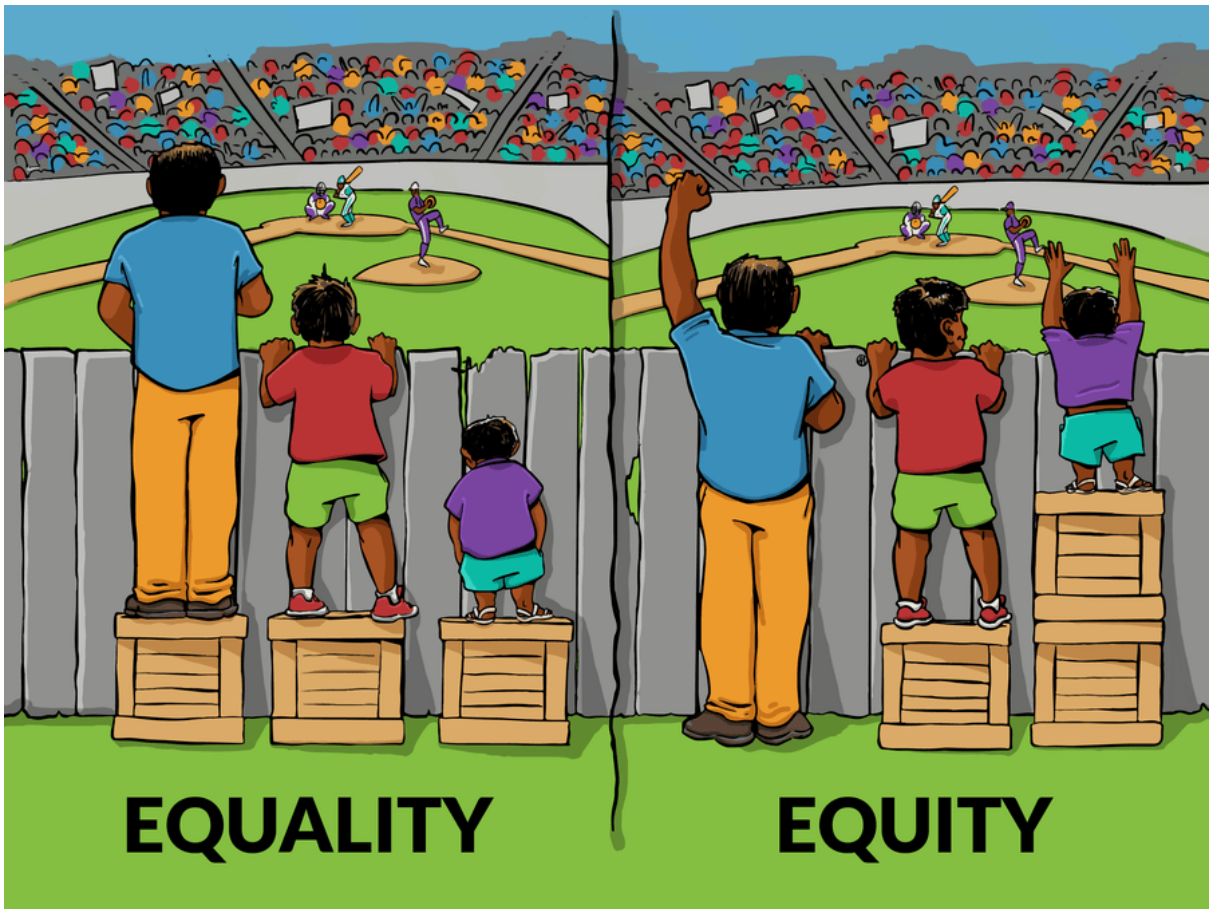
[3]Department of Health. 2016. Reducing health inequalities. Letter from the secretary of state. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/506771/SofS_letter_health_inequalities_acc.pdf

[4] Oxfordshire Commission on Health Inequalities. 2016. Addressing Health Inequalities in Oxfordshire: Report from the Independent Commission on Health Inequalities in Oxfordshire. URL: http://www.oxfordshireccg.nhs.uk/documents/corporate/health-inequalities-headline-report.pdf

[5] World Health Organisation. 2018. URL: http://www.who.int/healthsystems/topics/equity/en/

[6] Whitehead, M. 1991. The concepts and principles of equity and health. *Health Promotion International.*

Figure 1.2: The differences between equality and equity.
Source: Interaction Institute for Social Change. Artist: Angus Maguire.



1.4 What did the previous health equity audits show?

Two previous health equity audits of NHS Health Checks have been completed covering two of the five years for which OCC has been responsible for NHS Health Checks. They were conducted in October 2014[7] and August 2017[8] and covered financial years 2013-14 and 2016-17 respectively (years 1 and 4 of the previous 5-year cycle of the programme).

The previous health equity audits concluded that:

- Oxfordshire was good at offering NHS Health Checks to the vast majority of eligible people.
- Some GP practices and some districts were better than others at achieving high uptake of NHS Health Checks.
- People living in deprived areas, men, younger people and certain ethnicities (including Bangladeshi men and women, Caribbean women and Chinese men), appeared less likely to attend an NHS Health Check (once invited).
- Given the relatively small numbers and the year-on-year variation, both audits recommended a re-audit of the full 5-year cycle in 2018.

[7] Behbod, B. & O'Neill, E. 2014. Health Equity Audit of the NHS Health Check Programme across Oxfordshire in 2013-14. *Oxfordshire County Council internal document.*
[8] Moore, L., O'Neill, E. et al. 2017. Health Equity Audit of the NHS Health Check Programme in Oxfordshire 2016-17. *Oxfordshire County Council internal document.*

1.5 Aims of this audit

This audit aims to build on previous health equity audits of NHS Health Checks in Oxfordshire. This audit will evaluate the entire five-year cycle of NHS Health Checks from 1st April 2013 to the 31st March 2018.

Specifically, the objectives of this audit are:

1. Assess and report key indicators, including:
    - The number of people eligible
    - The number of people who were offered an NHS Health Check
    - The number of people who received an NHS Health Check.
2. To profile the eligible population according to equity indicators of interest.
3. To profile the population who received an NHS Health Check according to the same indicators.
4. To identify populations for whom provision of service is inequitable.
5. To recommend ways to understand and address these inequities.

Section 2:
Methods of this health equity audit

OXFORDSHIRE COUNTY COUNCIL

NHS HEALTH CHECK
Helping you prevent
diabetes
heart disease
kidney disease
stroke & dementia

2. Methods

Methods were based on guidance from Public Health England (PHE)[9] and build on recommendations from previous health equity audits conducted in Oxfordshire.

2.1 Data sources

NHS Health Check data

Tabular data were extracted from Quest before the expiry of the 5-year contract with The Computer Room (TCR) in May 2018. These data included details on the age (in five-year age groups), gender and ethnicity of those who received an NHS Health Check and those who were offered an NHS Health Check but did not receive one. This tabular data was collated into one summary Microsoft Excel spreadsheet.

Because of the limits of this tabular data, it was not possible to identify links between individuals, i.e. a 63 year old White British woman would show up as one person aged between 60-65 of unknown gender and ethnicity, one woman of unknown age or ethnicity, and one White British person of unknown gender or age.

Unfortunately, the available data sources did not include any details about the eligible population if they were not offered an NHS Health Check. Different proxy populations are therefore used to approximate the eligible population, including:

- the population offered an NHS Health Check,
- the 2017 mid-year population, as estimated by the Office for National Statistics (ONS),
- 2011 census data.

Different data sources are drawn upon in the text where relevant, and the chosen proxy population is explained. Where comparisons using different proxy populations would give different results, this is highlighted.

Need

Need for NHS Health Checks was based upon the prevalence of various cardiovascular diseases which the NHS Health Check aims to prevent. These are primarily coronary heart disease, stroke, diabetes and chronic kidney disease. The prevalence of each disease for each GP practice in Oxfordshire were extracted from National General Practice (GP) Profiles on the PHE Fingertips website[10].

Deprivation

2015 Index of Multiple Deprivation (IMD) scores for each GP practice in Oxfordshire were extracted from National General Practice Profiles on the PHE Fingertips website.

[9] Public Health England. 2016. NHS Health Check Programme: Health Equity Audit Guidance. Available at: https://www.healthcheck.nhs.uk/document.php?o=1307

[10] Public Health England. 2018. National General Practice Profiles. URL: https://fingertips.phe.org.uk/profile/general-practice/

2.2 Steps in the analysis

Following guidance from PHE, the eligible population was first profiled (section 3).

The NHS Health Check programme in Oxfordshire was then evaluated for equity of access, including:

a. Population offered an NHS Health Check,
b. Population receiving an NHS Health Check.

At each stage, the population receiving an NHS Health Check and the eligible population were compared according to several equity indicators of interest (Table 2.1).

2.3 Statistical methods

Analyses were conducted on Microsoft Excel and in R[11].

Binary and categorical variables were compared using chi squared statistics. Linear models were constructed to assess the relationship between continuous variables, and the relationship plotted (with confidence intervals) on a scatter graph. The p value (the probability that the observed relationship is due to chance) was calculated and displayed on these graphs.

[11] R Core Team. 2014. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL http://www.R-project.org/

Table 2.1: Equity indicators of interest.

Equity indicator	Definition
Age	Age (in years) at the time of the Health Check, grouped into 5-year groups for the eligible population: 40-44, 45-49… 70-74
Gender	Female or male as recorded by GPs in QUEST
Ethnicity	Ethnic group as recorded by GPs in QUEST. Some groups were combined due to small numbers and to reduce the number of comparisons, which increases the chance of a type 1 error (a statistical false positive). Ethnic groups analysed were based on definitions from the Office for National Statistics that are used in the UK census: • White (White British, White Irish, any other White background) Mixed (White and Black Caribbean, White and Black African, White and Asian, any other Mixed) • Asian (Indian, Pakistani, Bangladeshi, Chinese, any other Asian background) • Black (Caribbean, African, any other Black background) • Any other ethnic group.
Practice level deprivation	England 2015 IMD scores for the catchment area covered by each GP practice[12]
Patient level deprivation	Used in previous audits but not available with the current dataset
Carer	Registered as a carer and reported by GPs in QUEST
Serious mental illness	Registered serious mental illness and reported by GPs in QUEST
Learning disability	Registered learning disability and reported by GPs in QUEST
Geographical area	Location of GP practices across five Oxfordshire districts (Cherwell, Oxford, South Oxfordshire, West Oxfordshire and Vale of White Horse)

[12] For more information on the 2015 English IMD see: https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015

