



SECOND ANNUAL AUDIT REPORT



Office for Health
Improvement
& Disparities

CVDPREVENT



Benchmarking Network

(for the audit period up to March 2021)

Using data to drive cardiovascular disease prevention



HQIP

Healthcare Quality
Improvement Partnership

The CVDPREVENT audit is commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of the National Clinical Audit and Patient Outcomes Programme (NCAPOP). HQIP is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing, and National Voices. Its aim is to promote quality improvement in patient outcomes, and in particular, to increase the impact that clinical audit, outcome review programmes and registries have on healthcare quality in England and Wales. HQIP holds the contract to commission, manage, and develop the National Clinical Audit and Patient Outcomes Programme (NCAPOP), comprising around 40 projects covering care provided to people with a wide range of medical, surgical and mental health conditions. The programme is funded by NHS England, the Welsh Government and, with some individual projects, other devolved administrations and crown dependencies. www.hqip.org.uk/national-programmes

The CVDPREVENT audit aims to support quality improvement in the prevention of cardiovascular disease (CVD) in primary care in England.

This report was prepared by the NHS Benchmarking Network (NHSBN) and the Office for Health Improvement and Disparities (OHID) - the National Cardiovascular Intelligence Network (NCVIN) team. The audit is delivered by a partnership between NHS Digital, NCVIN and the NHSBN. To ensure patient involvement in the audit, the NHSBN work closely with the Patients Association.

NHS BENCHMARKING NETWORK (NHSBN)

The NHS Benchmarking Network is a member led organisation promoting service improvement in the NHS through benchmarking and sharing good practice. Members are providers and commissioners of NHS services, spanning the acute, community and mental health sectors. The NHSBN team support members in sharing data to compare service provision and performance with the aim of identifying improvement opportunities. In addition, the NHSBN run national clinical audits.

NATIONAL CARDIOVASCULAR INTELLIGENCE NETWORK (NCVIN) - OFFICE FOR HEALTH IMPROVEMENT & DISPARITIES (OHID)

NCVIN interprets and translates complex data for national and local stakeholders, to inform policy and local decision making and to improve cardiovascular services and outcomes for patients. The team produces trustworthy cardiovascular health intelligence products including profiles and specialist analyses that are innovative and focus on user needs.

NHS DIGITAL

NHS Digital is the trading name of the Health and Social Care Information Centre, which is the national provider of information, data and IT systems. The team design, develop and operate the national IT and data services that support clinicians at work, help patients get the best care, and use data to improve health and care.

PATIENTS ASSOCIATION

The Patients Association is an independent patient charity campaigning for improvements in health and social care for patients. Uniquely for a charity with a remit covering all health and care issues, it works with patients directly: they are its members and supporters, and also the people who benefit from the charity's help and advice services. Through the Patients Association's helpline they support thousands of people each year with their concerns and queries about the health and social care system. The Patients Association speak to government, the NHS and other stakeholders about patients' priorities and concerns, to ensure the patient voice is heard and acted upon.

Authors: Office for Health Improvement & Disparities (OHID) and NHS Benchmarking Network, June 2022

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FOREWORD

We are delighted to introduce the Second Annual Audit Report for the CVDPREVENT audit, covering the period up to March 2021 (round two). As promised in the **CVDPREVENT First Annual Audit Report**, new CVDPREVENT indicators are introduced in this round of the audit as we work towards painting a comprehensive picture across the cardiovascular disease (CVD) prevention pathways for each of the six high-risk conditions covered by the audit. In this round two, we are excited to introduce unique, new indicators incorporating the ‘case finder’ cohort comprising people with clinical records with readings that suggest the possibility of an undiagnosed high-risk condition. These new indicators support the national priority to identify people with hypertension as set out in the Network Contract Direct Enhanced Service, CVD prevention and diagnosis; supplementary guidance⁽¹⁾ (DES) and Investment Impact Fund 21/22 Updated Guidance⁽²⁾ (IIF).

We are pleased to note that, for round two of the audit, data was received from 93% of general practices, covering 93% of England’s population.

The **CVDPREVENT Data and Improvement Tool** is an online tool, providing open access to the audit data. It was updated with the March 2021 results for the round one indicators in February 2022 and is now updated with the new, round two indicators alongside the publication of this report.

The period under review covers the first year of the COVID-19 pandemic, which significantly impacted primary care services. Early on in the pandemic GP teams quickly adopted remote consultation models to reduce community transmission and subsequently national guidance required resources be focused on vaccination. Restoration of routine services is now underway, but both of these factors, and the associated behavioural patterns of patients, impacted the diagnosis, treatment and monitoring of patients at risk of CVD. This report is designed to support primary care and highlight areas where CVD prevention activity can be targeted.

There was also a change in emphasis in the way the Quality and Outcomes Framework (QOF) was implemented to enable GPs to prioritise vaccination and respond to the COVID-19 pandemic, although eight prescribing indices were not suspended.⁽³⁾ Disruption to much of the usual QOF reporting may have impacted recording of CVD risk factors, and data for 2020/21⁽⁴⁾ demonstrated, in particular, a significant change in the QOF hypertension data recorded across practices in England.

The CVDPREVENT dataset, used in this report, covers the COVID-19 response period (up to March 2021) and has been used to look at in-year trends to help to investigate further some of the findings in the 2020/21 QOF reporting. An additional section has been included to cover the findings from this in-year analysis. Further, the ability to review health inequalities dimensions for the CVDPREVENT indicators enables an assessment of whether particular patient groups have been more disadvantaged than others during the pandemic and assists systems in identifying their Core20PLUS5⁽⁵⁾ populations.

This report builds on published Office for Health Improvement and Disparities (OHID) analysis on excess mortality in England which suggests that between July and October 2021 there were around 5,000 non-COVID-19 excess deaths primarily driven by CVD and diabetes.⁽⁶⁾

The report adds to the picture of what happened to hypertension diagnosis and management during 2020/21 and will be invaluable to recovery planning.

We would like to thank the CVDPREVENT Audit Steering Group for their invaluable advice and support and the CVDPREVENT Patient Panel, who ensure the patient perspective is at the heart of audit delivery.

Dr Shahed Ahmad

National Clinical Director for Cardiovascular Disease Prevention
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EXECUTIVE SUMMARY

This second report presents analysis of GP recorded data for relevant patient cohorts up to March 2021 (round two). The **CVDPREVENT First Annual Audit Report**, covering the period up to March 2020 (round one), together with the first iteration of the **CVDPREVENT Data and Improvement Tool**, were published in December 2021. In this latest report, results are compared with the pre-pandemic (round one) baseline. A key focus of the CVDPREVENT analysis is to understand variation in identification, diagnosis and management of people at risk of CVD across dimensions of potential health inequity including deprivation, age, sex and ethnicity. In round two, the first COVID-19 response year, the impact of the pandemic across the health inequality dimensions is considered.

KEY FINDINGS:

The audit saw an increase in **coverage of GP practices** to 93%, from 79% in round one, covering 93% of England's population.

Diagnosis of high-risk conditions. The biggest disruption to diagnosis/recording of CVD risk factors occurred in the first lockdown period at a time when there were fewer face to face appointments as GP practices adopted remote consultation to limit the risk of COVID-19 transmission and protect patients. There was, however, an increase in the number of new diagnoses per month over the course of the rest of the year. As of March 2021, these were approaching a recovery to pre-pandemic levels. Hypertension diagnoses recovery was slower than both atrial fibrillation (AF) and chronic kidney disease (CKD) diagnoses.

Blood pressure (BP) monitoring has been affected by the pandemic. Fewer people had a BP recorded on GP records in the period up to March 2021. There was only small variation within the inequality breakdowns for BP monitoring compared with the pre-pandemic baseline, suggesting that no particular group missed out on recorded BP monitoring more than any other group.

Performance on **hypertension management** indicators in both QOF and CVDPREVENT has reduced largely because fewer people had a BP recorded within the previous 12 months. If no BP was taken in the last 12 months, the patient with hypertension would count as not being treated to target. Of those with a recorded BP in the past year, there were slightly fewer people achieving the NICE guidance treatment targets⁽⁷⁾ compared to the previous year. It is not possible to comment on the BP management levels of the group of patients who had no recorded BP in the year.

Considering potential **health inequalities dimensions** for the hypertension management indicators, the reduction in the number of people treated to target was similar across age, deprivation and ethnic groups. There was a slightly greater impact on females than males which, for the 18 to 79 age group, had the effect of slightly closing the gap between females and males on the treatment to BP target, which was identified in round one.

CCG variation increased on the CVDPREVENT hypertension management indicators.

There has been little disruption to the **prescription indicators** in the CVDPREVENT audit. Anticoagulation for people with high-risk AF and lipid lowering therapy levels for people with existing CVD and CKD remain broadly similar in round two, compared to round one. Eight QOF prescribing indicators were unaffected by suspension in the period under review.

New indicators introduced for round two, focusing on **case finding**, indicate around 554,000 people in the audit sample whose latest BP value was in the at-risk range for hypertension but had no record of hypertension, approximately 73,000 people with cholesterol levels in the at-risk range for FH with no recorded FH diagnosis or investigations, 617,000 people with their most recent estimated glomerular filtration rate (eGFR) suggesting CKD, with no recorded CKD, and 315,000 with their last two eGFRs suggesting CKD, with no recorded CKD.

In terms of potential **missed opportunities for monitoring and treatment**, 43% of people with no GP recorded CVD and a QRISK score of 10% or more, were on a lipid lowering therapy. Two thirds of CKD patients with hypertension and proteinuria were recorded as being currently treated with renin-angiotensin system antagonists. A new indicator for CKD considers the monitoring of albumin:creatinine ratio (ACR) to detect elevated protein in the urine. People with a CKD diagnosis should have their ACR checked annually.⁽⁸⁾ The results for this indicator, for the period up to March 2021, showed only about a quarter of those with CKD had an ACR test in the last 12 months.

RECOMMENDATIONS

Below are the national level recommendations for round two of the CVDPREVENT audit.

1. BP MONITORING

As part of national recovery plans, GP practices should maintain a focus on restoring diagnosis, monitoring and management of hypertension, AF and high cholesterol to at least pre-pandemic levels. Initiatives such as Making Every Contact Count, Blood Pressure@Home and community pharmacy BP checks should be optimised, with clinical leadership and project management support available to ensure effective local implementation.

2. HEALTH INEQUALITIES

Integrated Care Systems (ICS) working with primary care, should, as part of their response to Core20PLUS5, review the health inequalities dimensions within the **CVDPREVENT Data and Improvement Tool** to understand where they are outlying on the CVDPREVENT hypertension identification and management indicators. Building on the shift to population health, ICSs should allocate resources to support primary care to identify and review patient cohorts where case finding and interventions to optimise BP show the greatest gap compared to national performance.

3. DATA QUALITY

To support the Core20PLUS5 initiative, the completeness of ethnicity coding in general practice should be further improved.

INTRODUCTION

CVDPREVENT is a national primary care audit that uses data extracted from GP records.⁽⁹⁾ It supports primary care in understanding how many people with CVD or conditions that lead to a higher risk of developing CVD are potentially not identified, undiagnosed, under treated or possibly over-treated. Analysis and reporting of the audit supports systematic quality improvement (QI) to reduce health inequalities and improve outcomes for individuals and populations. The CVDPREVENT audit is part of broader strategic objectives outlined in the **NHS Long Term Plan** and national **CVD prevention ambitions** to prevent 150,000 strokes, heart attacks and cases of dementia over the next ten years.

Data⁽¹⁰⁾ is extracted for people that fall within the following cohorts:

COHORT 1 – people with a coded diagnosis of at least one of the following six high-risk conditions:

- Atrial fibrillation (AF)
- Hypertension
- Familial hypercholesterolaemia (FH) and other hyperlipidaemias
- Chronic kidney disease (CKD)
- Non-diabetic hyperglycaemia (NDH)
- Type 1 or type 2 diabetes mellitus

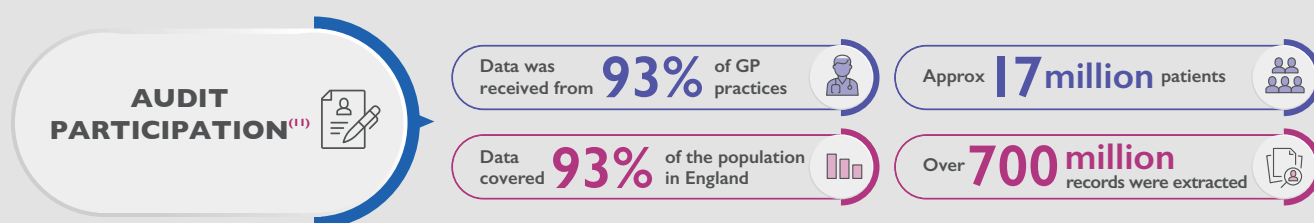
COHORT 2 – people with pre-existing cardiovascular disease comprising at least one of the following:

- Stroke or transient ischaemic attack (TIA)
- Coronary heart disease (CHD)
- Heart failure (HF)
- Abdominal aortic aneurysm (AAA)
- Peripheral arterial disease (PAD)

COHORT 3 – case finder cohort consisting of people with clinical records with readings that suggest the possibility of an undiagnosed high-risk condition

This report summarises the findings relating to data from relevant patient records up to March 2021 at a national level. Comparable data at local level is provided in the **CVDPREVENT Data and Improvement Tool** which, for prevalence, provides detailed analysis by age, sex and deprivation for each ICS and CCG in England and, for clinical indicators, provides results at GP practice level, and analysis by age, sex, ethnicity and deprivation at ICS, CCG and PCN level.

This report introduces new (round two) indicators with a focus on identification of people with CVD high-risk conditions. The new indicators will be included in the Data and Improvement Tool alongside the publication of this report. At the same time, the round one and round two indicators will be refreshed in the Data and Improvement Tool with data for the period up to September 2021.



STRUCTURE OF THIS REPORT

The driver diagram (figure 1) illustrates how the overall aim of the audit is linked to the CVDPREVENT quality improvement effort. The audit is working towards answering four key questions, shown in the diagram, to support the overall audit aim. Audit indicators have been developed to begin to address these key questions for each of the six high-risk conditions. Adding to the 11 indicators from round one (**CVDPREVENT First Annual Audit Report**), this second report introduces 10 new indicators to CVDPREVENT.

The audit is initially looking at AF, hypertension, cholesterol and chronic kidney disease. The aim is to complete the picture over subsequent iterations of the audit and, where relevant, by pointing readers to other data sources such as the **National Diabetes Audit**.

