



Public Health
England

National Cardiovascular Health Intelligence Network:

CVD data resources: focus on atrial fibrillation (AF) and
hypertension

February 2018



Public Health
England

What is the NCVIN?



Royal College
of Physicians

Sentinel Stroke National
Audit Programme (SSNAP)



DiABETES UK



NHS
RightCare



HQIP

Healthcare Quality
Improvement Partnership



Digital





Tools and resources

Public Health England
Protecting and improving the nation's health

CVD: Primary Care Intelligence Packs

CCG: NHS Leicester City CCG

British Heart Foundation

HIGH BLOOD PRESSURE (BP) HOW CAN WE DO BETTER IN NHS DARLINGTON

Why improve our detection and treatment of high BP?

The challenges:

- 1 High BP is common, affecting around a quarter of all adults
- 2 The Global Burden of Disease Study estimated that high BP is one of the leading causes of death and disability

The opportunities:

- 1 Treatment for high BP is very effective and significantly reduces the risk of heart failure, stroke, heart failure and all cause mortality
- 2 Every 10mmHg reduction in systolic BP reduces the risk of major cardiovascular events by 20%

Effective at lowering BP

Outcomes Versus Expenditure Tool - Diabetes quadrant chart for NHS Airedale, Wharfedale and Craven

How does your CCG spend on diabetes prescribing compared to other CCGs with a HbA1c of 59mmol/mol or less for NHS Airedale, Wharfedale and Craven compared with other CCGs in the 5th most deprived CCG decile

Low expenditure, High outcomes | High expenditure, High outcomes

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Guide to tool
CCG lookup

Public Health England
Cardiovascular disease profile - Diabetes
April 2016

NHS Vale Royal CCG

Background
This chapter of the cardiovascular profiles focuses on diabetes and is produced by the National Cardiovascular Intelligence Network (NCVIN). The profiles are available for each clinical commissioning group (CCG) in England. Each profile is made up of five chapters which look at risk factors, coronary heart disease (CHD), diabetes, kidney disease and stroke. This profile compares the CCG with data for England, and where data are available, a group of similar CCGs and the Creative & Merseyside strategic clinical network (SCN).

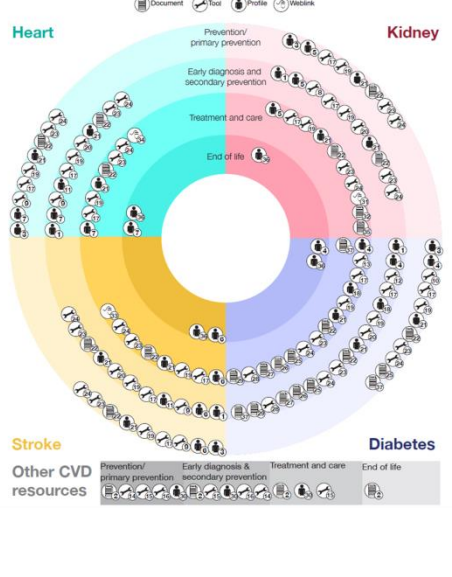
Key information
The resident population of NHS Vale Royal CCG is 102,000 and 19,300 of these people are aged 65 and over. In the CCG, 13.5% of people live in the most deprived fifth of areas in England.
In 2015 there were 5,387 people aged 17 years or older who had been diagnosed with diabetes and included in GP registers in NHS Vale Royal CCG. This equals 6.5% of this age group. In England, the diagnosed diabetes prevalence is 6.4%.
At GP practice level in NHS Vale Royal CCG, the percentage of patients receiving all eight care processes ranged from 48.2% to 58.8%. For three treatment targets, the percentage ranged from 48.6% to 51.1%.
People with diabetes are at a higher risk of having a heart attack or stroke. In this area, people with diabetes are 107.6% more likely than people without diabetes to have a heart attack. This is lower than the figure for England which is 108.8%. People with diabetes are also 99.9% more likely to have a stroke. This is higher than the figure for England where there is a 81.3% greater risk.