Section 3: Oxfordshire's eligible population

OXFORDSHIRE COUNTY COUNCIL

NHS HEALTH CHECK

Helping you prevent
diabetes
heart disease
kidney disease
stroke & dementia

3. Oxfordshire's eligible population

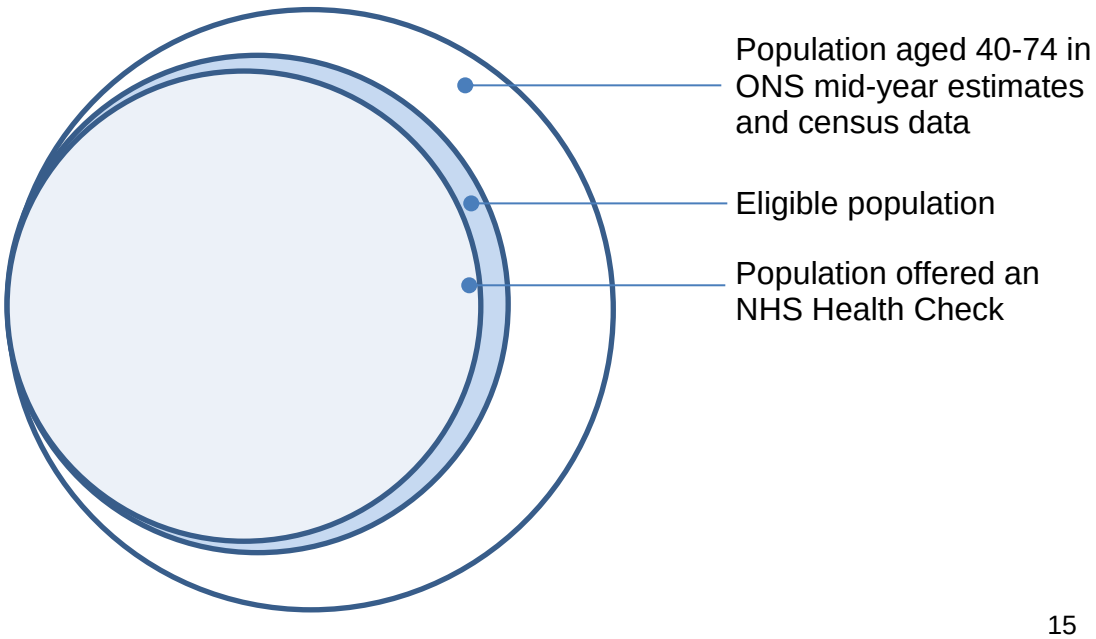
3.1 Profiling the eligible population

There are numerous possible approaches to profiling the eligible population, each of which is used at different points in this chapter. One approach is to use the latest Oxfordshire data derived from national sources. The Office for National Statistics (ONS), for example, releases mid-year estimates of men and women aged between 40 and 74 every year with a detailed age breakdown. The most recent (2011) census has more data pertaining to other equity indicators of interest (such as ethnicity), but is now several years out of date. Additionally, not everyone captured in national statistics is eligible, as some have pre-existing cardiovascular diseases (for example, in 2017, PHE estimated that 31.4% of Oxfordshire's ONS mid-year estimates were not eligible. This is adjusted to reflect the age-sex population profile of the Local Authority, by applying national age-specific rates of the population on a CVD register to our Local Authority population).

In Oxfordshire, almost 99% of eligible people were offered an NHS Health Check, so it may be reasonable to use the population offered an NHS Health as a proxy for the eligible population. However, this would miss around 2,000 Oxfordshire residents, who may belong to groups that experience inequity. For reference, this is probably similar to the entire population of Black people living in Oxfordshire aged between 40-74 (hypothetically, even with this a high proportion of the eligible population offered an NHS Health Check, important groups may still be missed). However, this risk of this is low given GP practices use a randomised invitation methodology.

The different approaches to profiling the eligible population are illustrated in Figure 3.1. In general, in this chapter, the population offered an NHS Health Check is used as a proxy or the eligible population, but where this differs significantly from ONS/census data this is highlighted.

Figure 3.1: Different populations that may approximate the eligible population.



3.1.1 Age

There is an understandable and expected decline in the number of people eligible for NHS Health Checks. This is partly because there are fewer people nationally at older ages compared to younger ages, and that as people age they are more likely to develop a cardiovascular condition which would make them ineligible for an NHS Health Check. Whilst there appears to be a steady decrease in the numbers eligible in each age group according to the population offered an NHS Health Check (Figure 3.2), ONS estimates show a slightly less linear trend (Figure 3.3).

Figure 3.2: Number of people in each age group offered an NHS Health Check in Oxfordshire between April 2013 and March 2018.

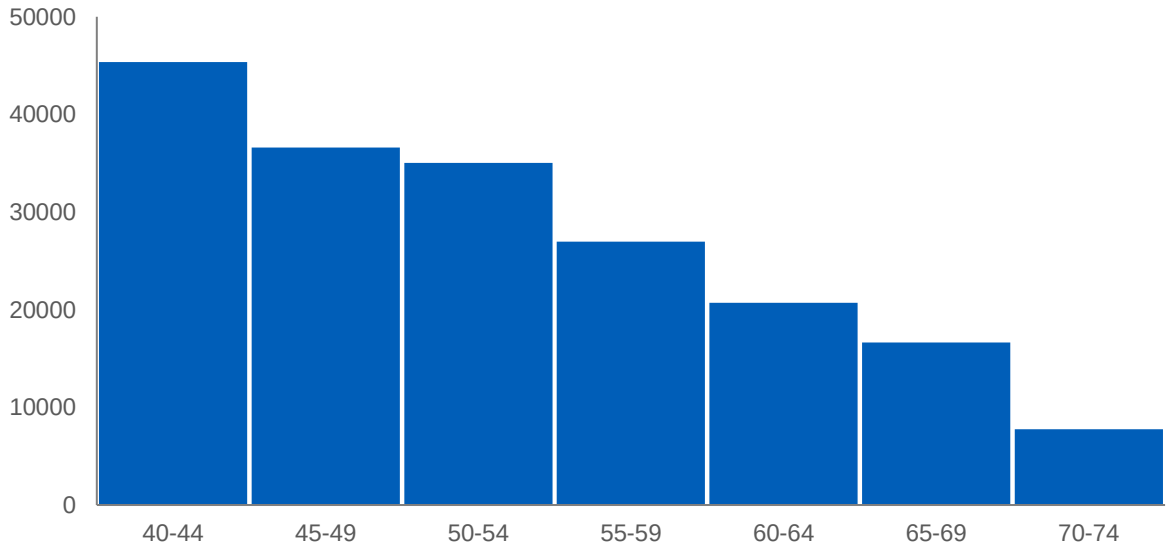
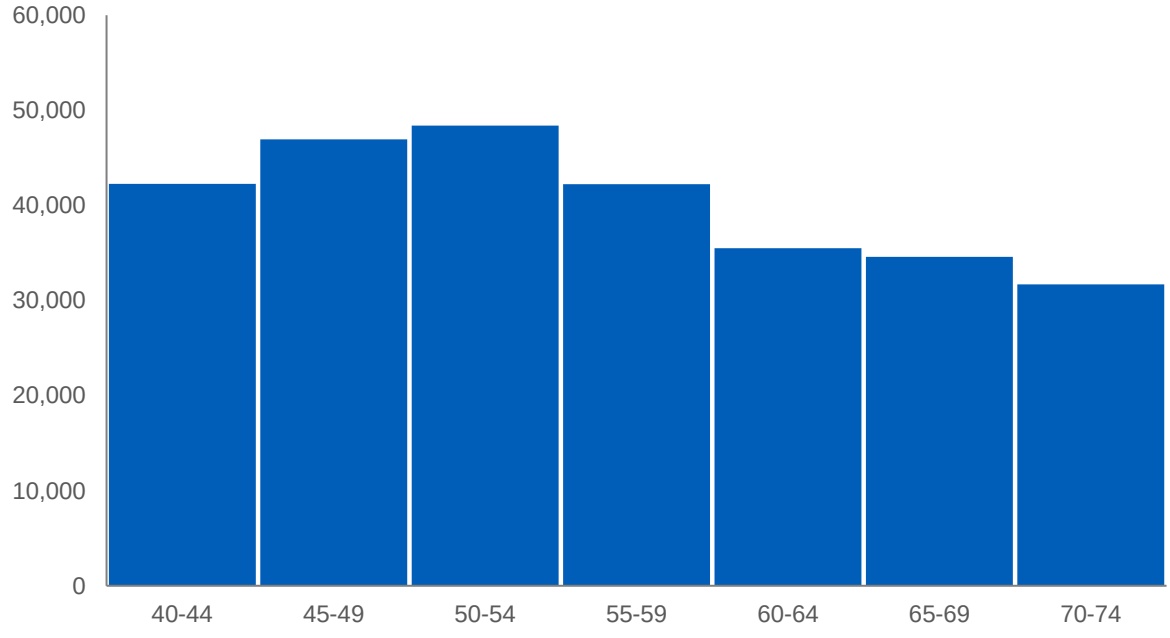


Figure 3.3: Number of people in each age group in Oxfordshire, according to ONS 2017 mid-year estimates.



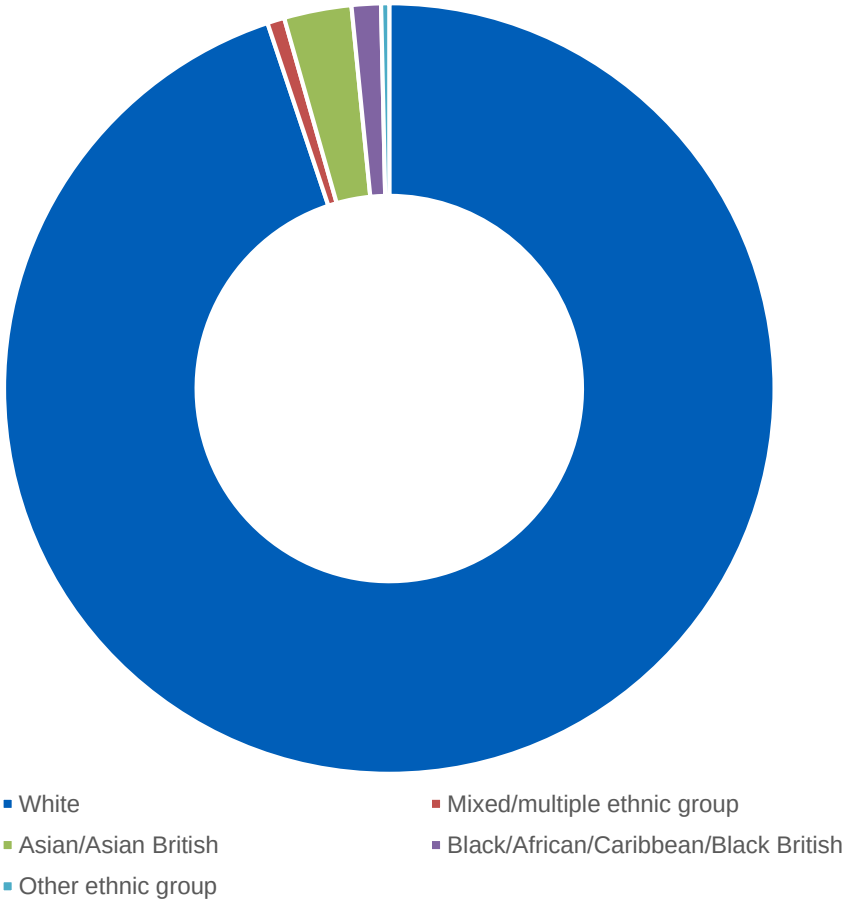
3.1.2 Gender

There are slightly more women than men in Oxfordshire. Women represent 51.1% of the Oxfordshire population aged 40-70 according to the 2017 mid-year estimates from ONS.

3.1.3 Ethnicity

White is the majority ethnic group in Oxfordshire, making up 95% percent of the population aged between 40 and 74 according to the 2011 census. Asian is the next largest ethnic group, constituting almost 3%, Black is the next largest ethnic group, making up just over 1% of the population.