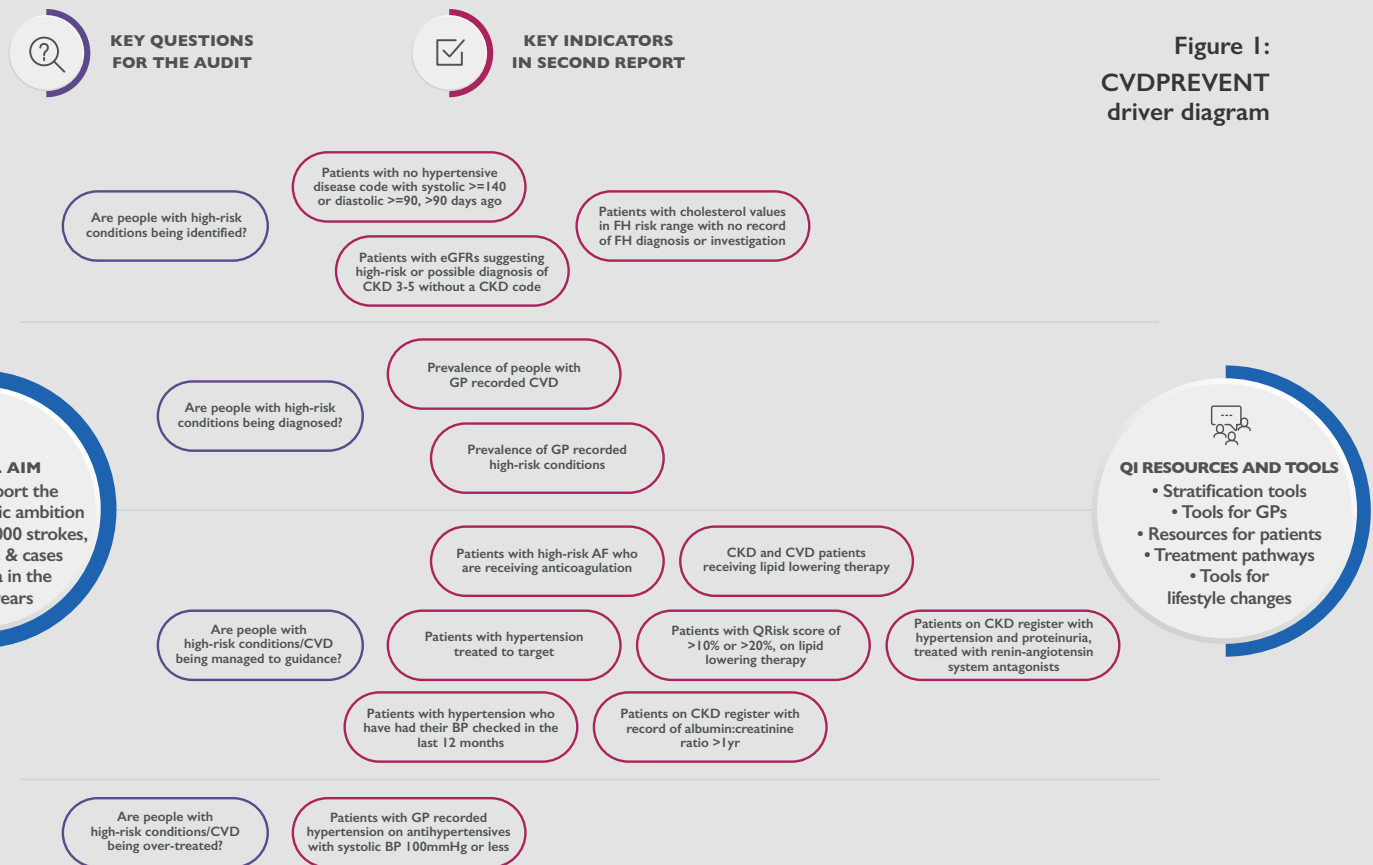
Future CVDPREVENT indicators will align with developments within the CVD prevention DES, IIF and QOF Quality Improvement module and other policy and guidance where possible.

Given the period under review covers the first year of the COVID-19 pandemic, this report includes a section (pages 11-12) on the impact of the pandemic on CVD prevention, including some additional analysis on in-year diagnosis rates and monitoring. This analysis provides context within which changes to indicator values between the years highlighted in later sections of the report, can be considered.

In this report, geographical variation is reviewed at CCG level.⁽¹²⁾ Reporting at ICS, CCG, PCN and GP practice level can be found in the **CVDPREVENT Data and Improvement Tool**.

Analysis of prevalence by ethnicity is not reported on due to missing ethnicity data.⁽¹³⁾ Ethnicity codes were missing for approximately 18% of people in the audit sample in round two, compared to 21% in round one. This improvement has been supported by incentives in the IIF, however, further improvement is encouraged (see recommendation 3, page 8).

All findings are based on extracts of recorded data from 93% of GP practices in England. The section 'Reading this report' (page 41) provides an explanation of the chart formats used.



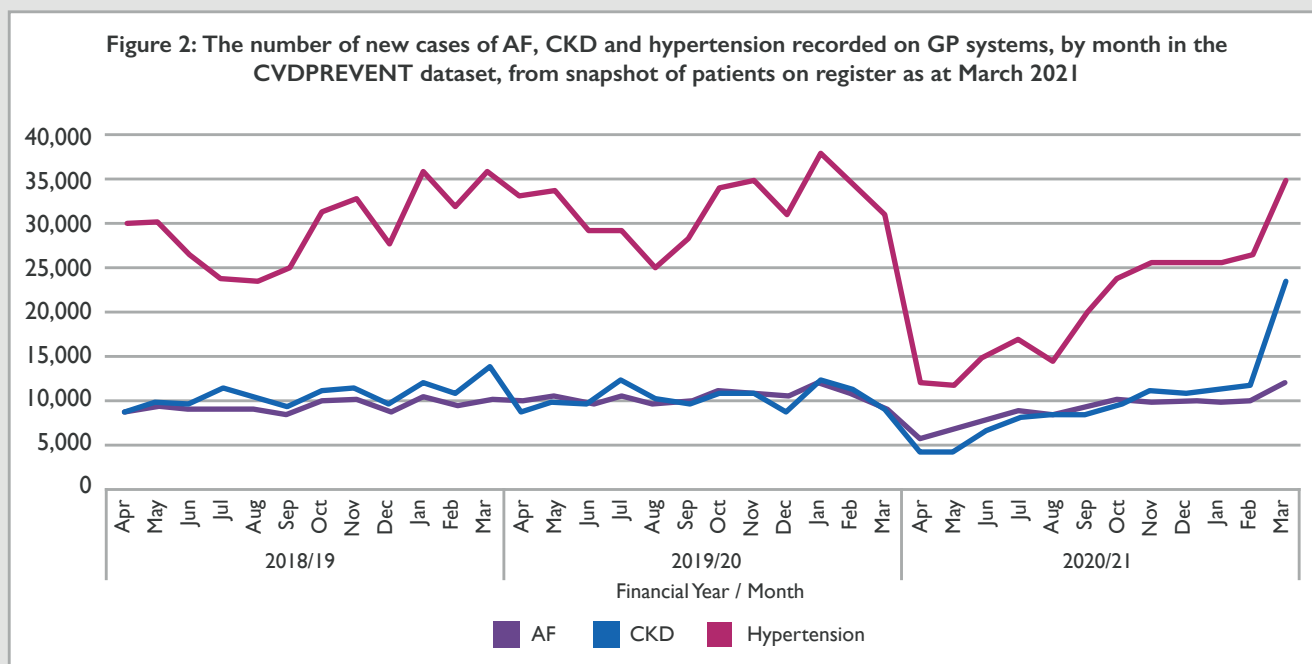
IMPACT OF THE COVID-19 PANDEMIC ON CVD PREVENTION

Insights from monthly analysis of the CVDPREVENT dataset during the COVID-19 response year (2020/21):
Diagnoses recorded

- The diagnosis and recording of CVD risk factors was disrupted in the first lockdown period when there were fewer face to face appointments and competing priorities in primary care related to managing COVID-19
- There was an increase in the number of new diagnoses per month over the course of the rest of the year, from June 2020 onwards, and, as of March 2021, new diagnoses were approaching recovery to pre-pandemic levels
- Hypertension diagnosis recovery was slower than both AF and CKD diagnoses and, despite the recovery, new hypertension diagnoses over the whole year were still over 30% lower than the previous year

QOF data suggests the prevalence of people diagnosed and recorded on GP registers decreased slightly for AF, hypertension and CKD from 2019/20⁽¹⁴⁾ to 2020/21.⁽¹⁵⁾ As the QOF figures represent a prevalence at a specific point in time, this implies that either fewer people were diagnosed than usual in 2020/21 or more people with the condition were dying. QOF does not include incidence (the number of new cases diagnosed per year) so it is not possible to gauge the impact of either of these reasons on the overall prevalence from the QOF data.

CVDPREVENT data collects the first recorded date in GP records where a diagnosis is made and can be used to estimate the number of new records/diagnoses of conditions each month. This method is not an incidence measure, and only includes people who are alive and on the GP register at the audit collection date. This means that the further the analysis looks backwards, the less accurate the figures become, as they represent an underestimate of the true number of people on GP lists at that time point. With these caveats, figure 2 shows the number of new diagnoses of AF, CKD and hypertension recorded on GP systems per month from 2018/19 to 2020/21.

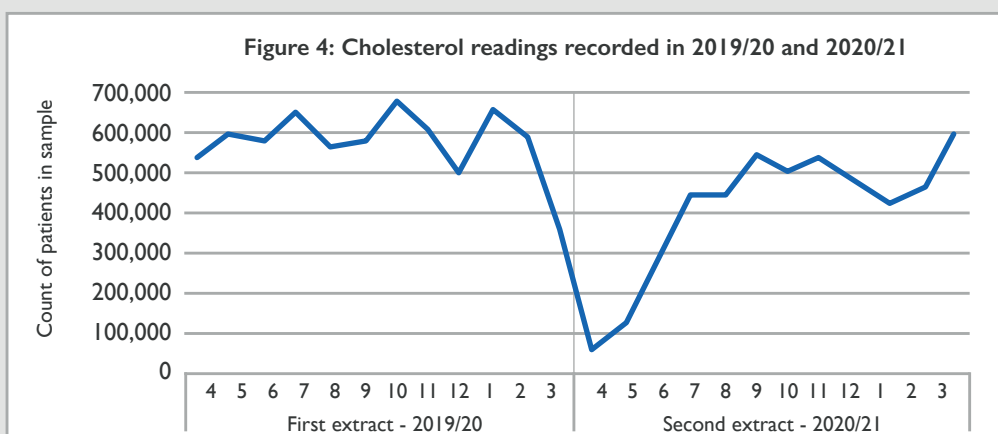
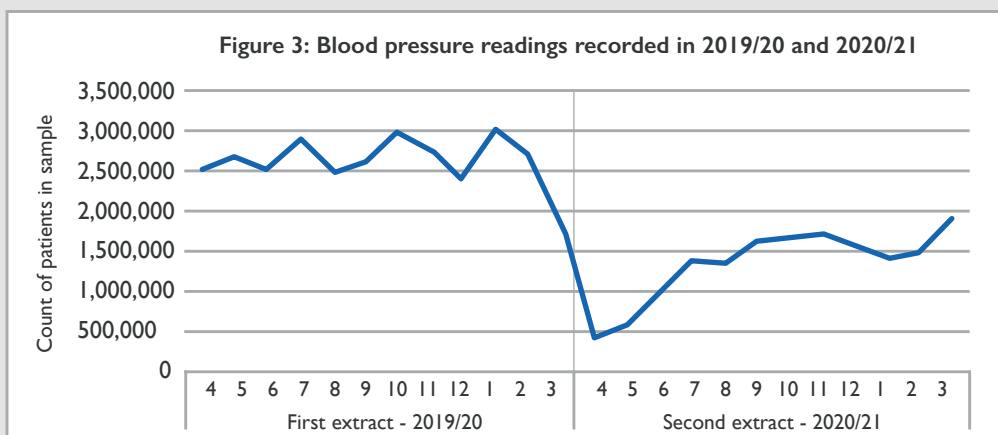


IMPACT OF THE COVID-19 PANDEMIC ON CVD PREVENTION

Insights from monthly analysis of the CVDPREVENT dataset during the COVID-19 response year (2020/21):
Monitoring of blood pressure and cholesterol

- BP and cholesterol readings per month during 2019/20 slightly fluctuated before dropping in February 2020, just before the start of the first lockdown
- The number of recorded BP readings per month began to rise again in May 2020 but stayed below 2019/20 levels throughout 2020/21
- There was a sharp recovery in cholesterol readings per month from May 2020 onwards, with recovery to pre-pandemic levels by March 2021

NICE recommends that people with hypertension should undergo regular review to assess BP control in relation to clinically accepted thresholds.⁽¹⁶⁾ The monthly analysis in figure 3 demonstrates the reduction in all recorded BP readings over the pandemic period. Investigation of the BP and cholesterol readings by month over the two year period required the analysis of both CVDPREVENT extracts (i.e. to the end of March 2020 and the end of March 2021). To ensure that the data is comparable a sample of the practices present in both extracts was taken. The sample included approximately half the practices in England. For ease of interpretation the data from the two extracts has been displayed on the same graph.



FINDINGS

ATRIAL FIBRILLATION (AF)



Are people with high-risk conditions being identified?

Identification of people with AF is not addressed in this iteration of the audit.

Are people with high-risk conditions being diagnosed?



Are people with high-risk conditions/CVD being managed to guidance?

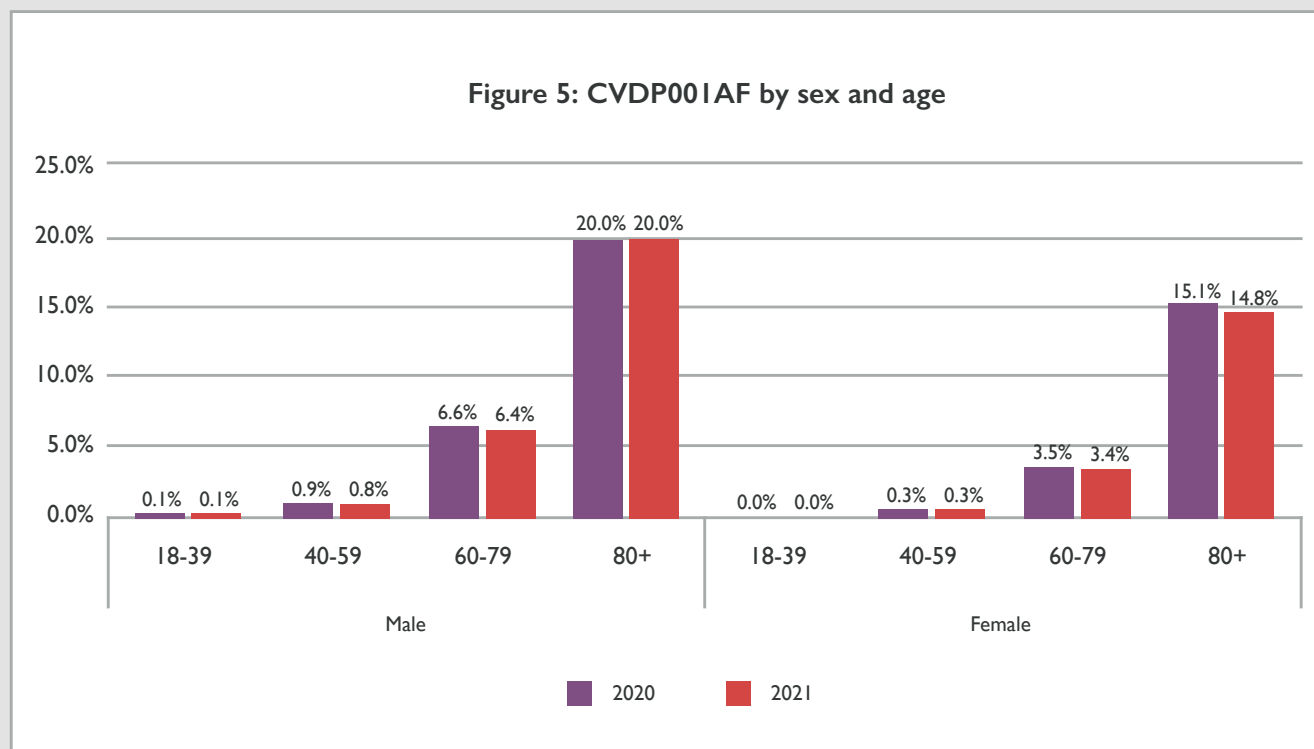


ARE PEOPLE WITH HIGH-RISK CONDITIONS BEING DIAGNOSED?