Key facts	Local	Comparator CCGs	SCN	England
Diabetes prevalence in adults (per cent)	6.5	6.4	6.5	6.4
People with diabetes whose last HbA1c was 59mmol/mol or less (per cent)	82.7	86.6	64.2	80.4
People with diabetes whose last blood pressure was 140/90 or less (per cent)	77.7	71.5	74.3	71.2
People with diabetes whose last cholesterol was 5mmol/L or less (per cent)	72.7	78.9	72.4	78.8
Additional risk of mortality to people with diabetes (per cent)	43.9	-	-	39.2

Produced by the National Cardiovascular Intelligence Network (NCVIN)
PHE publications gateway | © Crown copyright 2016 version 1

NCVIN navigation tool

- 1 Hypertension Profiles
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AF: How can we do better?

Detection of AF in England
1.4 million people in England are estimated to have atrial fibrillation (AF), 0.4% of the adult population.

Undiagnosed AF in England
There is significant variation between practices in the proportion of their patients with AF who remain undiagnosed.

Number of AF patients anticoagulated in England
Historically 31% of eligible patients do not receive anticoagulation. This includes excluded patients, but some practices exceed for fewer than others.

Outcome after discharge in people NOT anticoagulated before their stroke in England

Stroke with AF not on anticoagulation

Stroke with AF on anticoagulation



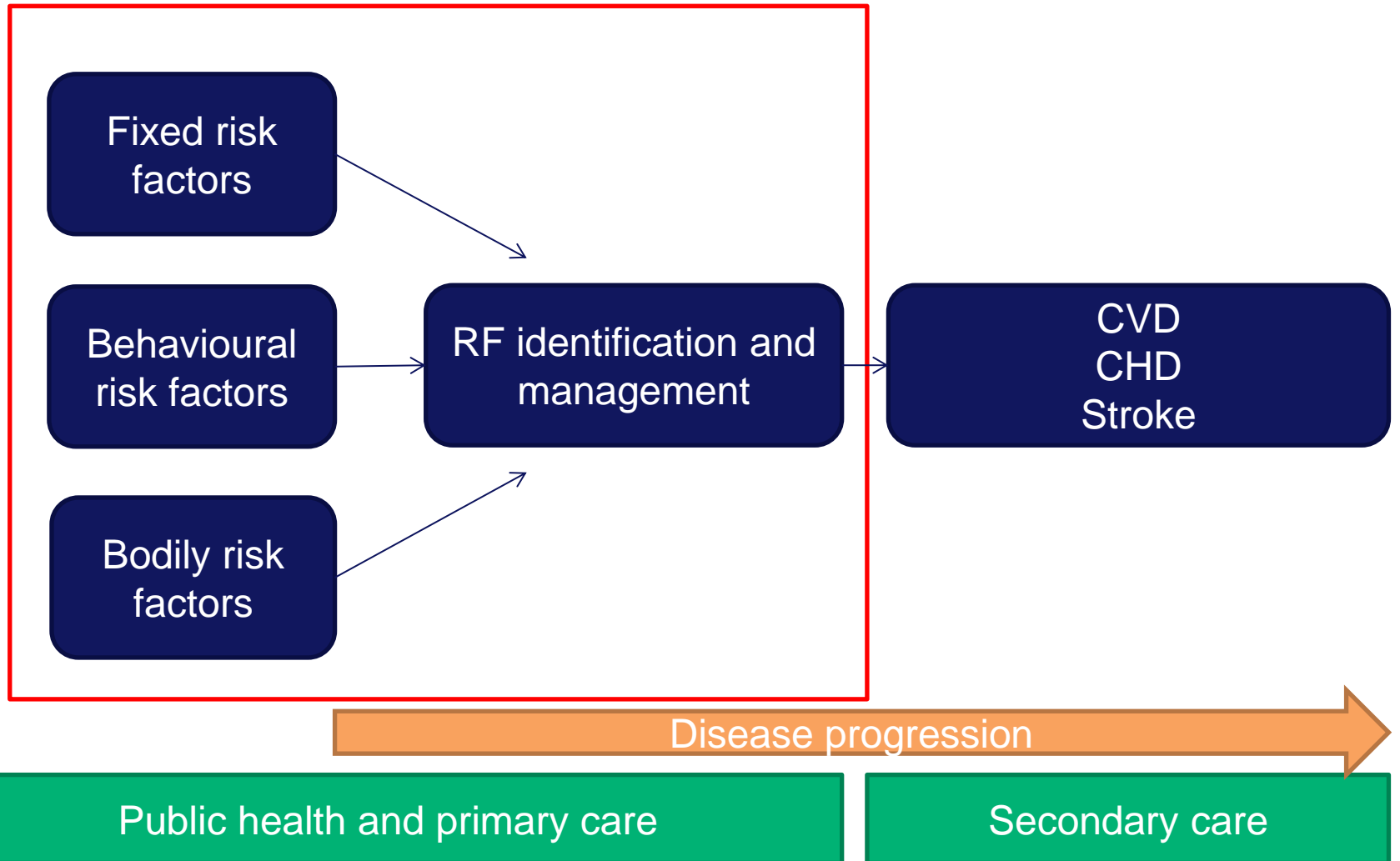
Hypertension and Atrial Fibrillation

What resources can help to answer these questions?

- How many people have hypertension and AF?
- How well are they managed?
- What is the impact of these conditions?



CVD pathway





How many people have hypertension and AF?

Number of people diagnosed with AF and Hypertension East Mids

Register	Year							2016/17 prev (%)	Change number
	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17		
Hypertension	631,774	644,363	652,658	662,372	669,727	681,216	693,869	14.6	62,095
Atrial Fibrillation	66,132	69,800	72,388	75,926	79,405	84,245	92,191	1.9	26,059

Source: NHS Digital Quality and Outcomes framework

PHE Disease and Risk Factor Prevalence:

<https://fingertips.phe.org.uk/profile/prevalence>





Is everyone with hypertension and AF diagnosed?



300 people diagnosed and
registered on GP list
(OBSERVED)



500 people estimated
to have the condition
(EXPECTED)