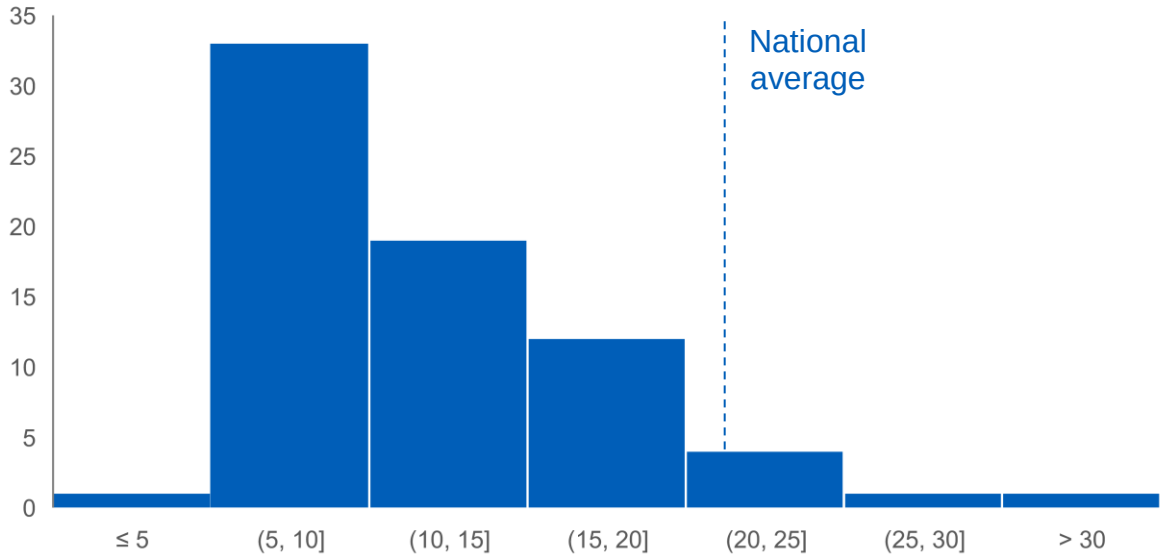
Figure 3.4: Ethnicity of Oxfordshire residents aged 40-74, according to the 2011 census.



3.1.4 Deprivation

Oxfordshire is a relatively affluent county, though it has pockets of deprivation[13]. This is reflected by the spread of GP practice-level IMD scores, displayed in Figure 3.5. The average for England is 21.8, the Oxfordshire average is 11.6 but a few practices are well above the national average in terms of deprivation.

Figure 3.5: Histogram of Index of Multiple Deprivation scores for GP practices in Oxfordshire. A higher score is more deprived.



[13] Oxfordshire Insight. 2018. Joint Strategic Needs Assessment. URL: http://insight.oxfordshire.gov.uk/cms/joint-strategic-needs-assessment

3.2 Need within the eligible population

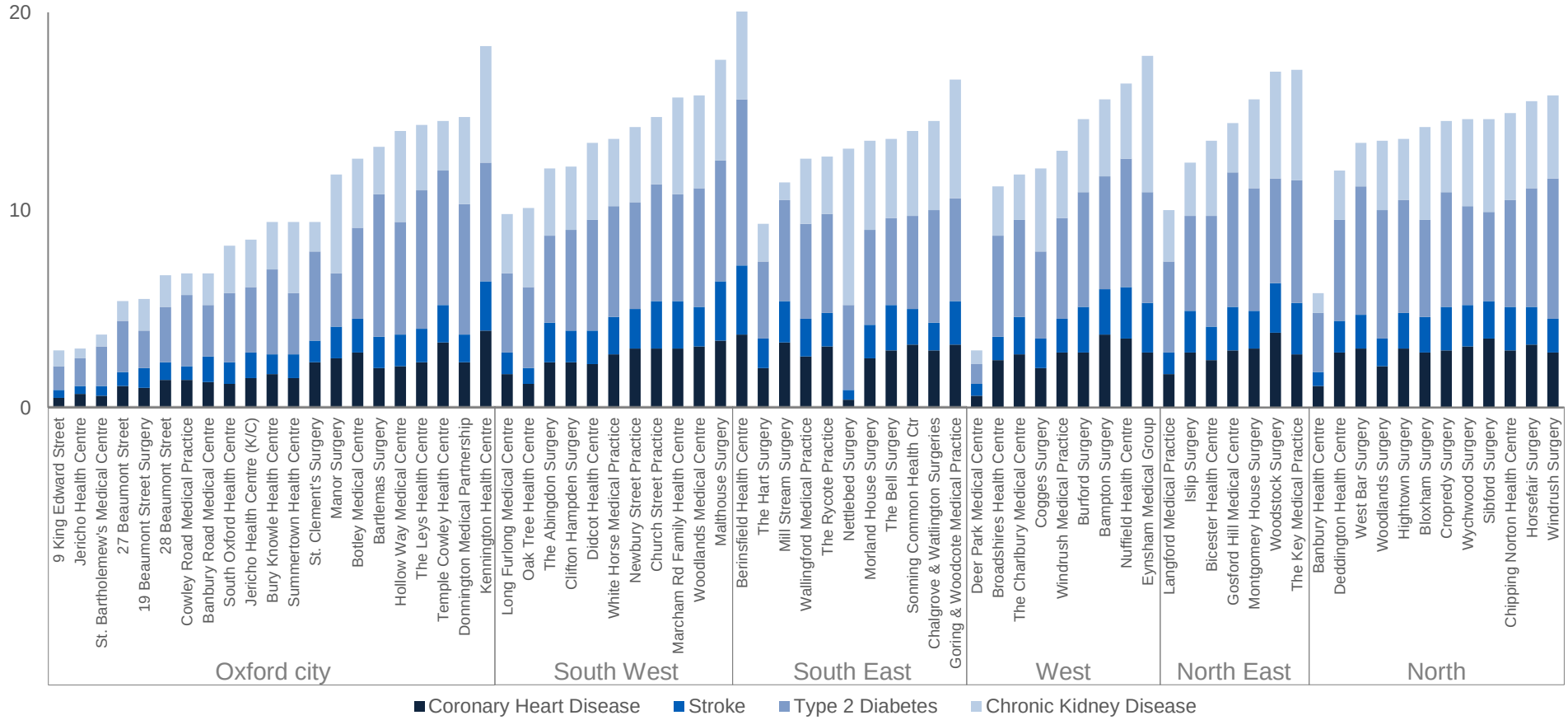
As established in section 1.3, equity is the provision of services according to need, to eliminate avoidable, unfair, or remediable differences in health among different groups of people. Understanding need within the population is therefore important to ensure equitable provision of services.

Nationally, rates of cardiovascular disease vary significantly by many of the equity indicators of interest in this report[14], including age, gender, ethnicity and deprivation.

Rates of cardiovascular disease vary significantly within Oxfordshire too. Figure 3.6 shows the prevalence of four of the most common and important cardiovascular diseases which are addressed by the NHS Health Check Programme (coronary heart disease, stroke, type 2 diabetes and chronic kidney disease), by GP practice.

[14] National Institutes for Health and Care Excellence. 2010. Cardiovascular disease prevention. URL: https://www.nice.org.uk/guidance/ph25/chapter/2-public-health-need-and-practice

Figure 3.6 Prevalence of selected cardiovascular diseases targeted by NHS Health Checks, by GP practice and locality.



N.B. Although the prevalence of various conditions are 'stacked' here to present an overall total, in reality there may be considerable overlap as some people have two or more conditions. Data were not available to present cumulative totals reflecting this overlap. Whilst it may reduce the differences between populations slightly, it is unlikely to change the overall picture of significant differences in rates of cardiovascular diseases in practices within and between districts/localities with the county. Additionally, these are not age-standardised rates (see Section 3.2.4).

3.2.1 Age

Cardiovascular disease affects more people of older age compared to younger age[15], and age is one of the most important risk factors for cardiovascular disease. This is true internationally[16], nationally[17] and in Oxfordshire[18].

3.2.2 Gender

Rates of cardiovascular disease are higher in men than in women. There are likely biological, behavioural and psychosocial contributions to this disparity, including men being less likely to engage in cardiovascular disease prevention[19]. This is true internationally[20], nationally[21] and in Oxfordshire[22].

3.2.3 Ethnicity

Nationally, cardiovascular diseases affect some ethnic groups more than others – death rates are approximately 50% higher than average among South Asian groups, and African and Caribbean groups also experience a higher risk of cardiovascular diseases than average[23].

Given the relatively small proportion of Oxfordshire residents who are from an ethnic minority (around 5%) it is difficult to get specific figures on rates of cardiovascular disease in ethnic minority groups. It is very likely, though, that ethnic minority groups in Oxfordshire have a similar experience to ethnic minority groups outside Oxfordshire and thus may experience higher than average rates of cardiovascular disease. From an equity perspective, it is therefore important to ensure that these groups are well represented in all aspects of the NHS Health Check programme.

3.2.4 Deprivation

More deprived groups experience more cardiovascular disease than more affluent groups. Cardiovascular disease is between three and six times more common among lower socioeconomic groups than among the most affluent[24,25].

As outlined above, data on deprivation are available at the practice, but not individual, level (Figure 3.7).

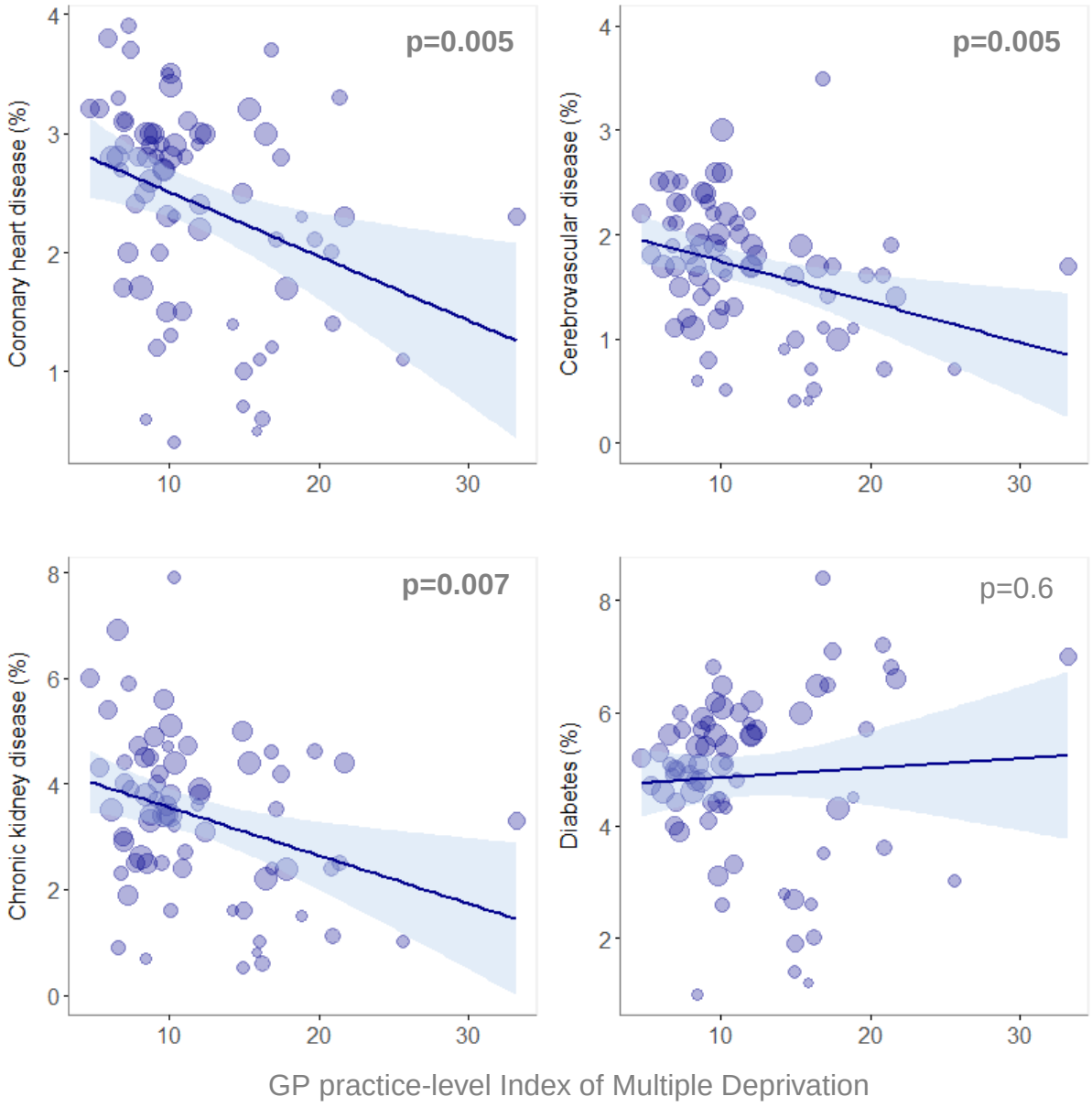
In contrast to what may be expected from the national trend, in Oxfordshire, practices with higher IMD have a lower prevalence of coronary heart disease, strokes/TIAs and chronic kidney disease, and these trends were highly statistically significant (rates of diabetes did not significantly differ by IMD).