The following indicator is updated from round one and measures:

- **CVDP001AF:** Prevalence of GP recorded atrial fibrillation (AF) in patients aged 18 and over.⁽¹⁷⁾

- The prevalence of GP recorded AF in England was **2.3%** in the period up to March 2021, showing little change from the **2.4%** recorded in the period up to March 2020
- As in round one, the data up to March 2021 showed that prevalence was higher in males (**2.7%**) than in females (**1.9%**)
- Prevalence increased with age to **4.9%** of those aged 60 to 79 years and **16.9%** of those aged 80+, in the same pattern as found in round one
- CCG variation was lower in round two (**1.1% to 3.9%**) when compared to round one (1.1% to 4.2%)
- In round one, after estimated age adjustment, AF prevalence across deprivation quintiles in England was similar (note that the estimates only took account of age and no other possible effects). There has been negligible change in the deprivation quintile profile in the data to March 2021



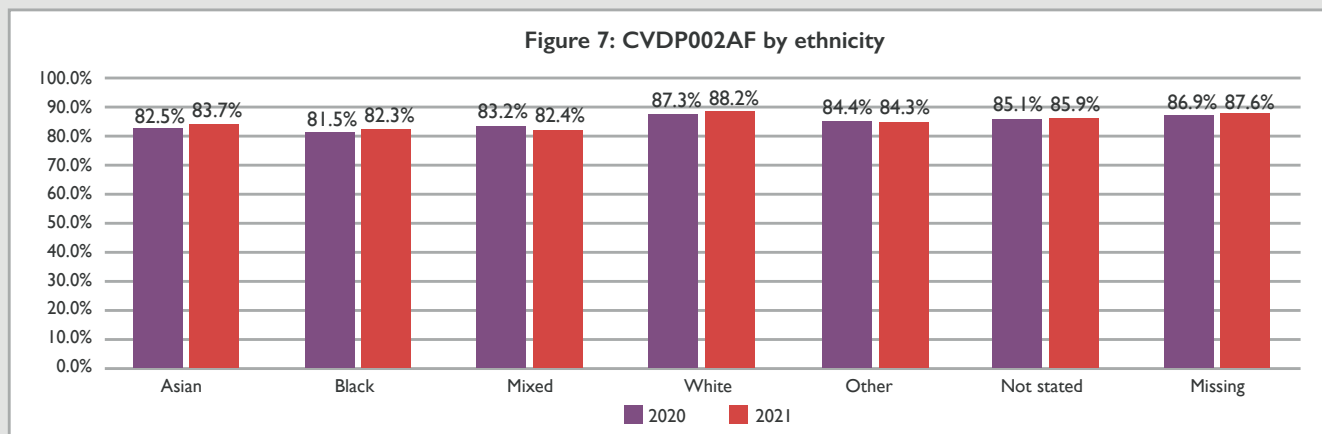
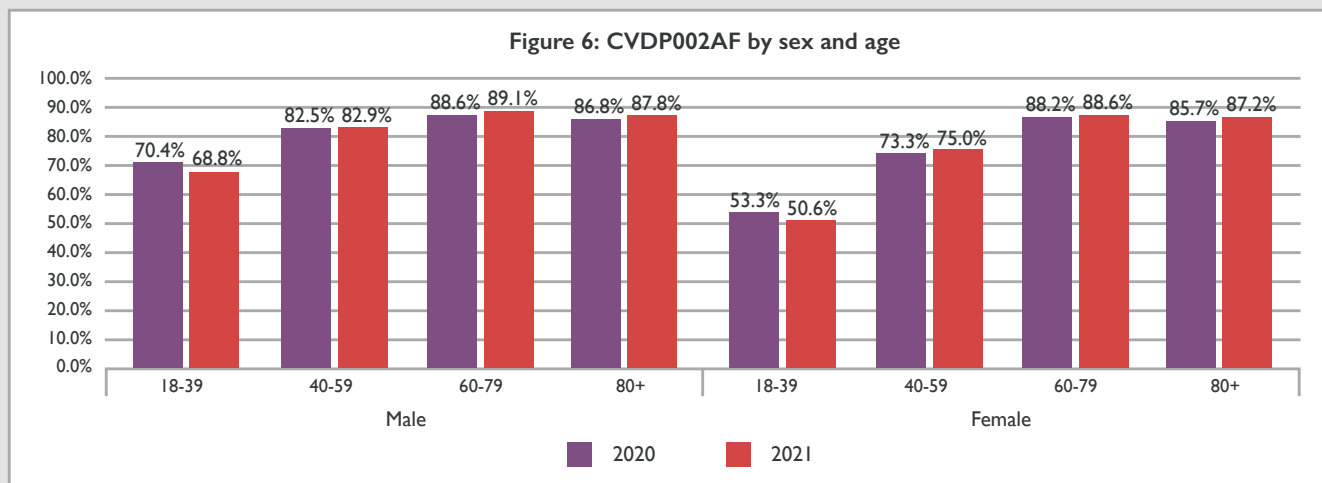


ARE PEOPLE WITH HIGH-RISK CONDITIONS/ CVD BEING MANAGED TO GUIDANCE?

The following indicator is from round one and measures:

- **CVDP002AF:** The percentage of patients aged 18 and over with GP recorded AF and a record of a CHA2DS2-VASc score of 2 or more who are currently treated with anticoagulation drug therapy.⁽¹⁸⁾

- The data up to March 2021 showed **87.9%** of people with GP recorded AF and a CHA2DS2-VASc score of 2 or more had been prescribed an anticoagulant, compared to 87.0% in round one
- There were small increases in the prescription of anticoagulants in both eligible males (**88.3%**) and eligible females (**87.4%**) in the March 2021 data, however, females aged 40 to 59 years were still less likely to have a prescription than their male counterparts (75.0% and 82.9% respectively)
- Only the youngest age group (18 to 39 years) showed a decrease in recorded prescription of anticoagulants in round two (**58.5%**) when compared to round one (60.6%)
- Variation across CCGs (71.4% to 93.4%) was **4.3** percentage points lower in round two
- Most ethnicity groups showed small increases in prescription rates when compared to round one, with the White ethnic group still most likely (**88.2%**) to be anticoagulated and the Black ethnic group least likely (**82.3%**)
- As in round one, prescription of anticoagulants showed little variation across deprivation quintiles



ATRIAL FIBRILLATION: COMMENTARY

AF is the most common cause of an irregular heartbeat. It often causes no symptoms but people with AF are five times more likely to suffer a stroke, and people who suffer an AF-related stroke are more likely to die or suffer severe disability than any other type of stroke. However, treating AF with anticoagulant (blood thinning) medication reduces the risk of stroke by up to two thirds.⁽¹⁹⁾

Despite the serious impact of AF, many people are unaware they have the condition, and even when diagnosed, many are untreated. Indeed, half of all people with known AF who suffer a stroke have not received anticoagulants before their stroke.

Consistent with the QOF data referenced on page 11, CVDPREVENT showed a very slight reduction in the prevalence of GP recorded AF (CVDP001AF) in England (from 2.4% to 2.3%) in the period to March 2021. Both sexes, and all age groups, were impacted to a similar degree, such that the age and sex prevalence profiles remained unchanged (figure 5). Analysis of the monthly CVDPREVENT data on the number of new AF diagnoses recorded suggested a recovery in diagnosis numbers from May 2020 onwards, accelerating in February and March 2021 to pre-pandemic levels (figure 2, page 11).

From the CVDPREVENT data, there was little change in the proportion of people with high-risk AF who were receiving anticoagulants (CVDP002AF) between round one and round two of the audit (CVDP 87.0% and 87.9%) and these figures are similar to QOF data for 2019/20 and 2020/21. There was little change in the pattern of prescribing between age, sex, ethnic groups and deprivation quintiles. As in round one, females aged 40 to 59 years were less likely to have a prescription than their male counterparts. The Black ethnic group was the group least likely to have a prescription for anticoagulants.

FINDINGS

HYPERTENSION



Are people with high-risk conditions being identified?

Are people with high-risk conditions being diagnosed?



Are people with high-risk conditions/CVD being managed to guidance?

Are people with high-risk conditions/CVD possibly being over-treated?





ARE PEOPLE WITH HIGH-RISK CONDITIONS BEING IDENTIFIED?

The following indicator is new for round two and measures:

- **CVDP005HYP:** Percentage of GP registered patients aged 18 and over, whose latest blood pressure value is in the at-risk range (systolic ≥ 140 mmHg and diastolic ≥ 90 mmHg) for hypertension with no GP recorded hypertension.⁽²⁰⁾

CVDP005HYP

- The percentage of GP registered patients whose latest BP value is in the at-risk range for hypertension, with no hypertension GP record was **1.2%** (a total of 554,124 people in the audit sample)
- The percentage for males (**1.3%**) and females (**1.2%**) was similar
- The percentage of patients increased with age up to the 60 to 79 year age group
- At the CCG level, the percentage varied from **0.7%** to **1.9%**
- Although there was little variation across deprivation quintiles, when an adjustment for age is undertaken, there was a small but increasing difference from the least deprived quintile (**1.08%**) to the most deprived quintile (**1.41%**) (note that the estimates only took account of age and no other possible effects)

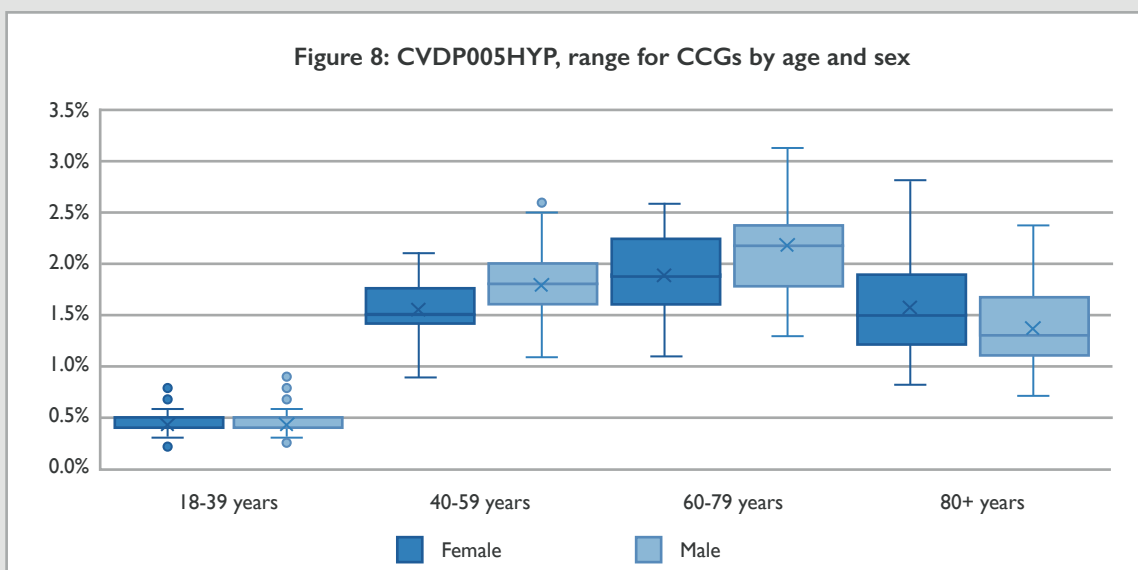


Figure 9: CVDP005HYP, Percentage of GP registered patients aged 18 and over, whose latest blood pressure value is in the at-risk range (systolic ≥ 140 mmHg and diastolic ≥ 90 mmHg) for hypertension with no GP recorded hypertension: Results for the national (England) audit sample by age and sex

	18-39	40-59	60-79	80+ years
Female	0.4% (31,620)	1.5% (107,968)	1.9% (101,265)	1.6% (25,377)
Male	0.4% (32,756)	1.7% (132,182)	2.1% (107,182)	1.4% (15,150)



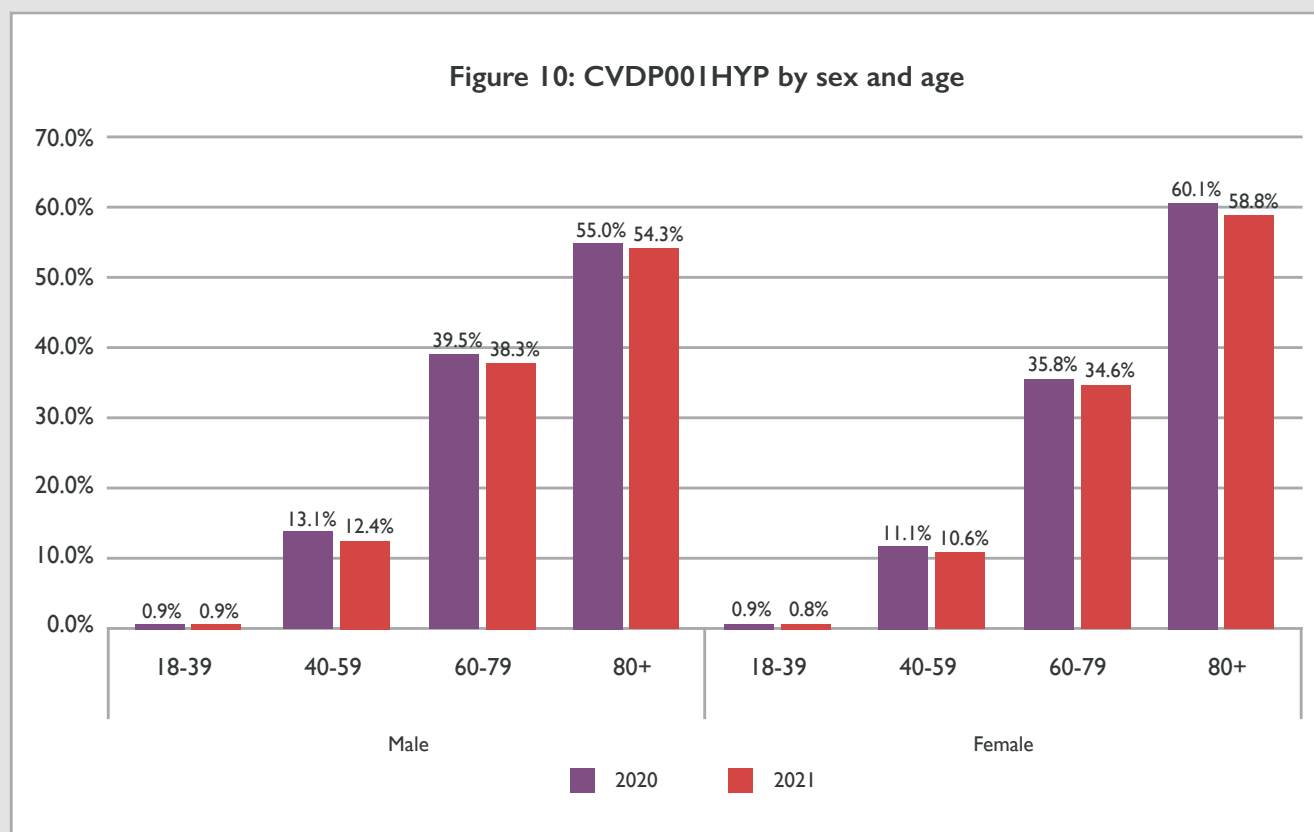
ARE PEOPLE WITH HIGH-RISK CONDITIONS BEING DIAGNOSED?

The following indicator is updated from round one and measures:

- **CVDP001HYP**: Prevalence of GP recorded hypertension in patients aged 18 and over.⁽²¹⁾

CVDP001HYP

- The prevalence of GP recorded hypertension was **15.9%** in the period to March 2021, compared to 16.4% in the period to March 2020
- As in round one, overall, there was no difference found between males and females (**both 15.9%**) but hypertension prevalence was higher for males than for females in the age groups 40 to 59 years and 60 to 79 years, but lower for males aged over 80 years
- In round two, after estimated age adjustment, hypertension prevalence was **3.0** percentage points higher in the most deprived quintile in England compared to the least deprived (note that the estimates only took account of age and no other possible effects), a similar finding to round one





ARE PEOPLE WITH HIGH-RISK CONDITIONS/CVD BEING MANAGED TO GUIDANCE?