Observed to expected ratio = $3/5 = 0.6 = 60\%$

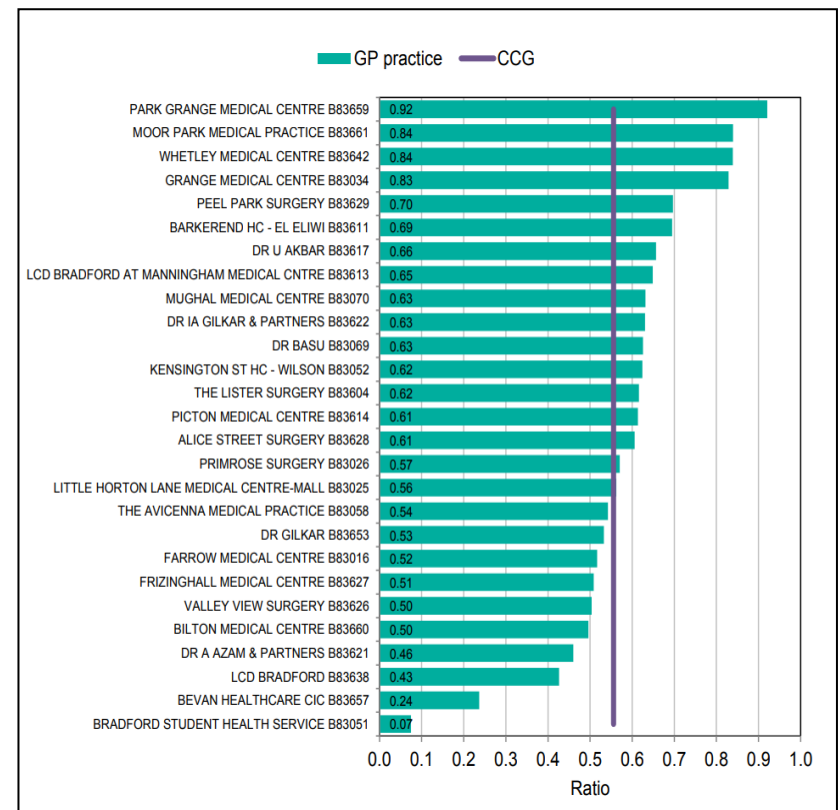
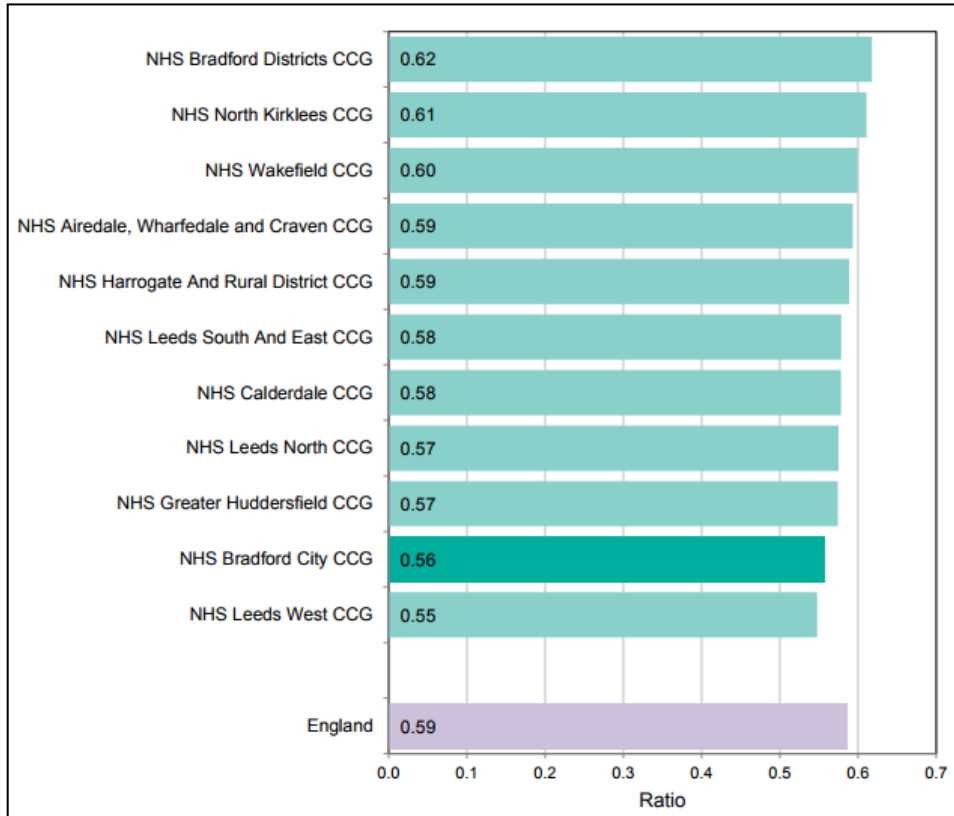
NCVIN have developed several prevalence models with other partners

<https://www.gov.uk/guidance/cardiovascular-disease-data-and-analysis-a-guide-for-health-professionals#estimates-of-cvd-prevalence>



How many people have a condition but are not yet diagnosed

Hypertension observed (diagnosed) to expected ratios at CCG and practice level



CVD primary care intelligence packs

<https://www.gov.uk/government/collections/cardiovascular-disease-primary-care-intelligence-packs>

Estimates of CVD prevalence

The CVD estimates can help healthcare professionals understand the prevalence of cardiovascular conditions among certain populations (for example, by sex or age) in their area. Some of the datasets also show the variation in the condition across the local area and between CCGs.

Use the data to estimate how many people in your local area have a particular CVD diagnosis and how many people may be undiagnosed. This can help with planning services and improving outcomes for patients.