---

[15] Dhingra, R. and Vasan, R. 2012. Age as a Cardiovascular Risk Factor. *Med Clin North Am.*
[16] North, B. and Sinclair, D. 2012. The Intersection Between Aging and Cardiovascular Disease. *Circ Res.*
[17] Hippiseley-Cox, J. et al. Derivation and validation of QRISK, a new cardiovascular risk score for the UK.*BMJ.*
[18] Public Health England. CVD: Primary Care Intelligence Packs, NHS Oxfordshire CCG.
[19] Mosca, L. et al. 2011. Sex/gender differences in cardiovascular disease prevention. *Circulation.*
[20] Weidner, G. 2000. Why do men get more heart disease than women? *J Am Coll Health.*
[21] Hippiseley-Cox, J. et al. Derivation and validation of QRISK, a new cardiovascular risk score for the UK.*BMJ.*
[22] Public Health England. CVD: Primary Care Intelligence Packs, NHS Oxfordshire CCG.
[23] Allender, S. et al. 2007. Coronary heart disease statistics. *British Heart Foundation Statistics Database.*
[24] O'Flaherty, M. et al. 2009. Recent levelling of coronary heart disease mortality rates among young adults in Scotland may reflect major social inequalities. *BMJ.*
[25] UCL Institute of Health Equity. 2010. Fair Society, Healthy Lives: The Marmot Review – Strategic Review of Health Inequalities in England post-2010. Quoted in: NHS Health Check: Best Practice Guidance

However, these associations are not standardised, so may be affected by, amongst other potentially confounding factors, the age breakdown of GP practices. For example, deprived practices are usually located in urban areas, and generally have a 'younger' population who might experience less cardiovascular disease because of their age, despite their deprivation. In Oxfordshire, the most deprived GP practices are Banbury Health Centre and The Leys Health Centre. In both, the most common age is 30-34 compared to 50-54 and 45-49 in Sonning Common Health Centre and Goring & Woodcote Medical Practice, two of the least deprived practices. The unexpected inverse association between GP-practice level IMD and low cardiovascular disease rates may therefore reflect the underlying age structure, which masks the effect of deprivation.

Figure 3.7: GP practice-level prevalence of various cardiovascular diseases by GP practice-level Index of Multiple Deprivation score.



3.2.5 Carers

There are additional, particular groups who also experience above average rates of cardiovascular disease. Carers, for example, are generally older and have a higher prevalence of high blood pressure and heart disease than the general population[26] (see Section 5.2.6). In addition, they experience significant psychosocial stresses (including financial and emotional stress), which have been shown to increase rates of cardiovascular disease[27].

3.2.6 Serious mental illness

People with severe mental illness – for example schizophrenia, bipolar disorder and major depressive disorder – are at increased risk of cardiovascular disease. A recent large meta-analysis demonstrated a 50% increased risk in this group[28], though other studies have identified barriers to people with a serious mental illness engaging with preventive services[29].

3.2.7 Learning disabilities

Very high levels of cardiovascular risk factors have been detected in people with learning disabilities in the UK and abroad, including an above average prevalence of diabetes[30], hypertension and stroke[31]. Paradoxically, in the UK, people with learning disabilities had a lower than average recorded prevalence of ischaemic heart disease[32], which may be due to genuinely lower rates of disease or because of under-diagnosis in this group who may struggle to communicate their symptoms.

[26] Carers UK. 2004. In Poor Health: The impact of caring on health. URL: http://static.carers.org/files/in-poor-health-carers-uk-report-1674.pdf
[27] Rosengren, A. et al. 2004. Association of psychosocial risk factors with risk of acute myocardial infarction in 11,119 cases and 13,648 controls from 52 countries (the INTERHEART study): case control study. *Lancet.*
[28] Correll, C. et al. 2017. Prevalence, incidence and mortality from cardiovascular disease in patients with pooled and specific severe mental illness: a large-scale meta-analysis of 3,211,768 patients and 113,383,368 controls. *World Psychiatry.*
[29] Black, D. and Held, M. 2017. Cardiovascular risk screening for individuals with serious mental illness. *Social Work in Health Care.*
[30] Straetmans, J. et al. 2007. Health problems of people with intellectual disabilities: the impact for general practice. *Br J Gen Pract.*
[31] McCarron, M. et al. 2013. Patterns of multimorbidity in an older population of persons with an intellectual disability: results from the intellectual disability supplement to the Irish longitudinal study on aging. *Res Dev Disab*
[32] Carey, I. 2016. Health Characteristics and consultation patterns of people with intellectual disability: a cross-sectional database study in English general practice. *Br J Gen Pract.*

Section 4: Overall performance of the NHS Health Check Programme in Oxfordshire

OXFORDSHIRE COUNTY COUNCIL

NHS HEALTH CHECK

Helping you prevent
diabetes
heart disease
kidney disease
stroke & dementia

4. Overall performance of the NHS Health Check Programme

Three indicators related to the NHS Health Check are part of the Public Health Outcomes Framework:

- percentage of the eligible population aged 40 to 74 offered an NHS Health Check
- percentage of the eligible population aged 40 to 74 offered an NHS Health Check who received an NHS Health Check (uptake of offer)
- percentage of the eligible population who received an NHS Health Check (coverage).

4.1 Percentage of the eligible population offered an NHS Health Check

According to estimates from Public Health England (based on ONS estimates for the population aged between 40-74, with a 'discounting' of around 30% who are presumed to have existing cardiovascular disease), 191,855 people were eligible for an NHS Health Check in Oxfordshire between April 2013 and April 2018.

The NHS Health Check programme in Oxfordshire did a good job of offering eligible people an NHS Health Check – 189,569 people were offered an NHS Health Check between 2013 and 2018. This equates to 98.8% of the eligible population, and is a much higher offer rate than seen nationally (90.7% –14,094,095 people out of 15,503,796 eligible received an NHS Health Check nationally[33]).

4.2 Percentage of the eligible population offered an NHS Health Check who received an NHS Health Check

95,485 Oxfordshire residents received an NHS Health Check between April 2013 and April 2018. This equates to 50.4% of the population who were offered an NHS Health Check (uptake of offer was 50.4%). This is above the national average of 48.7%, and made all, the more impressive by the very high proportion of the eligible population offered an NHS Health Check.

4.3 Percentage of the eligible population who received an NHS Health Check

The percentage of eligible people receiving an NHS Health Check (coverage) was similar to percentage uptake of offer, because of the very high proportion of eligible people offered an NHS Health Check. 49.8% of all eligible people in Oxfordshire received an NHS Health Check – this too is much higher than the national average of 44.3% (though obviously half of all eligible people are still not receiving an NHS Health Check).

[33] NHS Health Check, 2018. Explore NHS Health Check Data. URL: https://www.healthcheck.nhs.uk/commissioners_and_providers/data/ (data extracted in May 2018).

Figure 4.1: Proportion of eligible population in Oxfordshire that were offered an NHS Health Check and received an NHS Health Check between April 2013 and March 2018.

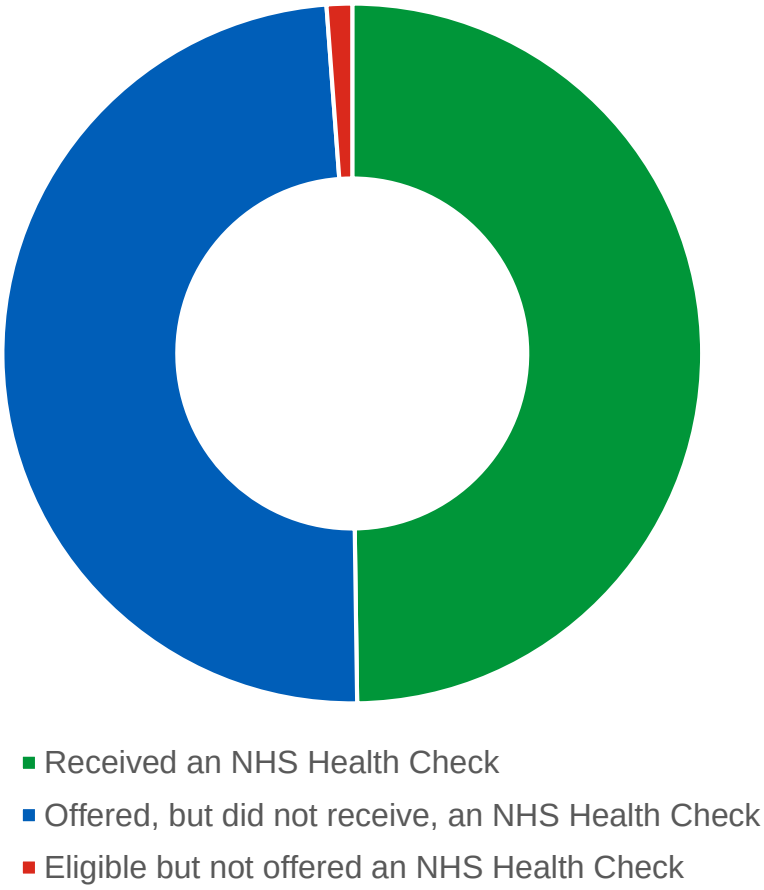


Table 4.1

	Offered an NHS Health Check	Received an NHS Health Check (percentage of those offered)
Total	**189,569**	**95,485 (50.4)**
Year		
2013/14	38,274	19,930 (52.1)
2014/15	38,974	22,835 (58.6)
2015/16	36,668	20,172 (55.0)
2016/17	33,338	18,204 (54.6)
2017/18	35,190	18,037 (51.3)
Gender		
Women	97,959	54,604 (55.7)
Men	93,487	44,574 (47.7)
Age		
40-44	45,377	19,895 (43.8)
45-49	36,594	17,461 (47.7)
50-54	35,045	17,914 (51.1)
55-59	26,971	14,472 (53.7)
60-64	20,702	12,471 (60.2)
65-69	16,649	10,956 (65.8)
70-74	7,752	5,770 (74.4)
Ethnicity		
White	140,973	86,471 (61.3)
Mixed	2,011	1,164 (57.9)
Asian	5,324	3,073 (57.7)
Black	1,800	1,021 (56.7)
Other	1,751	1,047 (59.8)
Deprivation		
Less deprived	122,217	65,326 (53.5)
More deprived	51,823	29,202 (56.3)
Carer		
Yes	18,318	3,547 (19.3)
Serious mental illness		
Yes	5,824	778 (13.3)
Learning disability		
Yes	2,093	289 (13.8)

* The sum of the numbers presented for each equity indicator of interest may not equal the overall totals. The sum may be higher than the overall totals because the overall totals have undergone a data cleaning step at Public Health England that these local figures – which can be broken down by equity indicators – have not. The sum may be lower than the overall totals because of missing data. For example, ethnicity was not recorded for many people, especially those who did not attend a health check.

Section 5: Auditing the pathway: Access to NHS Health Checks

OXFORDSHIRE COUNTY COUNCIL

NHS HEALTH CHECK

Helping you prevent
diabetes
heart disease
kidney disease
stroke & dementia

5. Auditing the pathway: Access to NHS Health Checks

5.1 Offers

As outlined in section 4.1, the vast majority of Oxfordshire's eligible population – almost 99% – were offered an NHS Health Check. This is much better than the national average. As detailed in section 3.1, it is not possible to establish exactly how the population who were offered an NHS Health Check differs from the eligible population, however, given the very high proportion of offers, it is reasonable to assume differences were negligible.