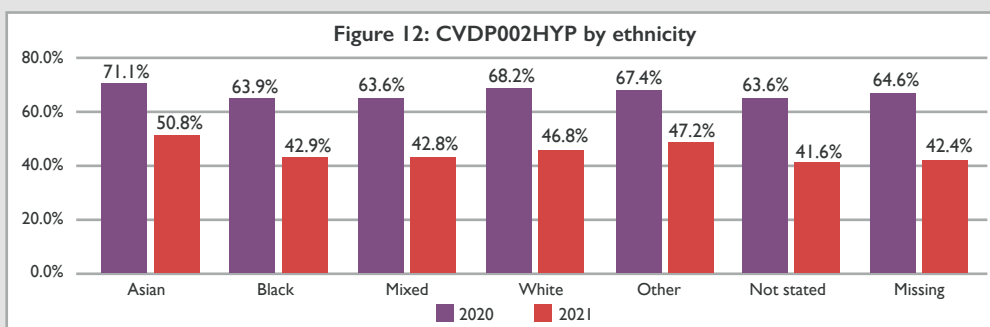
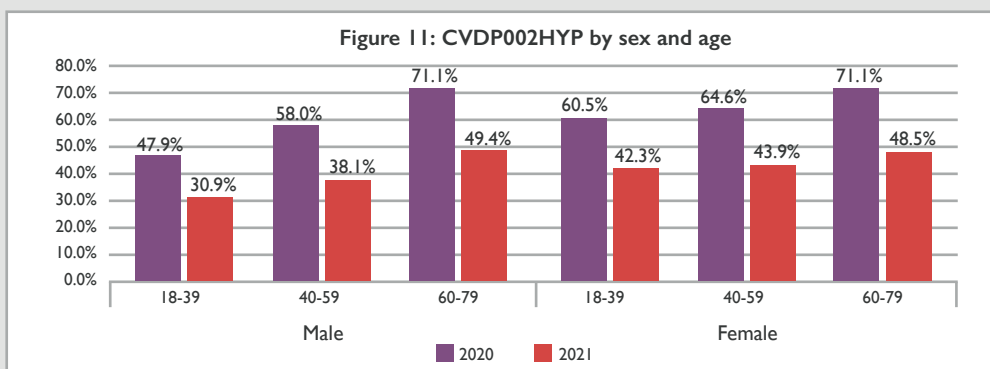
The following indicators are updated from round one and measure:

- **CVDP002HYP:** The percentage of patients aged 18 to 79 years with GP recorded hypertension, in whom the last blood pressure reading within the preceding 12 months is equal to 140/90 mmHg or less.⁽²²⁾
- **CVDP003HYP:** The percentage of patients aged 80 years or over, with GP recorded hypertension, in whom the last blood pressure reading within the preceding 12 months is 150/90 mmHg or less.⁽²³⁾
- **CVDP004HYP:** The percentage of patients aged 18 and over with GP recorded hypertension who have had a blood pressure reading within the preceding 12 months.⁽²⁴⁾

Note that if no BP was taken in the last 12 months, the patient with hypertension would count as not being treated to target in indicators CVDP002HYP and CVDP003HYP (see hypertension commentary (page 23) for further explanation)

CVDP002HYP

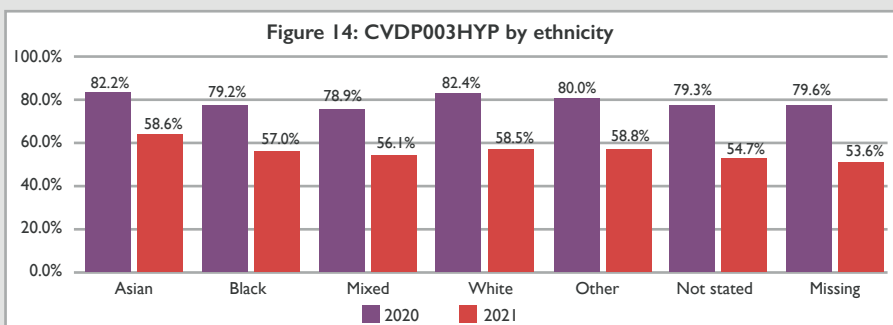
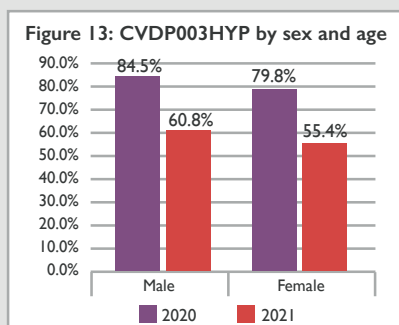
- For those aged 18 to 79 years, **46.1%** were recorded as treated to NICE guidance,⁽²⁵⁾ a reduction of 21.4 percentage points from the round one value
- **47.0%** of females (69.0% in round one, a drop of 22 percentage points) and **45.3%** of males (66.2%, a drop of 20.9 percentage points) were treated to target, with the gap between males and females closing slightly, due to the slightly bigger reduction for females
- The variation between CCGs has increased from 12.7 percentage points from highest to lowest in round one to **21.6** percentage points from highest to lowest in round two (35.1% to 56.7%)
- The percentage reduction across all ethnic groups was similar
- Little variation was found between deprivation quintiles as in round one of the audit



CVDP003HYP

See caveat on page 20

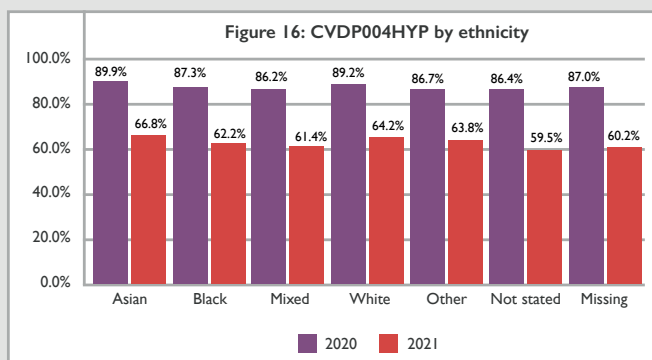
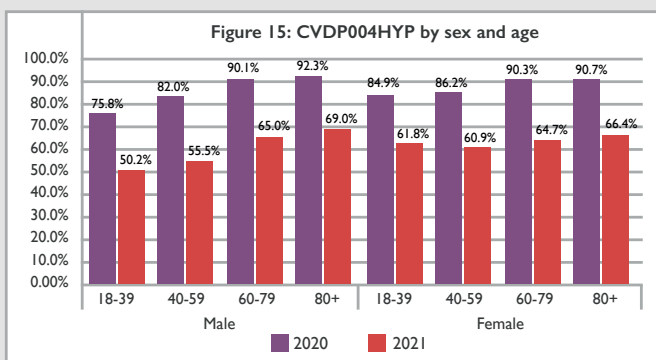
- For those aged 80 years and over, **57.5%** were recorded as treated to NICE guidance, a reduction of 24.1 percentage points from the round one value
- **55.4%** of females (79.8% in round one, a reduction of 24.4 percentage points) and **60.8%** of males (84.5% in round one, a reduction of 23.7 percentage points) were treated to target
- Variation between CCGs increased to **30.2** percentage points from highest to lowest in round two (40.7% to 70.9%) from 13.6 percentage points in round one
- The percentage reduction across all ethnic groups was similar
- As in round one of the audit, there was little variation between deprivation quintiles



CVDP004HYP

See caveat on page 20

- The percentage of those with hypertension with a BP reading in the last 12 months was **63.5%** a reduction of 25.2 percentage points from the round one value
- **64.2%** of females (89.4% in round one, a reduction of 25.2 percentage points) and **62.8%** of males (87.9% in round one, a reduction of 25.1 percentage points)
- As in round one, males in the age group 18 to 39 years were least likely to have a recorded BP reading in the last 12 months
- Variation between CCGs increased to **25.9** percentage points from highest to lowest in round two (49.4% to 75.3%) from 7.5 percentage points in round one
- The percentage reduction across all ethnic groups was similar
- As in round one of the audit, there was little variation between deprivation quintiles





ARE PEOPLE WITH HIGH-RISK CONDITIONS/CVD POSSIBLY OVER-TREATED?

The following indicator is new for round two and measures:

- **CVDP006HYP:** Percentage of patients aged 18 and over with GP recorded hypertension, prescribed at least one antihypertensive treatment with last systolic blood pressure 100mmHg or less with a subsequent antihypertension medication prescription date.⁽²⁶⁾

CVDP006HYP

- The percentage of patients with GP recorded hypertension on at least one antihypertensive treatment with last systolic BP 100mmHg or less, with a subsequent antihypertension medication prescription date was **0.3%** (a total of 24,603 people in the audit sample)
- The percentage for males and females was the same (**0.3%**)
- The percentage of patients increased with age up to **0.6%** in the over 80 years age group
- At the CCG level, the percentage varied from **0.2%** to **0.6%**
- There was little variation across deprivation quintiles

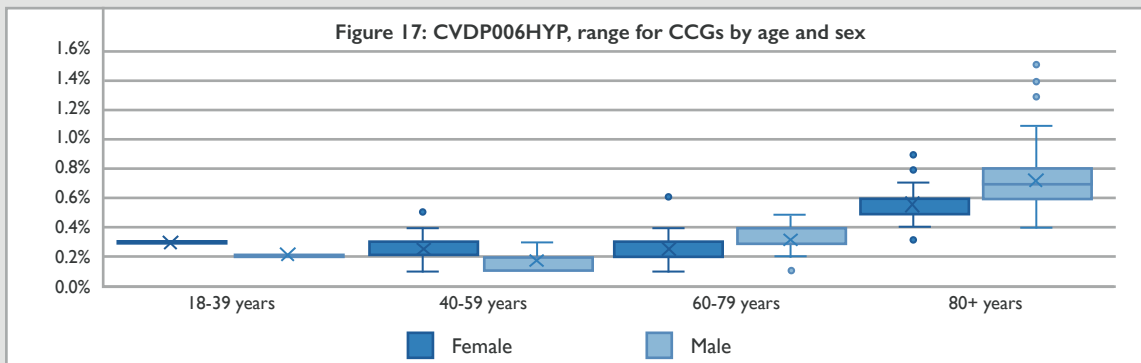
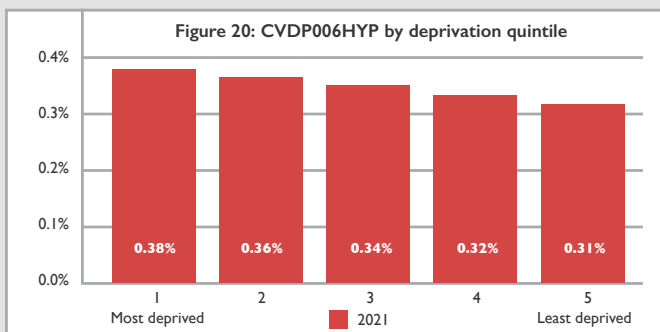
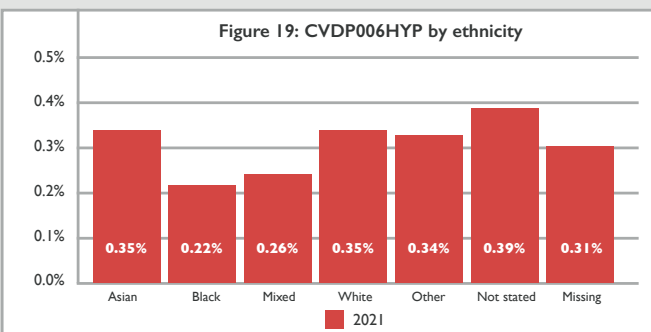


Figure 18: CVDP006HYP, Percentage of patients aged 18 and over with GP recorded hypertension, prescribed at least one antihypertensive treatment with last systolic blood pressure 100mmHg or less with a subsequent antihypertension medication prescription date: Results for the national (England) audit sample by age and sex

	18-39	40-59	60-79	80+ years
Female	0.22% (160)	0.26% (2,009)	0.27% (5,103)	0.55% (5,040)
Male	0.12% (89)	0.17% (1,606)	0.33% (6,381)	0.71% (4,215)



HYPERTENSION: COMMENTARY

The pandemic has had a major impact on recorded hypertension diagnosis and control.

Consistent with the QOF data referenced on page 11, CVDPREVENT showed a slight reduction in the prevalence of GP recorded hypertension in England (from 16.4% to 15.9%) in the period to March 2021 (CVDP001HYP). Both sexes, and all age groups, were impacted to a similar degree. Analysis of the monthly CVDPREVENT data on the number of new diagnoses recorded (page 11) suggested, despite the recovery from summer 2020 onwards, over the whole of 2020/21, total diagnoses were still down over 30% on the previous year.

The proportion of people with hypertension who had BP recorded during the previous 12 months (CVDP004HYP) reduced by 25.2 percentage points between the two rounds of the audit (page 21). The percentage point reduction across sex, age and ethnic groups was similar, suggesting that no particular group missed out on recorded BP monitoring.

For hypertensive patients, aged 18 to 79 years, there was a reduction of 21.4 percentage points in the proportion recorded as treated to the NICE guideline target (CVDP002HYP), and, for those aged over 80 years (CVDP003HYP), a reduction of 24.1 percentage points. It is important to note that if no BP was taken in the last 12 months, the patient with hypertension would count as not being treated to target in the calculation of these indicators.

To adjust for this, additional analysis was undertaken by NCVIN looking at the cohort of hypertensive patients **who did have a recorded BP reading** within the last 12 months, 76.4% were within NICE thresholds in 2020/21 compared to 80.5% in 2019/20 – a reduction of 4.1 percentage points. This suggests that the hypertension management indicators in both QOF and CVDPREVENT have reduced mainly because fewer people were having a BP recorded within the previous 12 months.

The difference by sex, age, deprivation and ethnic group was reviewed in this additional analysis, and there was little difference evident between the groups, except for a greater reduction for females (4.7 percentage points) than males (3.5 percentage points). This was consistent with the results for the CVDPREVENT treatment to target indicators (CVDP002HYP and CVDP003HYP), which also showed a consistent reduction across age, deprivation and ethnic groups (figures 11 to 14), but a slightly greater impact on females than males. For the age group 18 to 79 years, this had the effect of slightly closing the gap between females and males on the treatment to BP target, which was identified in round one.

The data shows a large percentage of hypertensive patients did not have their BP recorded in the last 12 months in the period up to March 2021 and, for those patients, it is not possible to know how well their BP was managed. However, additional analysis by NCVIN suggested there was little change in the percentage of people aged 18 and over with hypertension, who were prescribed an antihypertensive medication in the last seven months at 88.5% in 2020/21 compared to 89.1% in 2019/20, providing some reassurance on continuity of BP management for this group.

Additionally for round two, a new indicator (CVDP005HYP) reviews all three audit cohorts for people with an at-risk BP reading, indicating potential missed opportunities to identify people with hypertension. Percentage of patients on GP registers whose latest BP value is in the at-risk range for hypertension, but with no record of hypertension, amounted to a total of around 550,000 people in the audit sample. These people should not automatically be assumed to have hypertension but should be reviewed. Given, as noted above, there was less BP monitoring undertaken in the pandemic period, this figure may be an understatement of the full potential to identify people who may have hypertension.

Finally, a new indicator was introduced to look at possible over-treatment of people with hypertension (CVDP006HYP). This cohort (approximately 25,000 people in the audit sample) would benefit from a review, noting that a systolic BP of less than 100mmHg may be appropriate for an individual person.

FINDINGS

CHOLESTEROL



Are people with high-risk conditions being identified?

Are people with high-risk conditions being diagnosed?



Are people with high-risk conditions/CVD being managed to guidance?



ARE PEOPLE WITH HIGH-RISK CONDITIONS BEING IDENTIFIED?