The data used in these estimates are from various sources. The estimates use data from local authorities, CCGs and GP practices.

[Atrial fibrillation prevalence estimates for local populations](#)

[Chronic kidney disease estimates for local and regional populations](#)

[Diabetes prevalence estimates for local populations](#)

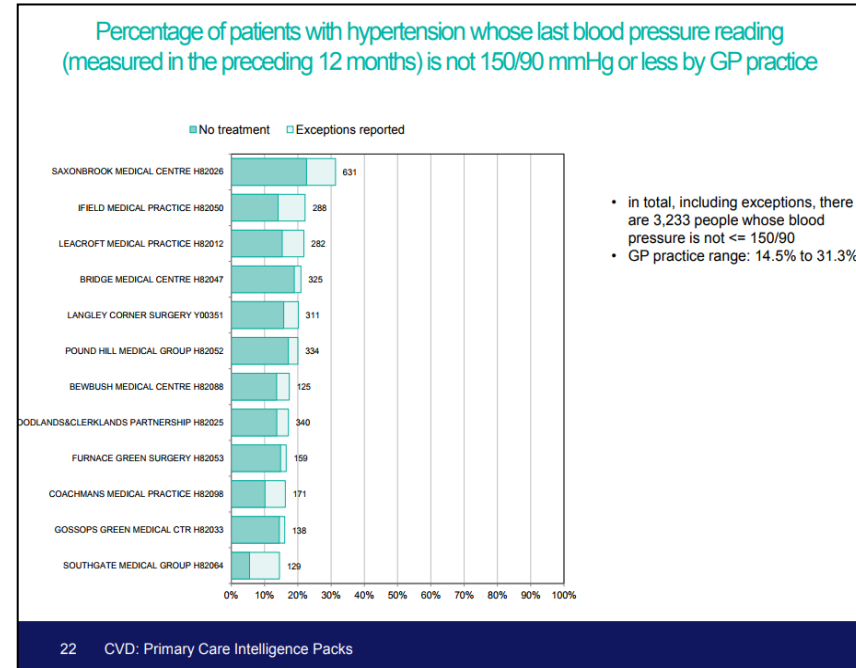
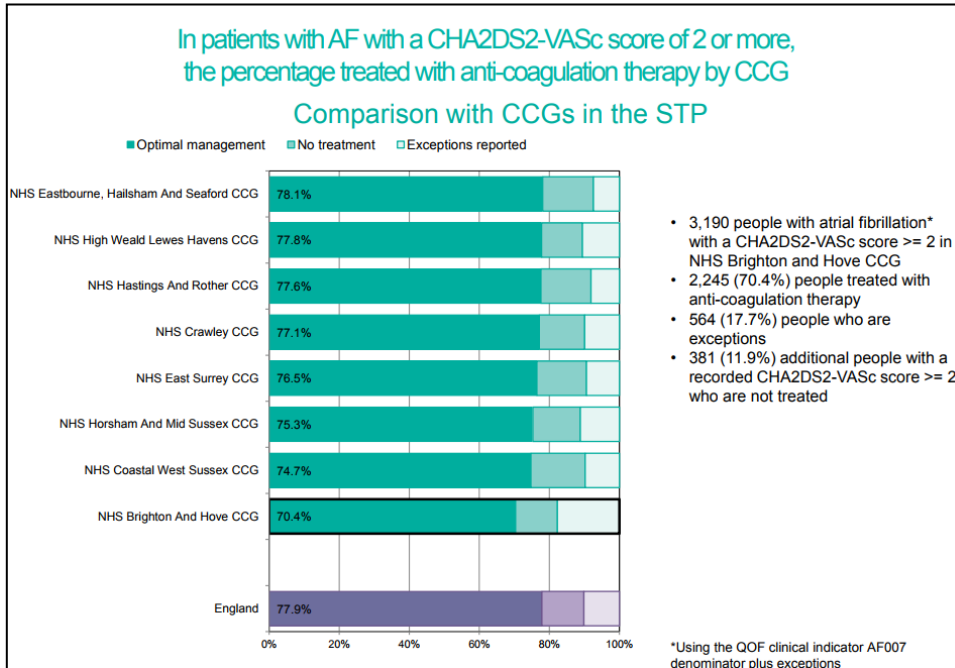
[Hypertension prevalence estimates for local populations](#)