Whilst this element of the programme does not currently raise any concerns from an equity perspective, it needs to be monitored in the next five-year cycle. NHS Health Checks in Oxfordshire are offered exclusively through GP practices – by definition, therefore, anyone registered without a registered GP or registered with a GP that is not offering NHS Health Checks will be excluded from the process.

Currently, all GP practices in Oxfordshire offer NHS Health Checks, so no one is excluded by being registered with a GP that is not offering NHS Health Checks. There are no readily accessible statistics about the number of Oxfordshire residents aged between 40-74 who are not registered with a GP. In fact, the Oxford population registered with a GP is 15% higher than the population estimated by ONS, a statistic contributed to by both high rates of GP registration and a large number of students (who are counted differently in the different statistics)[34].

ONS note that prisoners, people who solely use private services and some members of the armed forces may be excluded from GP practice lists[35] and therefore not offered an NHS Health Check. An additional small survey – conducted in a very different area of the country – demonstrated other barriers to registration such as not knowing their entitlement to GP services, recently migrating into the area or being inappropriately refused registration (e.g. due to not having proof of address)[36]. It is easy to see how these may lead to inequitable services if the demographics of Oxfordshire change. If the proportion of the eligible population offered an NHS Health Check falls, it may be necessary to offer NHS Health Checks in other settings, or enhance ongoing efforts from the Clinical Commissioning Group to ensure all residents are registered with a GP.

5.2 Uptake

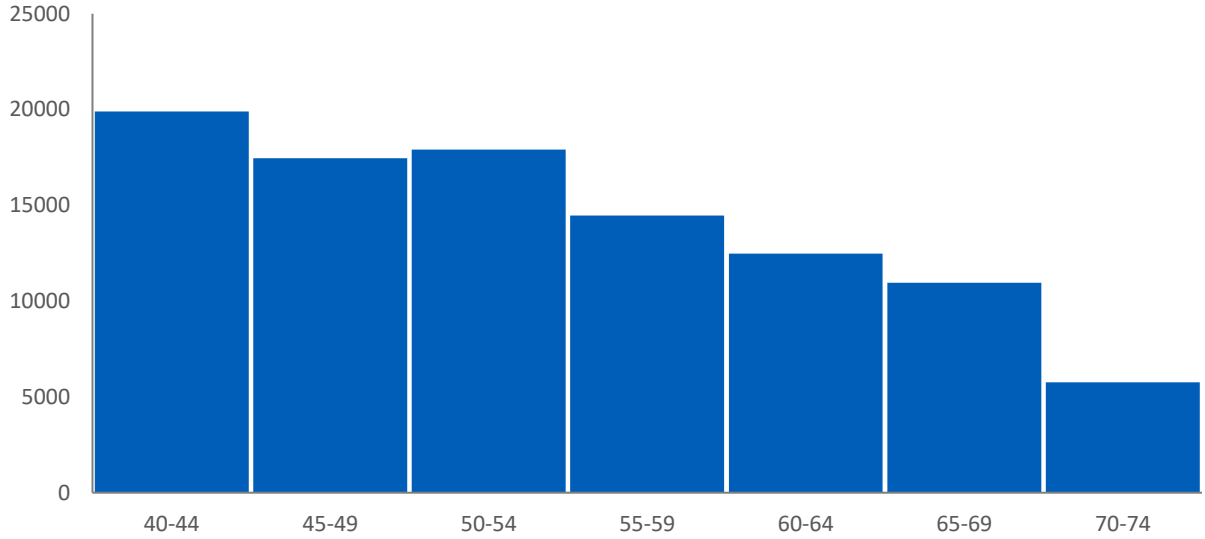
The uptake of offers is better than the national average (50.4% vs 48.7%). However, many people still did not attend an NHS Health Check. The next section examines the population who did not take up the offer compared to those who did, by looking at the age, gender, ethnicity and deprivation structure of the different populations.

[34] Baker, C. 2016. Population estimates & GP registers: why the difference? House of Commons Library
[35] Office for National Statistics. 2012. Comparison between 2011 Census estimates and the GP NHS Patient Register. URL: https://www.ons.gov.uk/ons/guide-method/census/2011/census-data/2011-census-data/2011-first-release/first-release--quality-assurance-and-methodology-papers/comparison-between-2011-census-estimates-and-the-patient-register.pdf
[36] Healthwatch Enfield. 2015. A report looking into individuals not registered with a GP. URL: https://healthwatchenfield.co.uk/wp-content/uploads/2017/04/individuals_not_registered_with_a_gp.pdf

5.2.1 Age

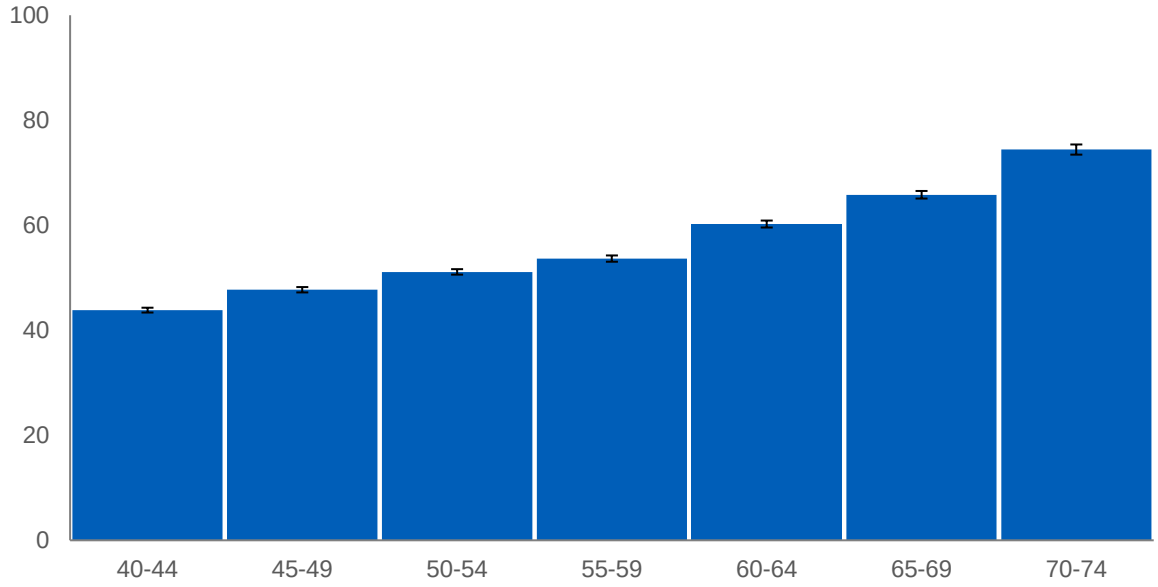
As demonstrated in Figure 3.2, the number of eligible people broadly declines as age increases. This is reflected in the numbers of people of each age bracket attending NHS Health Checks each year (Figure 5.1).

Figure 5.1: Number of people attending an NHS Health Check in Oxfordshire between April 2013 and March 2018, by age group.



Although the absolute numbers of those attending decreases with increasing age, the *proportion* of eligible people attending increases with age (Figure 5.2). Whilst this provision is unequal, it is not necessarily inequitable – as outlined above, those at older ages experience more cardiovascular disease and therefore may benefit more from preventive services such as NHS Health Checks.

Figure 5.2: Proportion of population who were offered an NHS Health Check in Oxfordshire who received one (uptake of offer) between April 2013 and March 2018, by age group. Error bars are 95% confidence intervals.



5.2.2 Gender

Women represent 51.1% of the Oxfordshire population aged 40-74 according to 2017 mid-year estimates from ONS. They represent a very similar proportion of the population offered an NHS Health Check (51.2%). However, 55.1% of people attending an NHS Health Check in Oxfordshire are women. The difference between the eligible population and the population receiving an NHS Health Check is highly statistically significant ($p<0.001$). This is likely to be both unequal and inequitable, as men receive fewer NHS Health Checks but are at increased risk of the cardiovascular diseases – in fact, men are almost three times as likely to have a heart attack compared to women[37].

Figure 5.3: Number of people attending an NHS Health Check in Oxfordshire, by gender, by year.

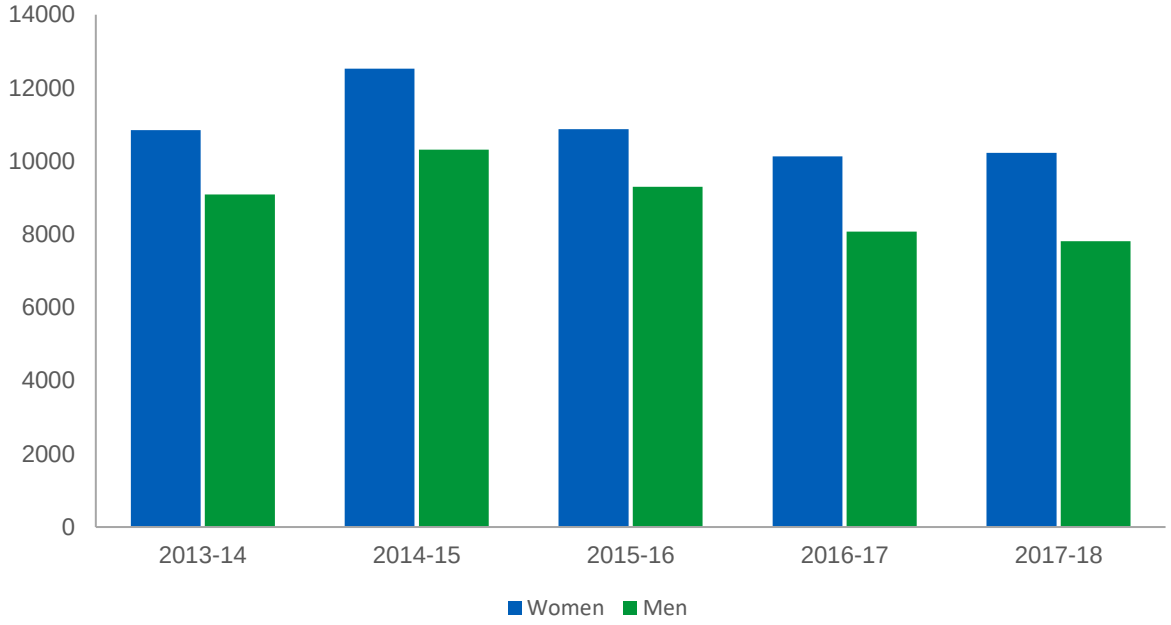
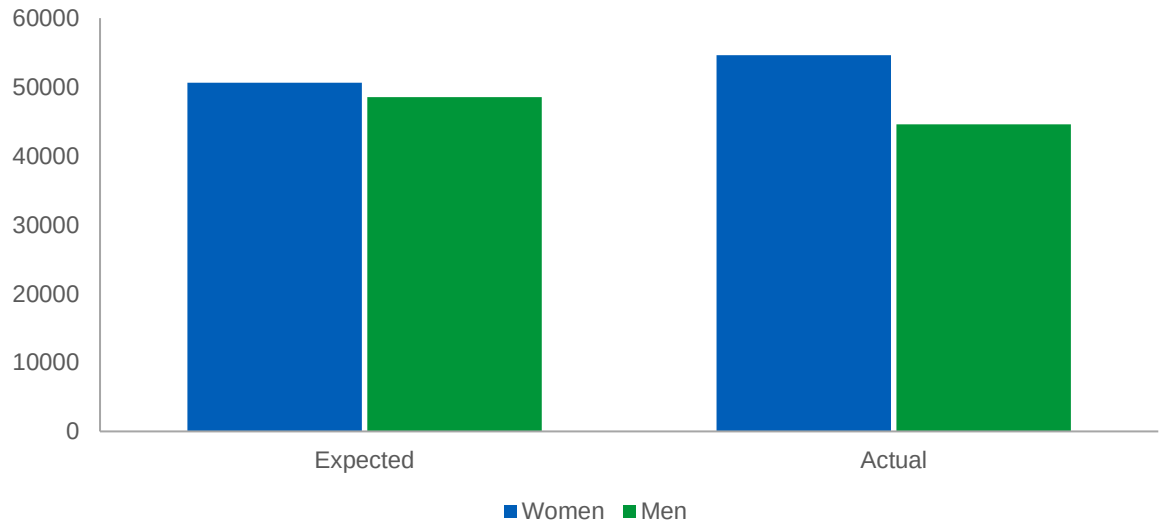


Figure 5.4: Expected vs observed numbers of women and men attending NHS Health Checks in Oxfordshire between April 2013 and March 2018.