The following indicator is new for round two and measures:

- **CVDP004FH:** Percentage of GP registered patients of all ages, whose cholesterol values are in the at-risk range (TC \geq 7.5mmol/l aged 29 and under or TC \geq 9.0mmol/l aged 30 and over) for FH with no GP record of FH diagnosis or investigation.⁽²⁷⁾

CVDP004FH

- The percentage of GP registered patients with cholesterol levels in the at-risk range for FH with no FH diagnosis was **0.13%** (a total of 73,002 people in the audit sample)
- Overall, there was little difference in the percentage between males and females
- The percentage of patients increased with age to **0.32%** in those aged 60 to 79 years and **0.52%** in those aged 80+
- There was little difference between deprivation quintiles

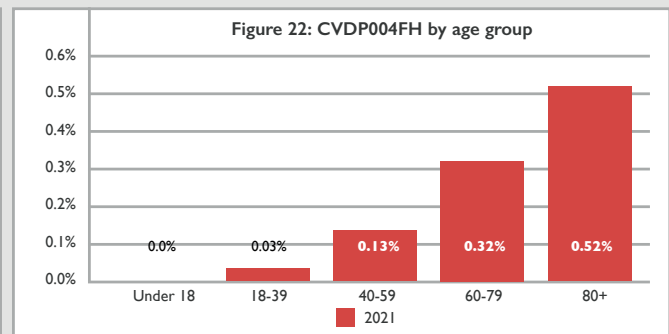
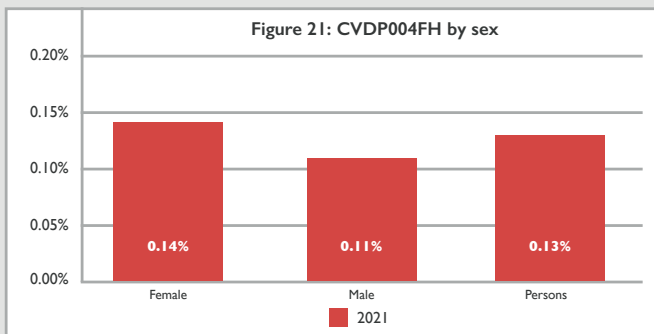
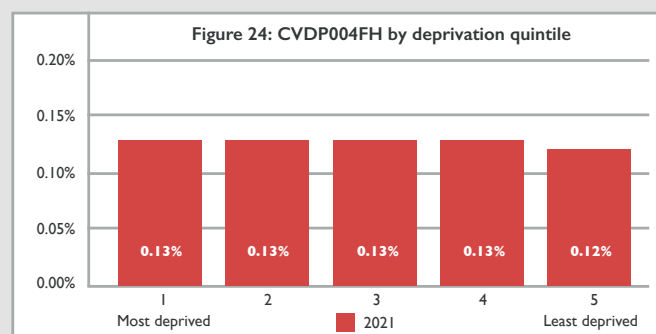


Figure 23: CVDP004FH, Percentage of GP registered patients of all ages, whose cholesterol values are in the at-risk range (TC \geq 7.5mmol/l aged 29 and under or TC \geq 9.0mmol/l aged 30 and over) for FH with no GP record of FH diagnosis or investigation: Results for the national (England) audit sample by age and sex

	18-39	40-59	60-79	80+ years
Female	0.03% (2,447)	0.11% (7,728)	0.36% (19,169)	0.73% (11,290)
Male	0.04% (3,140)	0.16% (12,255)	0.28% (14,128)	0.23% (2,508)





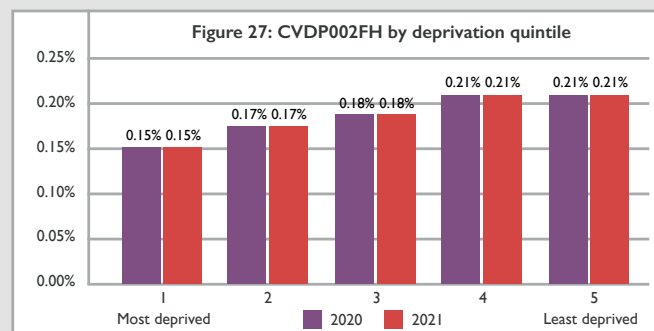
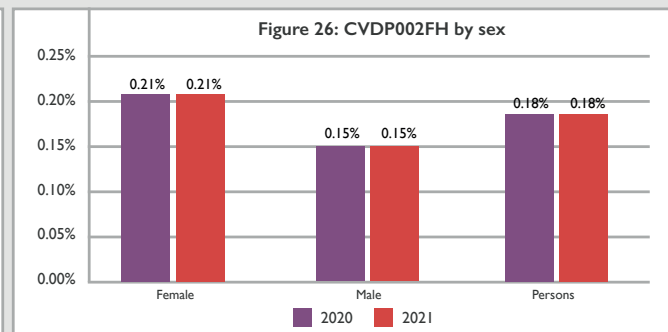
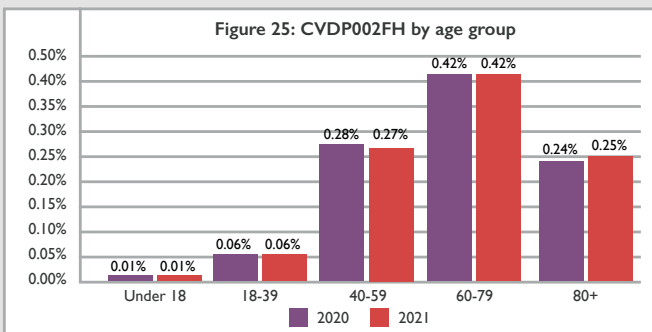
ARE PEOPLE WITH HIGH-RISK CONDITIONS BEING DIAGNOSED?

The following indicators are updated from round one and measure:

- **CVDP002FH:** Prevalence of GP recorded possible, probable and confirmed familial hypercholesterolaemia (FH), all ages.⁽²⁸⁾
- **CVDP003FH:** Prevalence of GP recorded genetically confirmed FH, all ages.⁽²⁹⁾

CVDP002FH and CVDP003FH

- Prevalence of GP recorded possible, probable and confirmed FH, all ages, was **0.18%** for data up to March 2021 showing no change from round one
- Possible, probable and confirmed FH had a higher prevalence in females (**0.21%**) when compared to males (**0.15%**)
- Prevalence across age groups showed a similar pattern to round one, increasing with age up to 60 to 79 years (**0.42%**)
- As in round one, prevalence increased slightly from most to least deprived quintiles
- The number of genetically confirmed cases of FH (all ages) recorded by GP practices was 5,499 in round two
- For data up to March 2021, the prevalence of genetically confirmed FH is higher in females (11.5 per 100,000) than males (7.8 per 100,000)





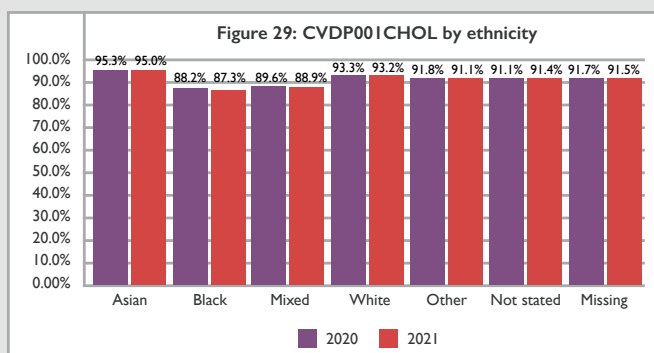
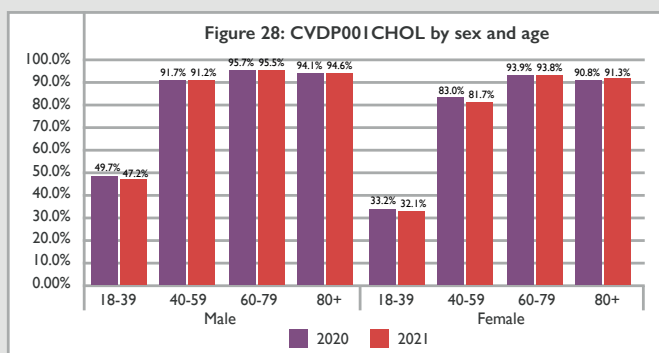
ARE PEOPLE WITH HIGH-RISK CONDITIONS/CVD BEING MANAGED TO GUIDANCE?

The following indicators are updated from round one and measure:

- **CVDP001CHOL:** The percentage of patients aged 18 and over with GP recorded CVD⁽³⁰⁾ with a previous prescription for lipid lowering therapy.⁽³¹⁾
- **CVDP002CHOL:** The percentage of patients aged 18 and over with GP recorded chronic kidney disease (CKD) with classification of categories G3a to G5 (previously stage 3 to 5), with a previous prescription for lipid lowering therapy.⁽³²⁾

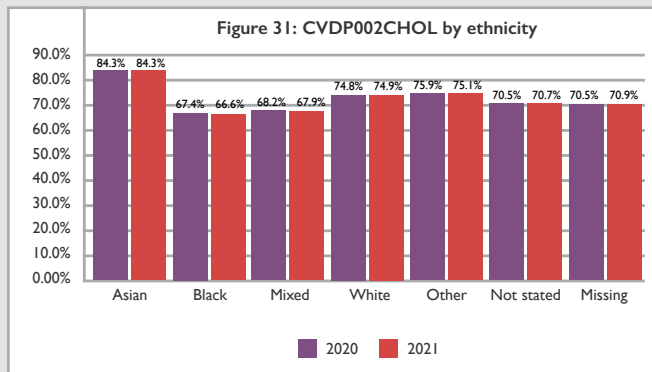
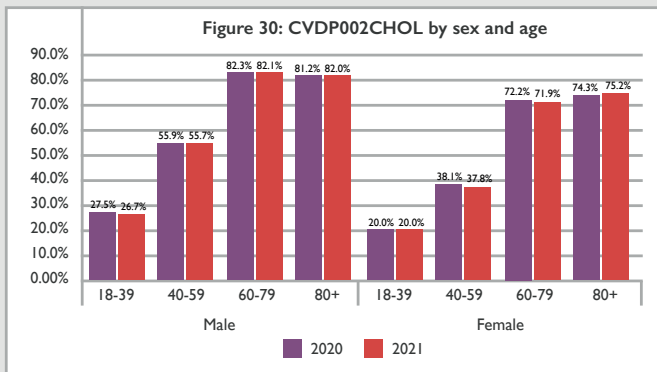
CVDP001CHOL

- The percentage of patients with CVD ever prescribed a lipid lowering therapy was **92.9%** in round two, showing no change from round one
- As in round one, males were more likely to be prescribed a lipid lowering therapy (**94.2%**) than females (**90.8%**)
- The pattern across all ethnic groups was similar to round one, with people in the Black ethnic group least likely to have a recorded prescription (**87.3%**) and the Asian ethnic group most likely (**95.0%**)
- As in round one, there was little difference across deprivation quintiles



CVDP002CHOL

- The percentage of patients with CKD categories G3a to G5 ever prescribed a lipid lowering therapy was **74.3%** in round two of the audit compared to 74.0% in round one
- As in round one, data up to March 2021 showed that females with CKD were less likely to have a recorded prescription (**70.7%**) than males (**79.3%**)
- The percentage of people with CKD prescribed a lipid lowering therapy increased with age up to **77.8%** for those aged 80+, showing a similar pattern to round one
- In the same pattern as found in round one of the audit, the Asian ethnic group was most likely to have a recorded prescription (**84.3%**) and the Black ethnic group least likely (**66.6%**)
- As in round one, prescription of lipid lowering therapy to those with CKD was lowest in the least deprived quintile (**70.8%**) and highest in the most deprived (**78.9%**)



The following indicator is new for round two and measures:

- **CVDP006CHOL:** Percentage of patients aged 18 and over, with no GP recorded CVD and a GP recorded QRISK score of 10% or more, on lipid lowering therapy.⁽³³⁾

CVDP006CHOL

- The percentage of people with no recorded CVD and a QRISK score of 10% or more on a lipid lowering therapy was **43.2%**
- Females were more likely to have a prescription of lipid lowering therapy (**44.2%**) than males (**42.4%**)
- Prescription was highest in the 80+ age group (**46.9%**)
- There was wide variation in CCG values from **35.5%** to **52.6%**
- Those in the Asian ethnic group were most likely to have a prescription (**56.1%**), with those in the White group at **42.0%**
- Prescription of lipid lowering therapy was highest in the most deprived quintile (**49.3%**) and lowest in the least deprived quintile (**39.2%**)

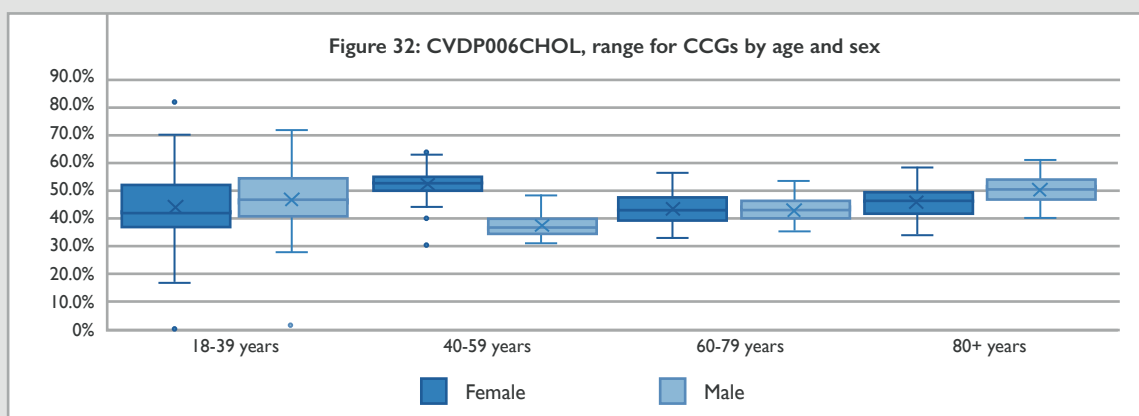
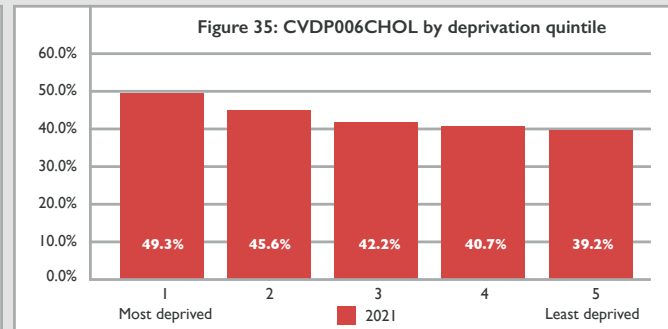
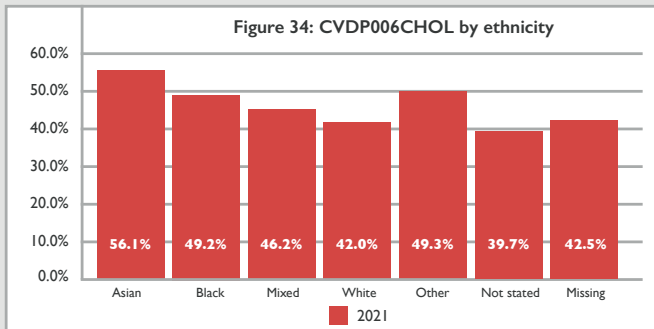


Figure 33: CVDP006CHOL, Percentage of patients aged 18 and over, with no GP recorded CVD and GP recorded QRISK score of 10% or more, on lipid lowering therapy: Results for the national (England) audit sample by age and sex

	18-39	40-59	60-79	80+ years
Female	28.7% (1,059)	54.1% (90,273)	43.1% (744,382)	45.1% (192,037)
Male	38.9% (2,720)	39.1% (250,556)	42.5% (877,323)	49.8% (123,351)



The following indicator is new for round two and measures:

- **CVDP003CHOL:** Percentage of patients aged 18 and over, with no GP recorded CVD and a GP recorded QRISK score of 20% or more, on lipid lowering therapy.⁽³⁴⁾

Note the group of patients included in the denominator for this indicator (those with a QRISK score of 20% or more) is a subset of the denominator for the previous indicator CVDP006CHOL (those with a QRISK score of 10% or more). The indicator has limitations because the denominator may be significantly understated, for example, those with a QRISK score recorded some years ago between, say, 10% and 19%, and then started on a statin, may now have a score over 20% due to ageing, but this is unlikely to be recorded. However, there is value in reviewing the position for the sub-set with a score of 20% or more, even if that sub-set is not complete.