[Non-diabetic hyperglycaemia prevalence in England](#)



How well are AF and hypertension managed? Management in primary care

CVD primary care intelligence packs



CVD primary care intelligence packs

<https://www.gov.uk/government/collections/cardiovascular-disease-primary-care-intelligence-packs>



How well are AF and hypertension managed? Management in primary care

National General Practice Profiles

Introduction

These profiles are designed to support GPs, clinical commissioning groups (CCGs) and local authorities to ensure that they are providing and commissioning effective and appropriate healthcare services for their local population.

In addition to viewing individual practice profiles, you can view summary profiles for CCGs. Each practice can be compared with the CCG and England, and also with the practice deprivation decile.

Using a variety of graphical displays such as spine charts and population pyramids, the tool presents a range of practice-level indicators drawn from the latest available data, including:

- Local demography
- Quality and Outcomes Framework domains
- Cancer Services
- Child health
- Antibiotic prescribing
- Patient satisfaction

The profiles do not provide an exhaustive list of primary care indicators, but they do allow a consistent approach to comparing and benchmarking across England.

For more information consult the [User guide](#) and [FAQs](#).

Profiles are generated for all practices in QOF 2015/16 with a list size of at least 800 patients. For details see the [list of included practices](#).

START
Go to the data

Recent updates

December 2016

- QOF updated to 2015/16
- Populations updated to April 2016 (age bands up to 95+)
- GP survey data updated to 2015/16
- New Cancer indicators added
- Life expectancy updated to 2010-14

April 2016

- New antimicrobial resistance (AMR) domain added
- Number of nursing home places updated

December 2015

- New Cancer domain
- IMD 2015 practice scores
- QOF updated to 2014/15
- Populations updated to April 2015 (age bands up to 95+)
- GP survey data updated to 2014/15

January 2015

- NHS comparators up to 12/13
- Updates to the Child health domain

National General Practice Profiles

Domain: CVD - Heart failure and atrial fibrillation

Area type: GP

Area: K83059 - Dr Khalid & Part

Areas grouped by: CCGs (since 4/2017)