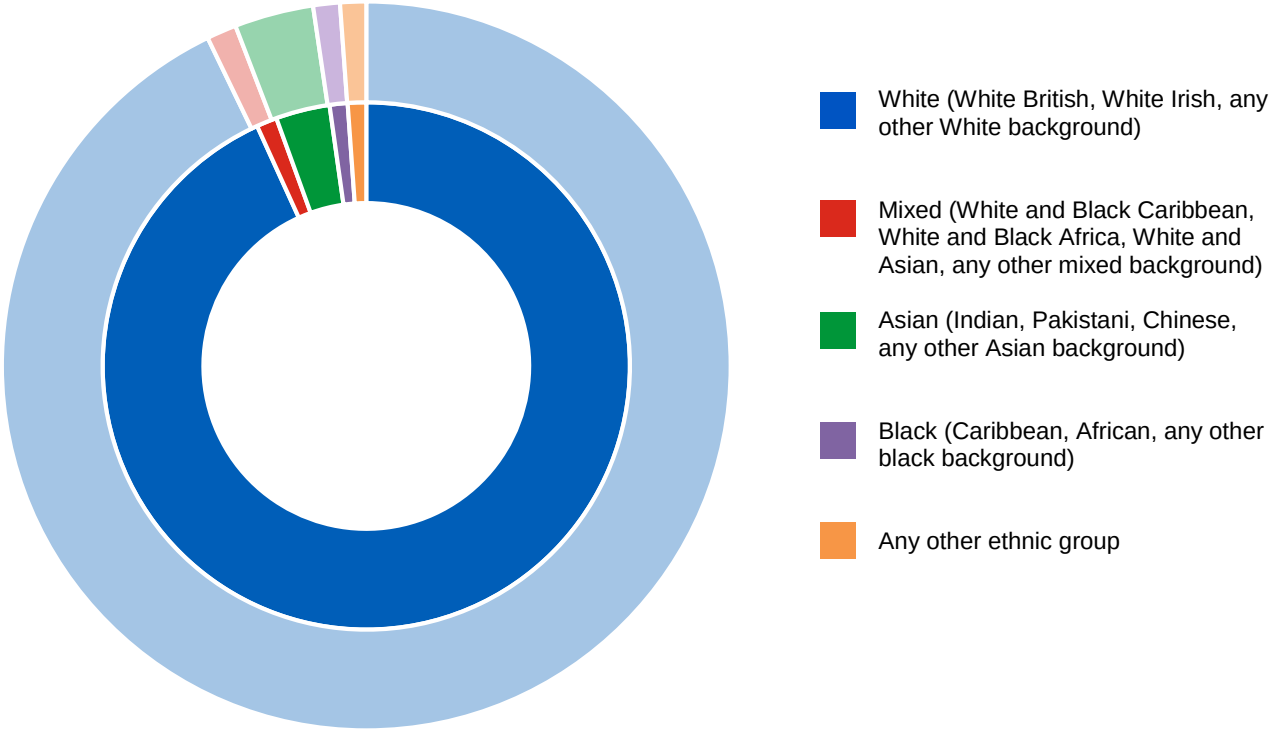


[37] Bhatnagar, P. et al. 2015. The epidemiology of cardiovascular disease in the UK, 2014. *Heart.*

5.2.3 Ethnicity

The ethnic breakdown of people who received an NHS Health Check compared to those who were eligible for an NHS Health Check were broadly similar (Figure 5.5).

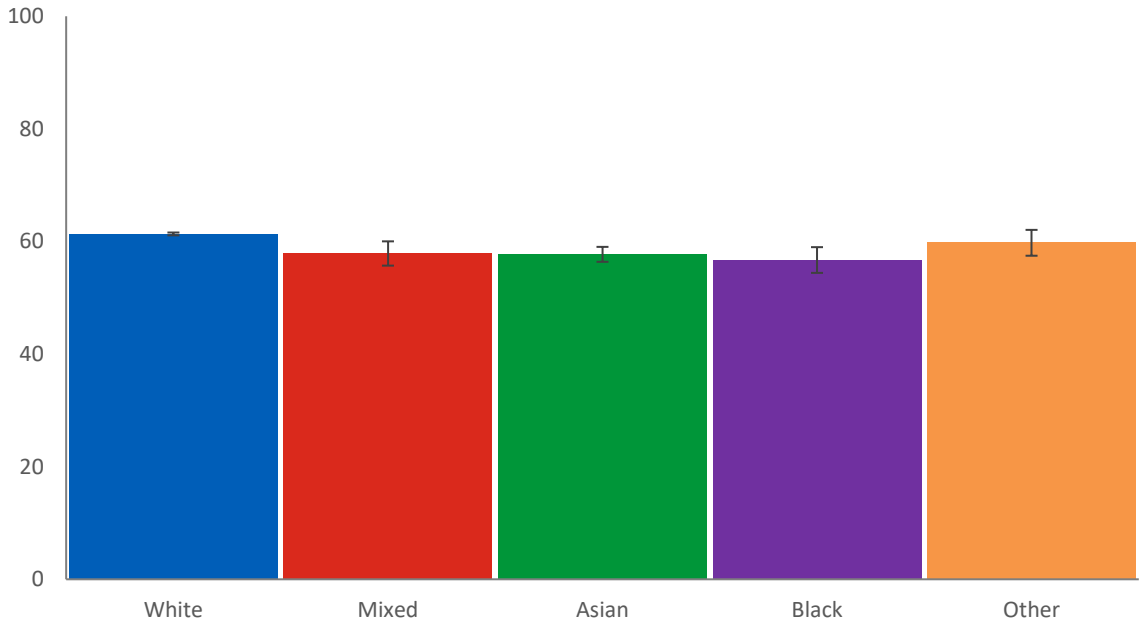
Figure 5.5: Ethnicity of those attending (inside circle, dark colours) versus those offered (outside circle, lighter colours) an NHS Health Check in Oxfordshire between April 2013 and March 2018.



However, there were modest (but statistically significant) differences in uptake for different ethnic groups. The White ethnic group were most likely to receive an NHS Health Check after being offered one – 61.3% of all those offered a check received one. The Black ethnic group were the least likely – 56.7% of those offered an NHS Health Check received one. The rates of uptake of NHS Health Check offers by different ethnicities is shown in Figure 5.6. This is likely to be both unequal and inequitable – Asian populations experience a higher burden of cardiovascular disease but are less likely to receive an NHS Health Check in Oxfordshire.

However, even with five years of data, the absolute numbers of people identifying as an ethnic minority are relatively small (Table 5.1). For example, 1,021 Black people received an NHS Health Check between 2013-2018, out of 1,800 eligible. If Black people had the same rate of uptake as White people, 1,104 Black people would have received an NHS Health Check, i.e. 83 additional people, would have received an NHS Health Check, equivalent to an extra 16 or 17 NHS Health Checks per year.

Figure 5.6: The percentage of people receiving an NHS Health Check in Oxfordshire after being offered one (uptake of offer) between April 2013 and March 2018, by ethnicity. Error bars are 95% confidence intervals.



As noted in Section 4.1, the uptake of the NHS Health Check offer in Oxfordshire was 50.4%. In this figure uptake of offer appears to be around 60% for all ethnic groups. This is because the denominator has changed – for this figure, the denominator is the proportion of all people for whom ethnicity was recorded, not all people offered an NHS Health Check. This may introduce bias if certain ethnicities were less likely to have their ethnicity recorded when they did not attend, though this is likely to be minimal.

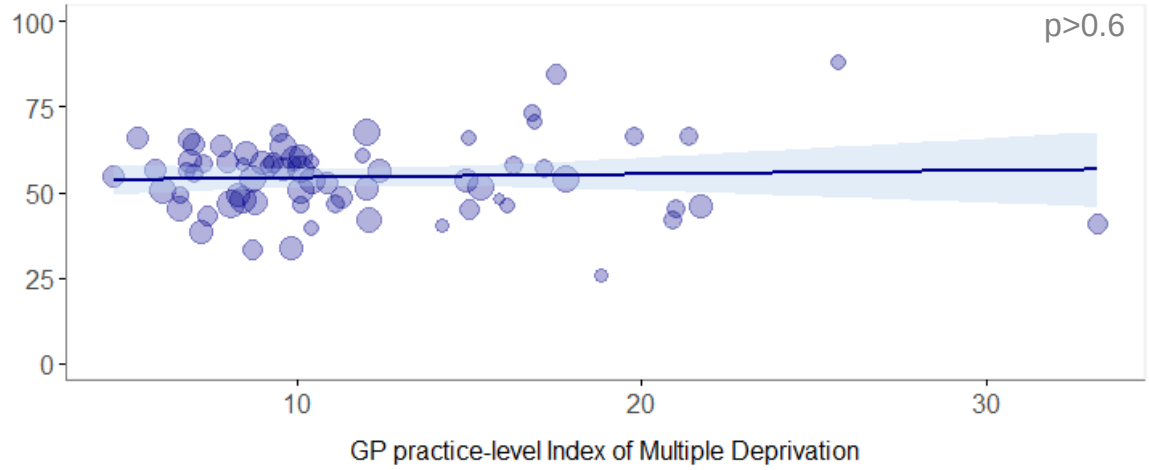
Table 5.1: Numbers of people offered and receiving an NHS Health Check in Oxfordshire between April 2013 and March 2018, by ethnicity.

	White	Mixed	Asian	Black	Other	**Total**
Offered	140,973	2,011	5,324	1,800	1,751	**151,859**
Received	86,471	1,164	3,073	1,021	1,047	**92,776**
Uptake of offer (%)	61.3	57.9	57.7	56.7	59.8	**61.1**

5.2.4 Deprivation

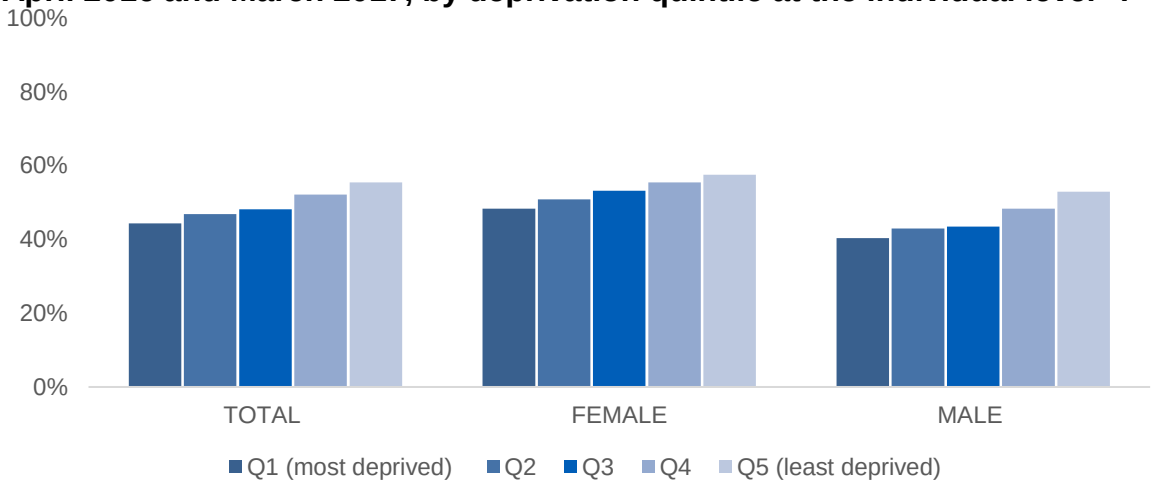
The proportion of people receiving an NHS Health Check at each GP practice did not vary by the level of deprivation in that GP's catchment area (Figure 5.7).