CVDP003CHOL

- The percentage of people with no GP recorded CVD and a GP recorded QRISK score of 20% or more, on lipid lowering therapy, was **54.7%**
- There was little difference between the percentage of males (**55.0%**) and females (**54.2%**)
- Prescription was highest in the 40 to 59 age group (**64.6%**)
- There was wide variation in CCG values from **43.2%** to **65.7%**
- Those in the Asian ethnic group were most likely to have a prescription (**68.3%**), with those in the White group at **53.7%**
- Prescription of lipid lowering therapy was highest in the most deprived (**61.5%**), and lowest in the least deprived (**50.2%**), quintile

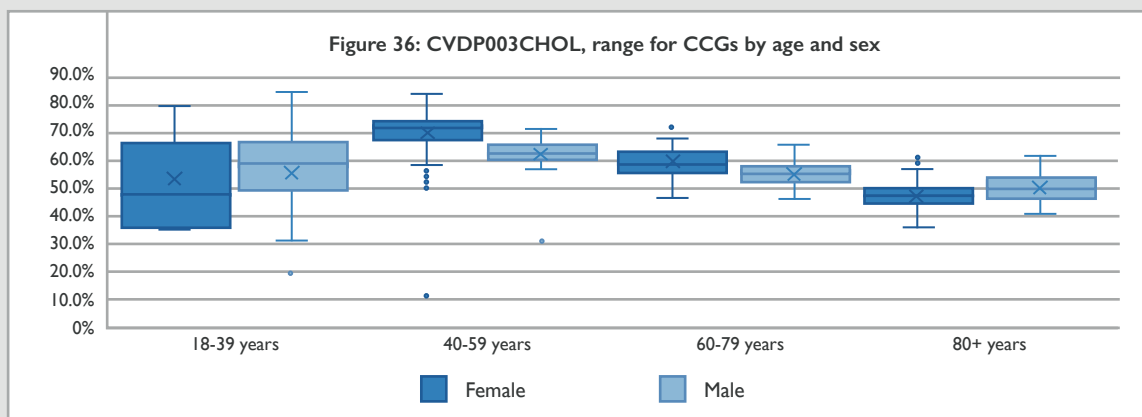
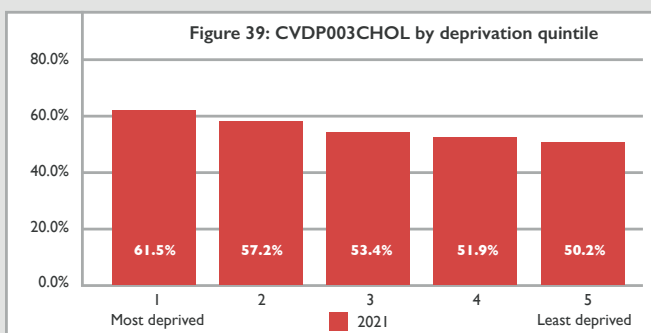
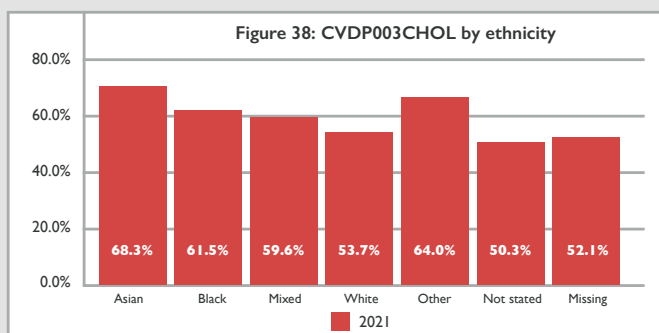


Figure 37: CVDP003CHOL, Percentage of patients aged 18 and over, with a GP recorded QRISK score of 20% or more on lipid lowering therapy: Results for the national (England) audit sample by age and sex

	18-39	40-59	60-79	80+ years
Female	15.6% (273)	70.2% (20,080)	58.7% (300,034)	47.1% (177,493)
Male	30.2% (790)	63.3% (78,694)	55.2% (566,624)	50.0% (122,317)



CHOLESTEROL: COMMENTARY

Whilst the body needs cholesterol to build healthy cells, high levels of cholesterol can increase the risk of heart disease or stroke by causing fatty deposits to build up in the arteries. High cholesterol can be reduced through healthy lifestyle choices and, where appropriate, by lipid lowering therapies.

FH is a genetic condition causing the level of low-density lipoprotein cholesterol to be very high. The condition can cause premature cardiovascular disease and death and is estimated to affect 150,000 people in England (**NHS Long Term Plan**).

Two indicators for FH prevalence are considered in the audit. CVDP002FH showed the audit sample included around 100,000 cases of GP recorded possible, probable and confirmed FH, all ages, for the period up to March 2021. The number of genetically confirmed FH cases was 5,499 people in the round two audit sample (CVDP003FH). Given that FH is a genetic condition present from birth, the increase in prevalence with age in these indicators suggests missed opportunities to identify people with this condition at an earlier age.

A new indicator is introduced in this round two of the audit, using all the patient cohorts included in CVDPREVENT (see page 25) to review the proportion of people on the GP register whose cholesterol levels are in the at-risk range for FH, but with no GP record of an FH diagnosis or investigation (CVDP004FH). The analysis found just over 73,000 people in this category. This new indicator also indicates missed opportunities to identify patients with FH and close the gap on the Long Term Plan estimate. It is recommended that patients whose cholesterol levels are in the at-risk range for FH are identified, reviewed and considered for onward referral for genetic testing.

As in round one, the proportion of those with CVD ever having been prescribed a lipid lowering therapy was high (CVDP001CHOL) (92.9%). The patterns across age, sex and ethnicity were similar to round one, with a potential area for improvement remaining females aged 40 to 59 years.

The proportion of those with CKD ever having been prescribed a lipid lowering therapy (CVDP002CHOL), at 74.3%, was very similar to the previous year's result and the profiles across age, sex and ethnicity were also unchanged. As for the CVD cohort, females, in this case in all age groups, were less likely to receive lipid lowering therapy and may therefore be a focus for improvement.

Two further indicators on the management of high cholesterol were added for round two of the audit. Just over 43% of people with no recorded CVD and a recorded QRISK score of 10% or more (CVDP006CHOL), and around half with no recorded CVD and a recorded QRISK score of 20% or more (CVDP003CHOL), were found to be on a lipid lowering therapy. It should be noted that the denominator for these indicators only includes people in CVDPREVENT cohort one (those with the six high-risk conditions) and cohort three (the case finding cohort) with a recorded QRISK score in the range specified. The proportion of the total population of people with a QRISK score recorded is not available from this data set. Additional caveats regarding CVD003CHOL are included on page 29. For both indicators, prescription of lipid lowering therapy was highest in the most deprived quintile and lowest in the least deprived, indicating an improvement opportunity for more affluent areas.

For the CVD and CKD cohorts, people in Black ethnic communities were less likely than those in other ethnic communities to be prescribed lipid lowering therapy, suggesting another area for potential improvement.

FINDINGS

CHRONIC KIDNEY DISEASE



Are people with high-risk conditions being identified?

Are people with high-risk conditions being diagnosed?



Are people with high-risk conditions/CVD being managed to guidance?



ARE PEOPLE WITH HIGH-RISK CONDITIONS BEING IDENTIFIED?

The following indicator is new for round two and measures:

- **CVDP003CKD:** Percentage of GP registered patients aged 18 and over, where the latest eGFR reading is low (<60ml/min/1.73m²) with no GP recorded CKD categories G3a to G5 (previously stage 3 to 5).⁽³⁵⁾

CVDP003CKD

- The percentage of GP registered patients with a low eGFR and no GP recorded CKD was **1.4%** (617,370 people in the audit sample)
- The percentage was higher in females (**1.5%**) than in males (**1.2%**)
- The percentage of patients increased with age to **7.6%** in those aged 80+ years
- CCG variation on the percentage of patients with a low eGFR but no recorded CKD was **0.6%** to **4.5%** (3.9 percentage points)
- After age adjustment, the percentage of patients was similar across deprivation quintiles (note that the estimates only took account of age and no other possible effects)

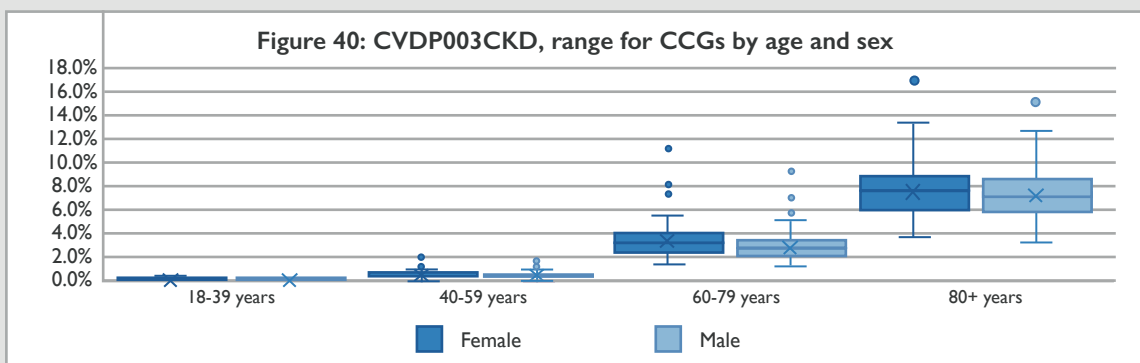
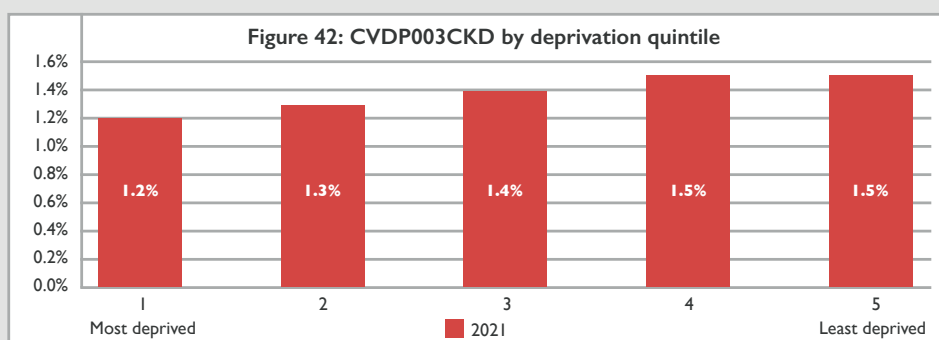


Figure 41: CVDP003CKD, Percentage of GP registered patients aged 18 and over, where the latest eGFR reading is low (<60ml/min/1.73m²) with no GP recorded CKD categories G3a to G5 (previously stage 3 to 5): Results for the national (England) audit sample by age and sex

	18-39	40-59	60-79	80+ years
Female	0.1% (4,254)	0.6% (44,514)	3.4% (179,480)	7.7% (119,809)
Male	0.1% (4,334)	0.5% (38,570)	2.9% (147,307)	7.3% (79,102)





ARE PEOPLE WITH HIGH-RISK CONDITIONS BEING DIAGNOSED?

The following indicator is new for round two and measures:

- **CVDP002CKD:** Percentage of GP registered patients aged 18 and over, with two low eGFRs (<60ml/min/1.73m²) and no GP recorded CKD categories G3a to G5 (previously stage 3 to 5).⁽³⁶⁾

CVDP002CKD

- The percentage of GP registered patients with two low eGFRs and no GP recorded CKD (G3a to G5) was **0.7%** (315,098 people in the audit sample)
- The percentage of females was higher (**0.8%**) than the percentage of males (**0.6%**)
- The percentage increased with age to **1.4%** in those aged 60 to 79 years and **5.3%** in those aged 80+
- CCG variation for the percentage of patients with two low eGFRs and no recorded CKD was **0.3%** to **1.6%** (1.3 percentage points)
- After age adjustment, the percentage was similar across deprivation quintiles (note that the estimates only took account of age and no other possible effects)

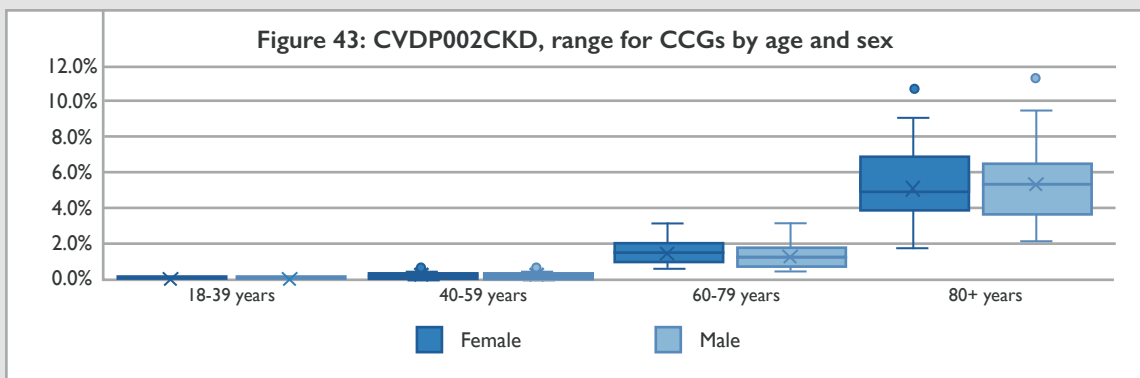
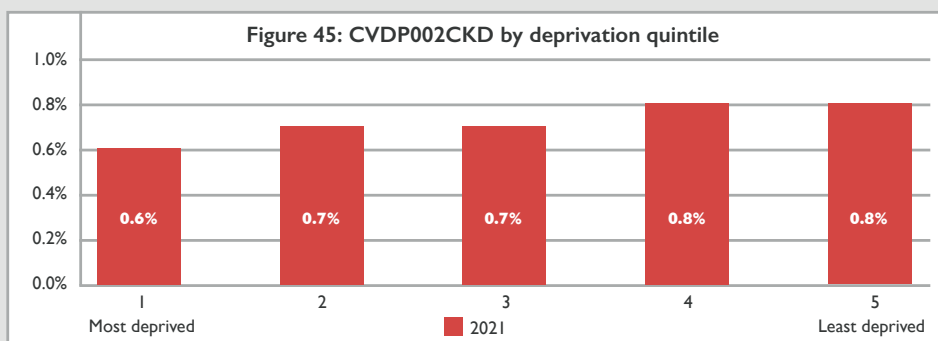


Figure 44: CVDP002CKD, Percentage of GP registered patients aged 18 and over, with two low eGFRs (<60ml/min/1.73m²) and no GP recorded CKD categories G3a to G5 (previously stage 3 to 5): Results for the national (England) audit sample by age and sex

	18-39	40-59	60-79	80+ years
Female	0.0% (1,117)	0.2% (15,250)	1.5% (80,156)	5.3% (82,631)
Male	0.0% (1,063)	0.1% (11,490)	1.3% (67,229)	5.2% (56,162)

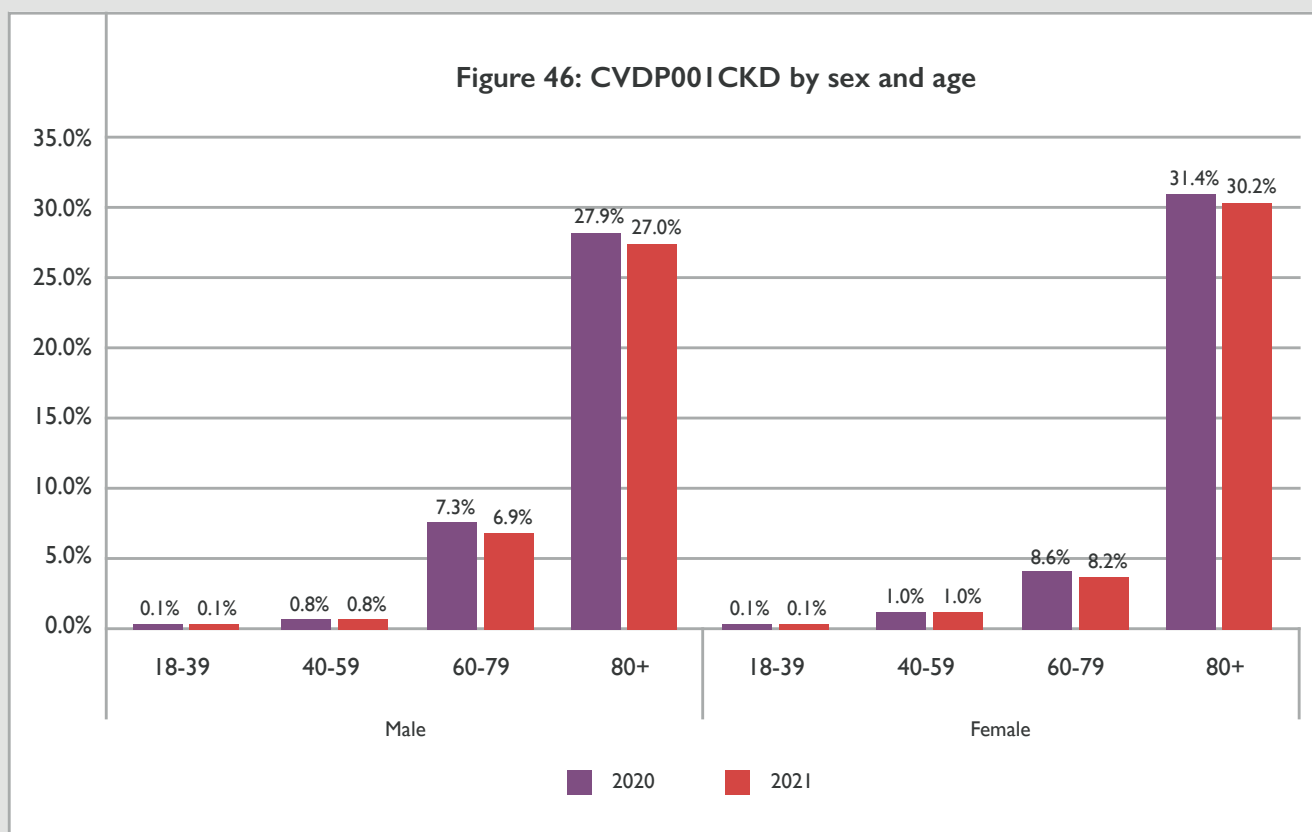


The following indicator is updated from round one and measures::

- **CVDP001CKD:** Prevalence of GP recorded CKD with classification of categories G3a to G5 (previously stage 3 to 5) in patients aged 18 and over.⁽³⁷⁾

CVDP001CKD

- The prevalence of GP recorded CKD with classification G3a to G5, for data up to March 2021, was **3.8%**, similar to that recorded in data up to March 2020 (3.9%)
- In a similar pattern to round one, prevalence was higher in females (**4.3%**) than in males (**3.2%**)
- Prevalence increased with age to **28.9%** in those aged 80+ years
- CCG variation decreased slightly in the data recorded up to March 2021 (**4.9** percentage points from highest to lowest) when compared to March 2020 (5.3 percentage points)
- In round one, after estimated age adjustment, CKD prevalence across deprivation quintiles in England was **1.2** percentage points higher in the most deprived than the least deprived quintiles. There has been negligible change in the deprivation quintile profile in the data to March 2021





ARE PEOPLE WITH HIGH-RISK CONDITIONS/CVD BEING MANAGED TO GUIDANCE?

The following indicator is new for round two and measures:

- **CVDP004CKD:** Percentage of patients aged 18 and over, with GP recorded CKD categories G3a to G5 (previously stage 3 to 5) and a record of a urine albumin:creatinine ratio (or protein:creatinine ratio) test in the preceding 12 months.⁽³⁸⁾

CVDP004CKD

- The percentage of patients with CKD and a recorded albumin:creatinine ratio (or protein:creatinine ratio) test in the last 12 months was **24.6%**
- The percentage of males with the test recorded was higher (**27.9%**) than the percentage of females (**22.3%**) with the biggest variation within the 80+ age group (**6.1** percentage points different)
- The percentage of CKD patients with the test recorded increased to **27.3%** in those aged 60 to 79 years before falling to **22.7%** in those aged 80+ years
- There was large CCG variation from **8.2%** of CKD patients to **41.7%**
- Those in the Asian ethnic group were most likely to have a albumin:creatinine or protein:creatinine test recorded (**34.9%**), with the White group at **24.6%**
- The percentage of patients with a recorded test decreased from **25.8%** in the most deprived quintile to **23.3%** in the least deprived quintile

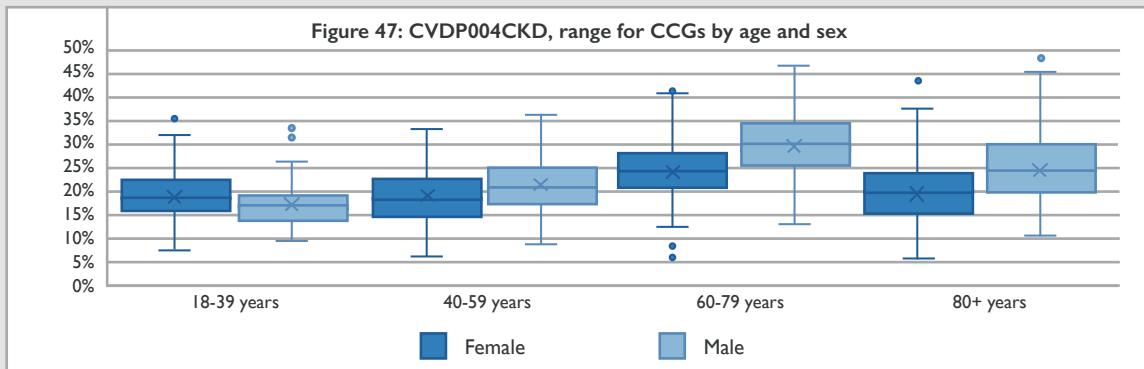
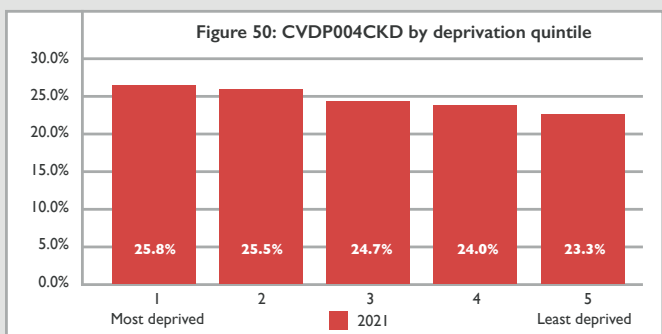
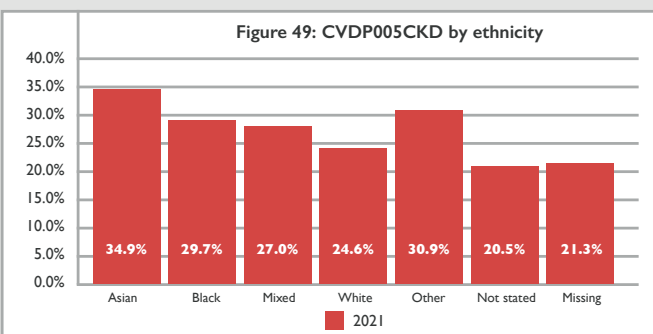


Figure 48: CVDP004CKD, Percentage of patients aged 18 and over, with GP recorded CKD categories G3a to G5 (previously stage 3 to 5) and a record of a urine albumin:creatinine ratio (or protein:creatinine ratio) test in the preceding 12 months: Results for the national (England) audit sample by age and sex

	18-39	40-59	60-79	80+ years
Female	16.4% (1,029)	19.0% (13,525)	25.0% (109,150)	20.4% (95,794)
Male	14.9% (956)	22.0% (13,221)	30.3% (105,850)	26.5% (76,902)



The following indicator is new for round two and measures:

- **CVDP005CKD:** Percentage of patients aged 18 and over, with GP recorded CKD categories G3a to G5 (previously stage 3 to 5), hypertension and proteinuria, currently being treated with renin-angiotensin system antagonists.⁽³⁹⁾

CVDP005CKD

- The percentage of CKD patients with hypertension and proteinuria who were recorded as currently being treated with renin-angiotensin system antagonists was **67.7%**
- Males were more likely to be treated with renin-angiotensin system antagonists (**69.7%**) than females (**65.2%**) and this remained true across all age groups
- The percentage treated with renin-angiotensin system antagonists increased to **72.7%** in those aged 60 to 79 years before falling to **62.4%** in those aged 80+ years
- There was variation of **20.2** percentage points between the lowest CCG (57.4%) and the highest (77.6%)
- Those in the Asian ethnic group were the most likely to be prescribed the drug (**70.4%**), with those in the Mixed ethnic group at **66.1%**
- The percentage of CKD patients treated with renin-angiotensin system antagonists increased from **66.4%** in the most deprived quintile to **69.1%** in the least deprived

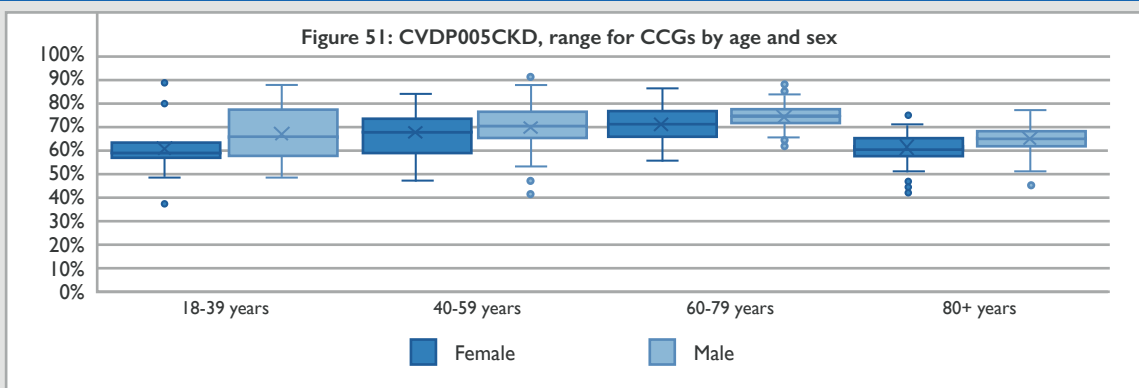
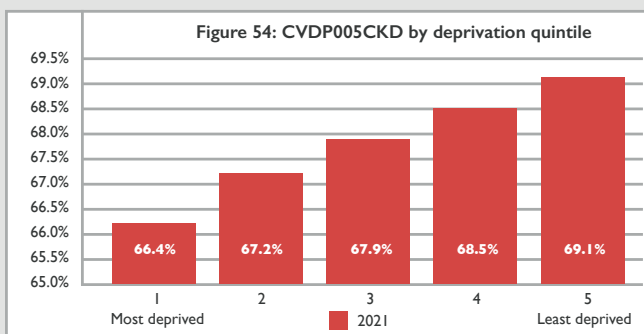
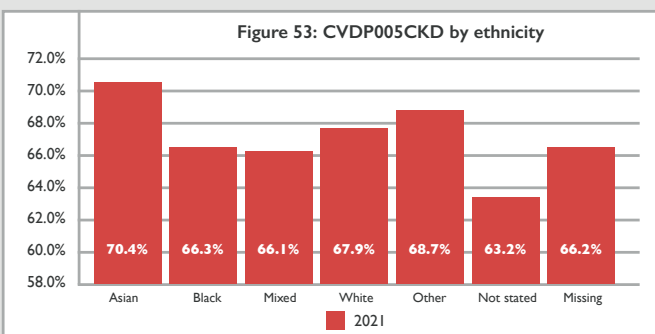


Figure 52: CVDP005CKD, Percentage of patients aged 18 and over, with GP recorded CKD categories G3a to G5 (previously stage 3 to 5), hypertension and proteinuria, currently being treated with renin-angiotensin system antagonists: Results for the national (England) audit sample by age and sex

	18-39	40-59	60-79	80+ years
Female	53.4% (402)	65.9% (3,564)	70.6% (16,105)	60.5% (15,243)
Male	60.6% (590)	69.6% (5,849)	74.1% (25,095)	64.3% (16,166)



CHRONIC KIDNEY DISEASE: COMMENTARY

Consistent with the results from QOF referenced on page 11, the prevalence of GP recorded CKD (CVDP001CKD) in the CVDPREVENT data to March 2021 (3.9%) was similar to round one (3.8%). Both sexes, and all age groups, showed similar small reductions.

Two new indicators on the identification of CKD are introduced for round two of the audit. Indicator CVDP003CKD interrogates all the patient cohorts in the CVDPREVENT dataset looking for people who have had an eGFR reading indicating high-risk of CKD stages G3a to G5 but without a CKD code (617,370 people in the audit sample). This group should receive a follow up eGFR and other appropriate investigations to confirm or exclude a diagnosis of CKD as per NICE guidelines.⁽⁴⁰⁾ The second indicator CVDP002CKD, looks for those with two eGFR readings but without a CKD code, indicating possible missed diagnosis of CKD categories G3a to G5 (315,098 people in the audit sample). People with a persistent reduction in renal function should be diagnosed with CKD.⁽⁴¹⁾ Results for both indicators suggest an opportunity to identify, and therefore treat, CKD.

Two further new indicators review the management of CKD. Indicator CVDP004CKD considers the monitoring of albumin:creatinine ratio (ACR) to detect elevated protein in the urine. A very high ACR level predicts the progression of kidney disease, indicates more severe kidney disease and is also known to be associated with diabetes. People with a CKD diagnosis should have their ACR checked annually.⁽⁴²⁾ The results for this indicator, for the period up to March 2021, showed only about a quarter of those with CKD had an ACR test in the last 12 months. It is not known how the collection of urine samples in primary care may have been affected by the COVID-19 pandemic and therefore impacted on this measure. However, there do appear to be opportunities for improvement particularly given the very wide variation in CCG values.

The final new indicator, CVDP005CKD, measures the treatment of people with CKD, hypertension and proteinuria (presence of protein in the urine) with renin-angiotensin system antagonists which inhibit the hormone system that regulates blood pressure and fluid balance. Whilst the England value for this indicator was 67.7%, the CCG variation was again wide suggesting opportunities for improvement in specific localities. These can be identified in the **CVDPREVENT Data and Improvement Tool**.

The audit results showed that indicators for the treatment and management of CKD, CVDP004CKD and CVDP005CKD, had opposite trends across deprivation quintiles. People in the most deprived quintiles were most likely to have a recorded albumin:creatinine ratio and the least deprived were the least likely. However, people in the most deprived quintiles were least likely to be treated with renin-angiotensin antagonists and the least deprived were most likely. Further research may be warranted to understand these results.

SECONDARY PREVENTION ARE PEOPLE WITH CVD BEING DIAGNOSED?

The following indicator is new for round two and measures:

- **CVDP001CVD:** Prevalence of GP recorded cardiovascular disease (wide definition)⁽⁴³⁾ in patients aged 18 and over.

CVDP001CVD

- The prevalence of GP recorded CVD was **6.1%**
- CVD prevalence was higher in males (**7.5%**), than females (**4.7%**)
- CVD prevalence rises steeply with age to **32.6%** in those aged 80 years and over
- CCG values for this indicator varied from **3.7%** to **9.7%**
- After age adjustment, CVD prevalence was **1.3** percentage points higher in the most deprived quintile in England compared to the least deprived quintile

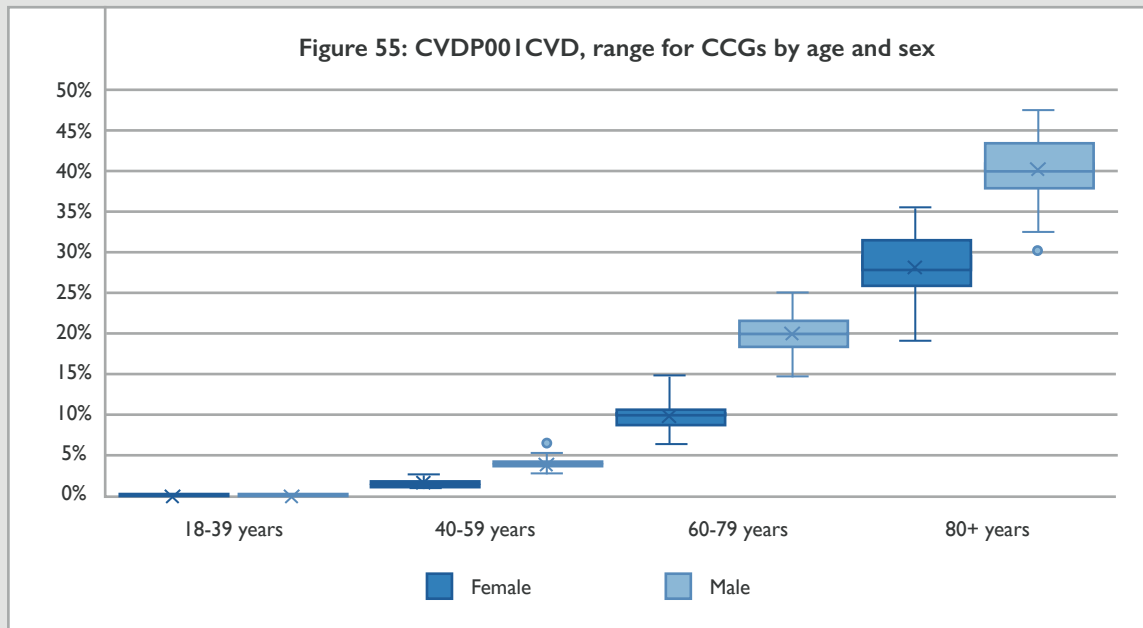


Figure 56: CVDP001CVD, Prevalence of GP recorded cardiovascular disease (wide definition) in patients aged 18 and over: Results for the national (England) audit sample by age and sex

	18-39	40-59	60-79	80+ years
Female	0.1% (12,137)	1.7% (123,988)	9.4% (504,878)	27.7% (430,183)
Male	0.2% (16,777)	3.5% (270,096)	18.9% (958,928)	39.6% (427,027)

CVD: COMMENTARY

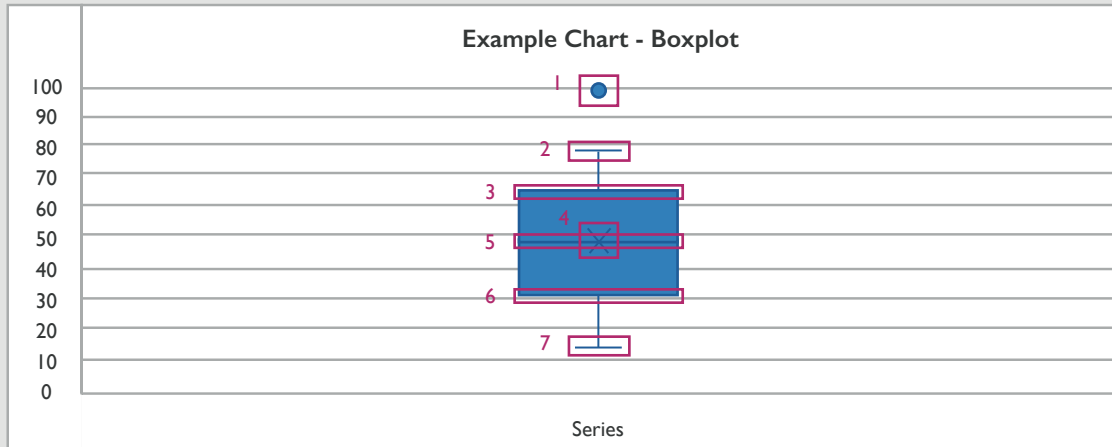
As noted in the driver diagram (figure 1), the overall aim of the CVDPREVENT audit is to support the national strategic ambition to prevent 150,000 strokes, heart attacks and cases of dementia in the next 10 years. An impact measure for the CVDPREVENT audit will be an overall reduction in the prevalence of CVD over time. The CVD prevalence indicator above has been calculated from the CVDPREVENT dataset to March 2021, hence, it should be noted the result may be impacted by COVID-19.