Figure 5.7: Uptake of the NHS Health Check offer in Oxfordshire between April 2013 and March 2018, by deprivation at the GP practice level.



The available data did not permit analysis at the individual level, only the practice level. Not finding an association between deprivation and uptake at the GP practice level does not mean there is no association at the individual level. In fact, the health equity audit of NHS Health Checks in Oxfordshire covering April 2016 to March 2017 found an association between deprivation and uptake at the individual level despite not finding one at the GP practice level[38]. The uptake by deprivation quintile for 2016-17 is reproduced in Figure 5.8. Given the robust findings in the 2016-17 audit, and the relatively consistent findings in other areas between this audit and the 2016-17 audit, it is reasonable to suspect this association may hold.

Figure 5.8: Uptake of the NHS Health Check offer in Oxfordshire between April 2016 and March 2017, by deprivation quintile at the individual level[39].



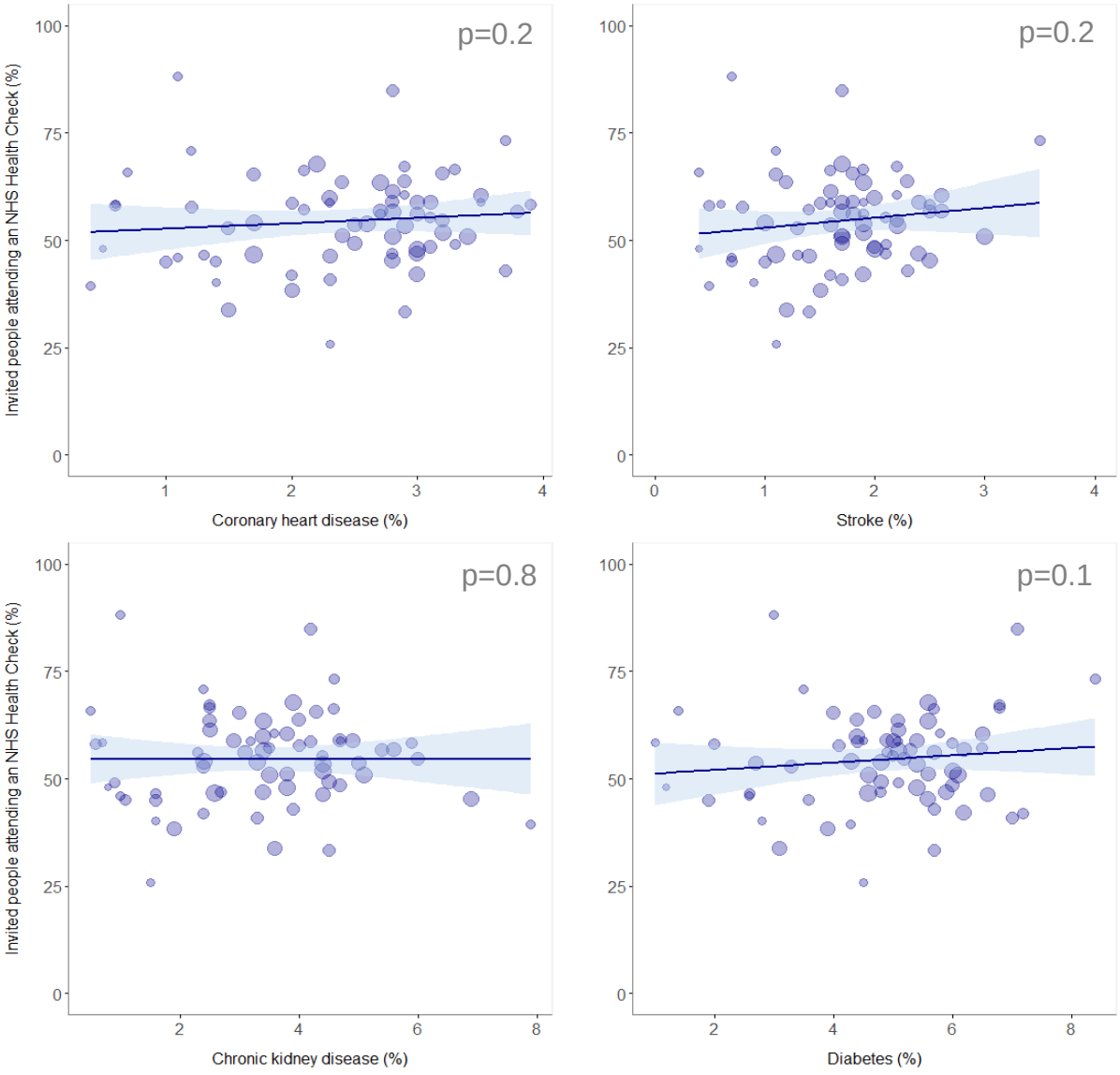
[38] Moore, L., O'Neill, E. et al. 2017. Health Equity Audit of the NHS Health Check Programme in Oxfordshire 2016-17. *Oxfordshire County Council internal document.*
[39] Moore, L., O'Neill, E. et al. 2017. Health Equity Audit of the NHS Health Check Programme in Oxfordshire 2016-17. *Oxfordshire County Council internal document.*

5.2.5 Need

As detailed in Section 3.2, the prevalence of various cardiovascular diseases at a GP-practice level is used as a proxy for the need for cardiovascular disease prevention. As outlined in Section 4.1.2, the proportion of people who received an NHS Health Check was around 50%. This was constant across practices regardless of the prevalence of various cardiovascular diseases (Figure 5.9).

Although there appears to be no inequality between uptake at different levels of need, this is still an inequity – the areas of greatest need would benefit from increased provision of cardiovascular prevention services.

Figure 5.9: The proportion of people attending an NHS Health Check at each GP practice in Oxfordshire and between April 2013 and March 2018 according to the prevalence of major cardiovascular diseases at that GP practice. Each dot is a GP practice, sized by the number of people eligible for an NHS Health Check. P values are for a weighted linear regression. Shaded areas are confidence intervals. None of the lines are statistically significantly different from horizontal.



5.2.6 Carers, those with a serious mental illness or with learning disabilities

Perhaps the largest relative differences in the proprotions of people offered and receiving an NHS Health Check occurs between the overall population and carers, those with a serious mental illness and those with a learning disability (Figure 5.10 and Table 5.2).

Figure 5.10: The proportion of eligible carers, people with a serious mental illness and people with a learning disability offered and receiving an NHS Health Check in Oxfordshire between April 2013 and March 2018, compared to the overall population.

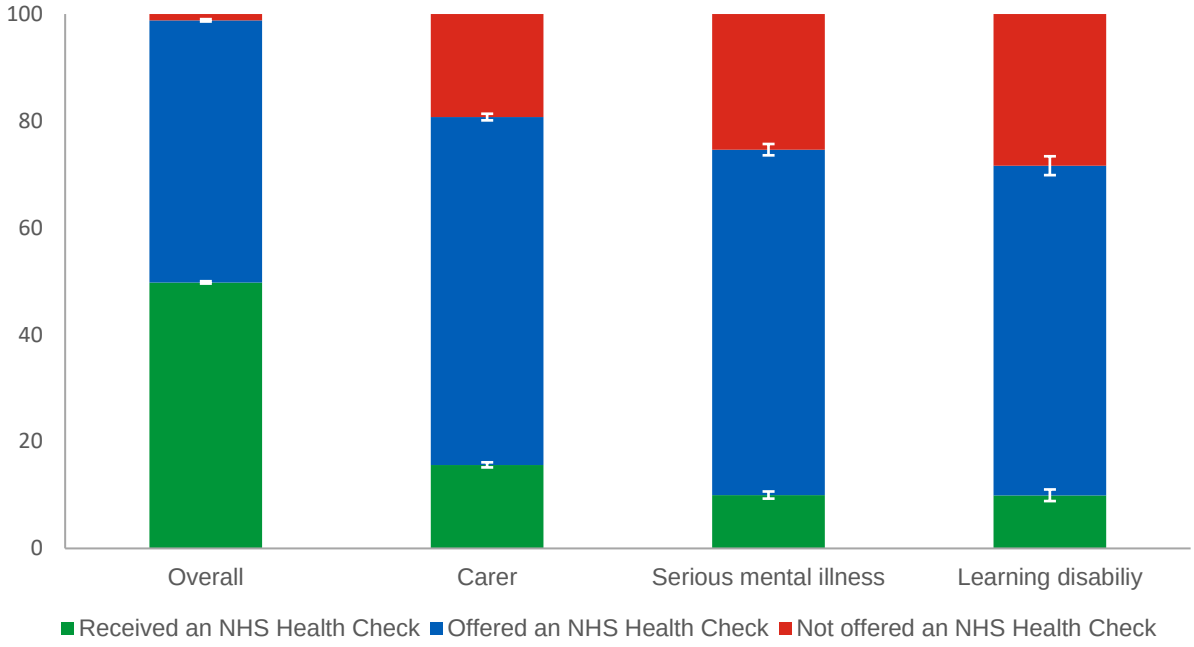


Table 5.2: The numbers of eligible carers, people with a serious mental illness and people with a learning disability offered and receiving an NHS Health Check in Oxfordshire between April 2013 and March 2018.

	Eligible	Offered an NHS Health Check (percentage of total eligible)	Received an NHS Health Check (percentage of total eligible)
Overall	191,832	189,569 (98.9)	95,485 (49.8)
Carer	22,694	18,318 (80.7)	3,547 (15.6)
Serious mental illness	7,804	5,824 (74.6)	778 (10.0)
Learning disability	2,922	2,093 (71.6)	289 (9.9)

Eligibility:
Whilst 98.9% of the total eligible population was offered an NHS Health Check, according to the available data just over 70% of those eligible with a learning disability were offered one.

There are reasons to believe these numbers may not be wholly comparable. For example, according to the available figures, around 4,000 carers were not offered an NHS Health Check, but only 2,000 people across the entirety of Oxfordshire were not offered an NHS Health Check. These numbers are incompatible.

This discrepancy is likely because the methods used to derive the total eligible population for each group was different. These detials are not available from the limited data that was removed from QUEST, but it is likely that the eligible population for carers, those with serious mental illness and those with a learning disability was calculated based on estimates from the Office of National Statistics, with a standard discounting procedure to remove the proportion expected to have a pre-existing, disqualifying cardiovascular disease.

However, for several reasons, fewer carers than predicted using this method are likely to be eligible for NHS Health Checks:

- Carers in Oxfordshire tend to be in the upper age range of eligibility for NHS Health Checks[40], and are therefore more likely to have a pre-existing cardiovascular condition that renders them ineligible for NHS Health Checks,
- Carers experience higher levels of ill-health as a result of their responsibilities (regardless of their age), including high blood pressure and heart disease[41], so may have a pre-existing, disqualifying condition.

In contrast, the eligible population for the overall population is calculated from estimates from the Office of National Statitstics, but with people disqualified on the basis of their recorded cardiovascular diseases. Thus the eligible populations for carers and the general population are not likely to be directly comparable, and similar caveats apply to the estimates for those with a serious mental illness and those with a learning disability.

Uptake of the NHS Health Check offer:
However, the uptake of offers probably *is* comparable between carers and the overall population, and is much lower amongst carers (50.4% uptake in overall population (95% confidence intervals 50.1-50.6%) versus 19.4% uptake (95%CI 18.8-19.9)). The differences are statistically significant, and clinically meaningful.

Whilst understandable (due to the extra time commitments of carers) they still represent a significant inequity – a group of Oxfordshire residents with a significant need for cardiovascular disease prevention are missing out.

[40] Oxfordshire County Council and Oxfordshire Clinical Commissioning Group. 2017. Oxfordshire Carers' Strategy: 2017-2020. URL: https://www2.oxfordshire.gov.uk/cms/sites/default/files/folders/documents/socialandhealthcare/carers/CarersStrategy.pdf
[41] Carers UK. 2004. In Poor Health: The impact of caring on health. URL: http://static.carers.org/files/in-poor-health-carers-uk-report-1674.pdf

The uptake of an NHS Health Check in the overall popuation is probably not comparable to uptake among those with a serious mental illness or those with a learning disability. People with a learning disability[42] or a serious mental illness[43] are offered an annual health check, distinct from (but overlapping with) the NHS Health Check, which may suppress uptake of the NHS Health Check itself. Nevertheless, it is very possible (even likely) that these groups are not receiving cardiovascular prevention proportional to their needs, and thus they may well continue to benefit fom NHS Health Checks.

[42] NHS. 2018. Annual Health Checks: Learning disabilities. URL: https://www.nhs.uk/conditions/learning-disabilities/annual-health-checks/

[43] NHS England. 2018. Improving physical healthcare for people living with severe mental illness (SMI) in primary care. URL: https://www.england.nhs.uk/wp-content/uploads/2018/02/improving-physical-health-care-for-smi-in-primary-care.pdf

Section 6: Summary, strengths, limitations and recommendations

OXFORDSHIRE COUNTY COUNCIL

NHS HEALTH CHECK

Helping you prevent
diabetes
heart disease
kidney disease
stroke & dementia

6. Summary, strengths, limitations & recommendations

6.1 Summary of results

Oxfordshire does a very good job of offering NHS Health Checks with almost 99% of the population offered one. This is far better than the national average (90.9%).

Resultantly, a higher proportion of Oxfordshire residents receive an NHS Health Check (49.8%) than the national average (44.3%).

Older people, women and White people living in Oxfordshire were more likely to receive an NHS Health Check than younger people, men and ethnic minorities respectively.

Whilst no relationship was found between deprivation at the GP practice level and the likelihood of receiving an NHS Health Check, this is still consistent with previous evidence that suggests more deprived individuals are less likely to receive an NHS Health Check.

Carers, people with serious mental illness and people with learning disabilities experience higher levels of cardiovascular disease, but are less likely to be offered or receive an NHS Health Check (though this is complicated by other, overlapping services targeting these groups).

The biggest improvements in the equity of access to NHS Health Checks would come from increasing uptake in men, deprived individuals, carers, people with serious mental illnesses and people with a learning disability. These groups are underserved and have increased need for cardiovascular disease prevention.

Increasing uptake for ethnic minority groups would also improve equity, though the gains here are likely to be marginal given the relatively small numbers involved and reasonable uptake among these groups already. Whilst older groups are more likely to attend, they also probably have a higher need for preventive services and this may therefore be appropriate.

Overall, Oxfordshire is good at providing equal care across all levels of need, in contrast to the commonly observed ‘inverse care law’ where those most in need usually receive the least services[44]. However, to be truly equitable, service provision to those most in need should increase in the next five-year cycle of NHS Health Checks in Oxfordshire.

[44] Tudor Hart, J. 1971. The inverse care law. *Lancet.*
Marmot, M. 2018. An inverse care law for our time. *BMJ.*

6.2 Strengths of this health equity audit

This five-year audit is able to review an entire cycle of NHS Health Checks. This is the first time it has been possible to review the entire five-year cycle following the transfer of control for NHS Health Checks to Local Authorities from the NHS.

Additionally, across the five years, large numbers of Oxfordshire residents have been involved in the NHS Health Check process. The sheer numbers of people enable relatively tight confidence intervals to be calculated when comparing the proportion of people who were offered/received an NHS Health Check, and permits the analysis of quite small demographic groups within Oxfordshire.

The available data, with equity indicators of interest consistently reported over multiple years, also allowed trends in attendance to be calculated across the cycle.

6.3 Limitations of this health equity audit

Despite undoubted strengths, the results of this audit are limited in several ways. The majority of these relate to the quality and detail of available data.

Of note, the previous audit[45] recommended patient-level deprivation should be used as an equity indicator in future health equity audits of NHS Health Checks – this was not possible with the available data which was removed from QUEST before the data contract with The Computer Room expired in May 2018.

The data from QUEST were tabular, by equity indicator of interest – for example, one spreadsheet might contain the age breakdown of those offered and receiving an NHS Health Check at each GP practice in one year. Another spreadsheet would provide similar data relating to ethnicity. It was therefore not possible to link multiple equity indicators of interest in one individual (e.g. it is not possible to assess the equity of the programme for “Black men” – only to assess the equity in terms of ethnicity and, separately, gender).

There are also some inconsistencies within the data due to the way different populations have been estimated. For example, overall statistics from Public Health England have undergone an additional cleaning step so totals do not exactly tally with the totals calculated by each equity indicator of interest. Additionally, there is a degree of missing data – for example, ethnicity was not recorded for many people who did not receive an NHS Health Check. Nevertheless, by comparing the available data on NHS Health Checks with appropriate local and national statistics, some of these data shortcomings have been mitigated.

[45] Moore, L., O’Neill, E. et al. 2017. Health Equity Audit of the NHS Health Check Programme in Oxfordshire 2016-17. *Oxfordshire County Council internal document.*

6.4 Recommendations

6.4.1 Recommendations for the programme

On the whole, the NHS Health Check programme performs very well in Oxfordshire. Significant disruption to the programme should therefore be avoided unless major problems with the programme emerge. Areas of good work to continue are:

1. Offering NHS Health Checks to a very high proportion of eligible people,
2. Achieving above average uptake of NHS Health Check offers,
3. Providing NHS Health Checks through GP practices.

Despite the overall good performance, there is still room for improvement.

1. The programme should do a better job of ensuring groups who experience high levels of cardiovascular disease are offered and receive their NHS Health Checks. This may involve **targeting groups** identified in this and previous audits, primarily: **men, deprived individuals,** carers, people with a serious mental illness and people with a learning disability.
2. There would be some benefit to targeting ethnic minorities, but the potential for gains here is smaller because the numbers are small and there is already relatively good uptake in these communities.
3. Efforts should be made to **fully understand the reasons** why men, deprived individuals, carers, people with a serious mental illness and people with a learning disability are less likely to take up the NHS Health Check offer despite their increased risk. This may require specially commissioned qualitative research.
4. On the back of this qualitative work, **the marketing strategy for NHS Health Checks should be reviewed** to ensure it is reaching those who need to hear the message most. Fresh approaches may be needed. Encouraging work has already begun here, with ‘mini-checks’ being offered to the predominantly male[46] crowd at home football matches at Oxford[47] and Banbury United[48] and through targeting workplaces[49].
5. An alternative way to increase the proportion of people taking up the offer of an NHS Health Check would be to issue repeat offers. Currently, eligible individuals are offered an NHS Health Check only once every five years with up to three invitations sent out if the individual does not attend. However, not all providers always send the follow-up invitations – this should be monitored and adherence improved. Alternatively, the offer process could be reorganised by annually re-inviting people who have not attend an NHS Health Check. The financial incentives for GPs to offer these ‘super-invites’ would need to be considered, but this suggestion was raised at a recent meeting of the Oxfordshire County Council Health Oversight and Scrutiny Committee and so may have high-level support.

[46] Roialty, 2018. URL: https://roialty.com/football-audience-analysis/
[47] Oxford United FC, 2018. URL: https://www.oufc.co.uk/news/2018/april/free-health-checks/
[48] Banbury United FC, 2018. URL: http://www.banburyunitedfc.co.uk/news/nhs-health-checks-2361584.html
[49] Stagecoach, 2018. URL: https://www.stagecoachbus.com/news/oxfordshire/2018/september/nhs-health-checks

6.4.2 Recommendations for the audit cycle

This (five-year) audit confirms rather than refutes previous (one-year) audits. Similar trends in uptake for age, gender, ethnicity and deprivation were found in both the 2013-14 and 2016-17 audits[50,51], albeit without the same degree of statistical confidence afforded by the large numbers of people included in this audit. This means future 'one-year' audits could be considered for the NHS Health Check programme and their major findings trusted.

These interim audits can be extremely valuable. This five-year audit struggled because it relied on data extracted from a system for which access had expired. As a result, linking equity indicators was not possible, and yet this is the first time the numbers of people may have permitted such nuanced analysis. Also unavailable was deprivation data at the individual level, highlighted as important in previous audits. This issue can be avoided by conducting one-year audits during the commissioning cycle. This also raises questions about the handling and retention of data by commissioned third-party providers. Future contract negotiations with data processors should consider the provision of data beyond the life of the programme, to enable rigorous scrutiny of the programme after its completion.

However, results from one-year audits should be interpreted with caution, particularly when the numbers involved with certain equity indicators of interest are relatively small. For example, a previous audit reported that, in that year, only 11 out of 32 Bangladeshi men (34.4%) took up the offer of an NHS Health Check. This potentially concerning figure was rightly flagged for monitoring and highlighted as a figure to review when a full five-year dataset was available. In the end, the 95% confidence intervals (20.4-51.7%) overlap the overall five-year estimate for uptake amongst all genders and ethnicities (50.4%). In fact, over the five years, the uptake among Bangladeshi people (men and women) was no different from the overall estimate for all ethnicities (133/261 Bangladeshi's received an NHS Health Check (51.0%, 95%CI 44.9-57.0)). Additional claims – such as the fact the gap between uptake in women and men had narrowed from the earlier 2013-14 audit – are not confirmed by a rigorous analysis of five years of data and may have led to false confidence.

Thus, whilst these snapshot audits generally represent the programme accurately, results – particularly those involving small numbers – need to be contextualised in the entirety of the life of the programme. Nevertheless, a snapshot equity audit (perhaps in year two or three of the next five-year cycle) should be considered to evaluate and guide policies.

[50] Behbod, B. & O'Neill, E. 2014. Health Equity Audit of the NHS Health Check Programme across Oxfordshire in 2013-14. *Oxfordshire County Council internal document.*
[51] Moore, L., O'Neill, E. et al. 2017. Health Equity Audit of the NHS Health Check Programme in Oxfordshire 2016-17. *Oxfordshire County Council internal document.*

Health Equity Audit of the NHS Health Check Programme in Oxfordshire, 2013-18

Audit conducted from September 2018 to December 2018.

Analysis and writing by:
Dr Isaac Ghinai, Public Health Registrar at Oxfordshire County Council (Isaac.ghinai@oxfordshire.gov.uk).

Supervised by:
Dr Eunan O'Neill, Public Health Consultant at Oxfordshire County Council (eunan.oneill@oxfordshire.gov.uk) and
Stephen Pinel, Health Improvement Principal at Oxfordshire County Council.

With assistance from:
Liz Benhamou, Health Improvement Practitioner at Oxfordshire County Council and
Dr Julia Pakpoor, Public Health Registrar at Oxfordshire County Council.

OXFORDSHIRE COUNTY COUNCIL

NHS HEALTH CHECK
Helping you prevent
diabetes
heart disease
kidney disease
stroke & dementia