The indicator measures the prevalence of people with pre-existing CVD in cohort 2 of the CVDPREVENT data extract, as described on page 9 of this report.

After age adjustment, CVD prevalence was 1.3 percentage points higher in the most deprived quintile in England compared to the least deprived quintile.

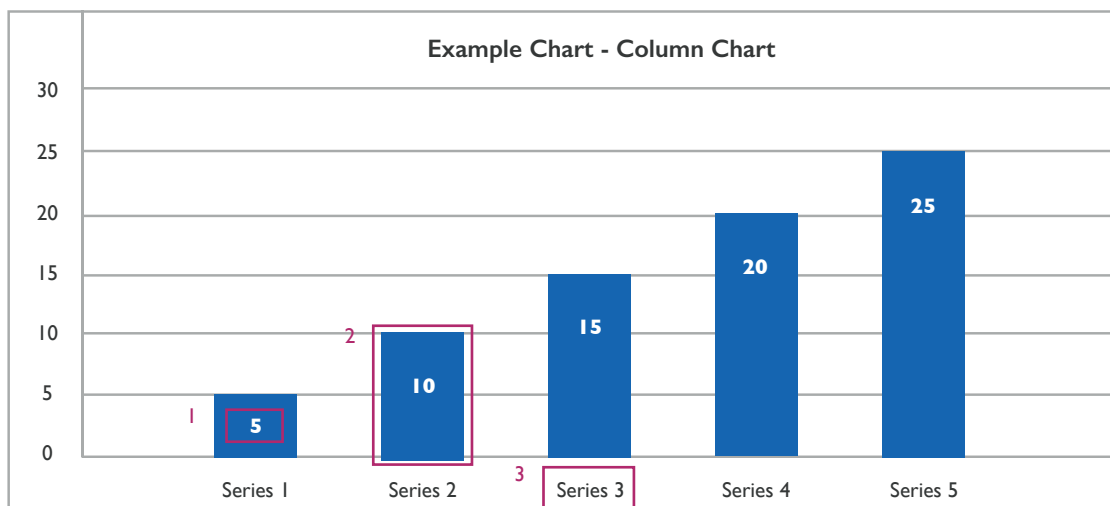
READING THIS REPORT

Throughout the report, boxplots and column charts are used to visualise the data. The boxplot displays the variation in CCG values for the indicator shown and the column charts display the England mean positions. Further detail on these charts is provided below.



1. **Outliers** - Any dots above or below the min or max lines mark the outlier positions. An outlier is a value 1.5 times the inter-quartile range larger than the third quartile or 1.5 times the inter-quartile range smaller than the first quartile.
2. **Maximum** - The top line marks the maximum value, excluding any outliers.
3. **Upper quartile** - The top of the box marks the sample's upper quartile. The upper quartile denotes the value lying between the third and fourth quartiles of the data set.
4. **Mean** - The cross marks the mean value of the data.
5. **Median** - The line within the box marks the sample's median position. The median denotes the value lying at the midpoint of a set of ordered values.
6. **Lower quartile** - The bottom of the box marks the sample's lower quartile. The lower quartile denotes the value lying between the first and second quartiles of the data set.
7. **Minimum** - The bottom line marks the minimum value, excluding any outliers.

The table under each boxplot provides the national values as percentages and counts of patients in the audit sample.



1. **Data label** - The value in each column is the England value for the series.
2. **Column** - Each column charts the England position for the series.
3. **Series name** - The label underneath the column provides the name of each series. These are commonly ethnicities or deprivation scores.

ADDITIONAL INFORMATION

GLOSSARY AND ABBREVIATIONS

Term	Definition
Abdominal aortic aneurysm (AAA)	A bulge or swelling in the aorta (the main blood vessel running from the heart to the stomach).
Albumin:creatinine ratio test	Test to measure the amount of protein called albumin in the urine compared to the quantity of waste product in the urine called creatinine.
Anticoagulation/anticoagulants	Medicines that prevent the blood from clotting as quickly or as effectively as normal.
Antihypertensive drugs	A class of drugs that are used to treat high blood pressure.
Atrial fibrillation (AF)	A heart condition that causes an irregular and often abnormally fast heart rate.
Blood pressure (BP)	The pressure of the blood in the circulatory system.
Cardiovascular disease (CVD)	A general term for conditions affecting the heart or blood vessels, usually associated with a build-up of fatty deposits inside the arteries and an increased risk of blood clots.
CHA2DS2-VASc	Clinical prediction rules for estimating the risk of stroke in people with atrial fibrillation.
Chronic kidney disease (CKD)	Chronic kidney disease (CKD) is a long-term condition where the kidneys do not work as well as they should.
Clinical Commissioning Group (CCG)	CCGs were created following the Health and Social Care Act in 2012 and commission NHS services in their local areas.
Core20PLUS5	A national NHS England and NHS Improvement approach to support the reduction of health inequalities at both national and system level. The approach defines a target population cohort – the 'Core20PLUS' – and identifies '5' focus clinical areas requiring accelerated improvement.
Coronary heart disease (CHD)	Refers to when the blood vessels supplying the heart are narrowed or blocked.
COVID-19	Coronavirus disease – an infectious disease caused by the SARS-CoV-2 virus.
Dementia	This report refers to vascular dementia – a type of dementia caused by reduced blood flow to the brain.
Deprivation quintile	Small, fixed geographic areas of the UK are measured for relative deprivation and are then classified into five quintiles based on relative disadvantage. Quintile 1 is the most deprived and quintile 5 is the least deprived.
Diabetes mellitus	Commonly known as diabetes, when a person's pancreas does not produce enough insulin to control the amount of glucose in the blood.
Estimated glomerula filtration rate test (eGFR)	Test to measure the level of kidney function and determine the stage of kidney disease.
Familial hypercholesterolaemia (FH)	An inherited, genetic condition which causes high cholesterol levels in the blood.
General Practice (GP)	The work of a doctor based in the community.
Heart failure (HF)	Refers to when the heart is unable to pump blood around the body properly.
High blood pressure	See hypertension.

ADDITIONAL INFORMATION

GLOSSARY AND ABBREVIATIONS CONTINUED...

Term	Definition
High cholesterol	When a person has too much cholesterol (a fatty substance, a type of lipid) in the blood.
Hyperlipidaemias	Refers to when a person's blood has too many lipids (or fats), such as cholesterol and triglycerides.
Hypertension (also called high blood pressure)	When the pressure in a person's blood vessels is unusually high.
Integrated Care System (ICS)	ICSs are partnerships between the organisations that meet health and care needs across an area of England. In the CVDPREVENT Data and Improvement Tool , Sustainable Transformation Partnership boundaries will be used to approximate ICS boundaries until these become formalised.
The Investment and Impact Fund (IIF)	Forms part of the Network Contract Directed Enhances Service (DES). It supports primary care networks to deliver high quality care to their populations, as well as supporting delivery of priority objectives articulated in the NHS Long Term Plan.
Lipid-lowering therapy	Used in the treatment of high levels of fats, such as cholesterol, in the blood.
Low density lipoprotein (LDL)	High levels of LDL cholesterol in the blood which increases the risk of heart disease and stroke.
Network Contract Directed Enhanced Service (DES)	The Network Contract DES places obligations on practices and commissioners and grants various entitlements to practices. It forms part of a long-term, larger package of general practice reform.
Non-diabetic hyperglycaemia (pre-diabetes)	Refers to raised blood glucose levels which are not high enough to be in the diabetic range.
Peripheral arterial disease (PAD)	The narrowing of the peripheral arteries serving the legs, arms and head.
Prevalence	A measure of the frequency of a disease or health condition in a population at a particular point in time.
Primary Care Network (PCN)	PCNs are groups of GP practices working together with community, mental health, social care, pharmacy, hospital and voluntary services in their local areas.
Proteinuria	Increased levels of protein in the urine.
Quality and Outcomes Framework (QOF)	A voluntary annual reward and incentive programme for GP practices in England and Northern Ireland.
QRISK score	An algorithm for predicting cardiovascular risk. It estimates the risk of a person developing CVD over the next 10 years.
Quality improvement (QI)	A framework to systematically improve the outcome of care delivered to patients.
Renin-angiotensin system antagonists	A drug that blocks or inhibits the renin-angiotensin system (hormone system that regulates things like blood pressure and fluid and electrolyte balance).
Stroke	A condition where the blood supply to part of the brain is cut off.
Transient ischaemic attack (TIA)	Sometimes referred to as a 'mini stroke'. Caused by a temporary disruption in the blood supply to part of the brain.

ADDITIONAL INFORMATION

END NOTES

- (1) [NHS England. Network Contract Directed Enhanced Service, Cardiovascular disease prevention and diagnosis: supplementary guidance. VI.1. Oct 2021.](#)
- (2) [NHS England. Network Contract Directed Enhanced Service, Investment and Impact Fund 2021/22: Updated Guidance. Dec 2021.](#)
- (3) NHS England and NHS Improvement. 2020/21 General Medical Services (GMS) contract Quality and Outcomes Framework (QOF), Guidance for GMS contract 2020/21 in England.
- (4) [NHS Digital. Quality and Outcomes Framework 2020/21.](#)
- (5) [NHS England. Core20PLUS5 – An approach to reducing health inequalities.](#)
- (6) [Office for Health Improvement and Disparities. Excess mortality in England.](#)
- (7) NICE. Guideline NG136. Hypertension in adults: diagnosis and management. Aug 2019.
- (8) NICE. Guideline NG203. Chronic kidney disease: assessment and management. Aug 2021.
- (9) Excludes patient opt-outs. Refer to Methodology Annex, section 2 & section 7.
- (10) Primary Care Domain GPSES, NHS Digital. Business Rules for Patient-level Data Extracts 2020/21 Cardiovascular Disease Prevention Audit. April 2020, V2.2.
- (11) For information on audit participation refer to the Methodology Annex, section 10.
- (12) For information on aggregation of data to CCG level refer to the Methodology Annex, section 9.
- (13) Ethnicity data was not available for all patients. The audit plans to work with a range of national partners such as NHS England and NHS Digital to consider means of ensuring better ethnicity coding in primary care in the longer term. Refer to Methodology Annex, section 7.
- (14) [NHS Digital. Quality and Outcomes Framework 2019/20.](#)
- (15) [NHS Digital. Quality and Outcomes Framework 2020/21.](#)
- (16) NICE. Guideline NG136. Hypertension in adults: diagnosis and management. Aug 2019.
- (17) NICE. Guideline NG196. Atrial fibrillation: diagnosis and management. June 2021.
- (18) NICE. Guideline NG196. Atrial fibrillation: diagnosis and management. June 2021.
- (19) [NHS England. Atrial fibrillation demonstrator site programme.](#)
- (20) NICE. Guideline NG136. Hypertension in adults: diagnosis and management. Aug 2019.
- (21) NICE. Guideline NG136. Hypertension in adults: diagnosis and management. Aug 2019.
- (22) NICE. Guideline NG136. Hypertension in adults: diagnosis and management. Aug 2019.
- (23) NICE. Guideline NG136. Hypertension in adults: diagnosis and management. Aug 2019.
- (24) NICE. Guideline NG136. Hypertension in adults: diagnosis and management. Aug 2019.
- (25) NICE. Guideline NG136. Hypertension in adults: diagnosis and management. Aug 2019.
- (26) Denominator: The number of patients 18 and over with GP recorded hypertension. Numerator: The number of patients 18 and over with GP recorded hypertension, and on antihypertensive medication, in whom the last systolic blood pressure reading was low (<100mmHg) who have been prescribed antihypertensive medications after the date of the low systolic BP value. The low blood pressure reading is recorded in the 12 months prior to the audit end date.
- (27) NICE. Guideline CG71. Familial hypercholesterolaemia: identification and management. Aug 2008.
- (28) NICE. Guideline CG71. Familial hypercholesterolaemia: identification and management. Aug 2008.
- (29) NICE. Guideline CG71. Familial hypercholesterolaemia: identification and management. Aug 2008.
- (30) Only includes-CHD, stroke, Transient Ischaemic Attack, Abdominal Aortic Aneurysm.
- (31) NICE. Guideline CG181. Cardiovascular disease: risk assessment and reduction, including lipid modification. July 2014.

ADDITIONAL INFORMATION

END NOTES CONTINUED...

- (32) NICE. Guideline CG181. Cardiovascular disease: risk assessment and reduction, including lipid modification. July 2014 & NICE. Guideline NG203. Chronic kidney disease: assessment and management. Aug 2021.
- (33) NICE. Guideline CG181. Cardiovascular disease: risk assessment and reduction, including lipid modification. July 2014.
- (34) NICE. Guideline CG181. Cardiovascular disease: risk assessment and reduction, including lipid modification. July 2014.
- (35) NICE. Guideline NG203. Chronic kidney disease: assessment and management. Aug 2021.
- (36) NICE. Guideline NG203. Chronic kidney disease: assessment and management. Aug 2021.
- (37) NICE. Guideline NG203. Chronic kidney disease: assessment and management. Aug 2021.
- (38) NICE. Guideline NG203. Chronic kidney disease: assessment and management. Aug 2021.
- (39) NICE. Guideline NG203. Chronic kidney disease: assessment and management. Aug 2021.
- (40) **NICE. Chronic kidney disease.**
- (41) NICE. Guideline NG203. Chronic kidney disease: assessment and management. Aug 2021.
- (42) NICE. Guideline NG203. Chronic kidney disease: assessment and management. Aug 2021.
- (43) CHD, stroke, TIA (transient ischaemic attack), PAD (peripheral arterial disease), heart failure and AAA (abdominal aortic aneurism).

ACKNOWLEDGEMENTS

We would like to thank the teams from across all three workstreams who have worked so hard towards the creation of this report.

Workstream 1 – NHS Digital

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We would also like to thank the CVDPREVENT Audit Steering Group for their continued guidance and support throughout the process.

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ACKNOWLEDGEMENTS

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Alongside the CVDPREVENT Steering Group, the audit has a [Patient Panel](#) made up of 35 patients from across all regions of England, representing a diverse range of ethnic backgrounds and covering all CVD related conditions. We would like to thank the members of our Patient Panel, who have enthusiastically given us the patient perspective which has been vital in ensuring that the audit achieves its purpose.

Finally, we would like to thank both Dr Matt Kearney, Programme Director for CVD Prevention and Proactive Care, UCL Partners (previous NHSE/I National Clinical Director) and Lorraine Oldridge at the Office for Health Improvement & Disparities (previously Public Health England) for their strategic leadership in the early development of CVDPREVENT as well as the British Heart Foundation for their funding of the initial audit feasibility report.