Benchmark: England

Compared with benchmark: Lower Similar Higher Not compared

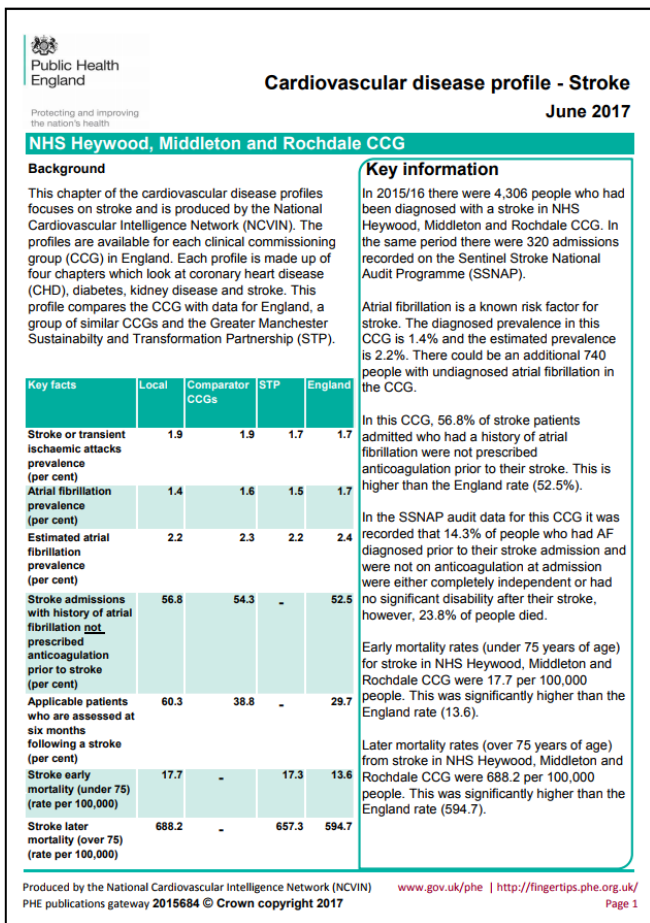
Export table as image

Indicator	Period	England	NHS Corby CCG	K83059 - Dr Khalid & Partners	K83814 - Dr Kumar & Partner S...	K83807 - Dr Sumira	K83822 - Great Oakley Medical...	K83802 - Lakeside Healthcare
Heart Failure: QOF prevalence (all ages)	2016/17	0.8	1.0	1.1	1.5	0.9	0.8	1.0
Heart failure w LVD: QOF prevalence (all ages)	2016/17	0.3	0.3	0.4	0.2	0.6	0.2	0.4
Exception rate for heart failure indicators	2016/17	9.1	7.6	6.3	8.2	3.4	8.6	8.4
Atrial fibrillation: QOF prevalence	2016/17	1.8	1.8	1.3	2.0	2.8	1.0	1.7
Exception rate for atrial fibrillation indicators (2015/16 indicators)	2016/17	8.4	4.9	4.7	1.8	0.0	2.7	8.1
Estimated prevalence of atrial fibrillation	2015/16	2.4	2.0	1.8	2.4	2.9	1.4	2.1
Estimated percentage of detected Atrial Fibrillation	2013/14	65.2	65.3	62.9	73.9	71.2	67.7	64.0
HF002: Diagnosis conf. by ECG/specialist assessm. (den. incl. exc.)	2016/17	91.1	95.5	97.8	85.3	90.9	95.1	98.9
HF003: Heart failure w LVD: treated w ACE-I or ARB (den. incl. exc.)	2016/17	83.9	87.5	88.1	100	100	84.0	86.5
HF004: Heart failure w LVD: treatment w ACE inh. or ARB, and beta-blocker (den.incl.exc.)	2016/17	78.8	80.0	81.1	83.8	88.9	86.7	82.3
AF002: stroke risk: assessed with CHADS2 (last 12 mths)	2013/14	95.0	98.1	95.5	95.2	96.9	91.2	98.8

PHE General practice profiles:
<https://fingertips.phe.org.uk/profile/general-practice>



The complications of AF and hypertension - CVD profiles



- CVD profiles
- Diabetes, kidney disease, CHD, stroke
- One for each CCG
- Covers the whole pathway of care
 - Diagnosis
 - Primary care management
 - Secondary care/complications
- Interactive and report based versions

<https://fingertips.phe.org.uk/profile/cardiovascular>



What is the impact of better diagnosis? Health checks STP fact sheets

Combating CVD through the NHS Health Check programme

Birmingham and Solihull



What the evidence tells us

One in ten people continue to live with CVD¹. It is the second biggest cause of death in England with 200 people dying each day from a heart attack or stroke.² Every day there are over 1200 admissions to accident and emergency because of heart problems³ and 290 as a result of cerebrovascular problems.



What is the NHS Health Check programme?

The NHS Health Check is a national programme that systematically measures a range of risk factors driving the burden of CVD and other non-communicable diseases such as dementia, respiratory disease and some cancers.





Improving CVD outcomes

National research shows that the programme is cost effective, can prevent illness and has the potential to save 250 – 500 lives each year across England.^{4,5} It also shows that there is equitable take up of checks among high CVD risk groups and prioritising these groups is cost effective.⁶

1. Current activity, 2013 – 2018^{7,*}

Number of people invited for an NHS Health Check	304,156
Number of people who have had an NHS Health Check	154,599
Number of people still to benefit from an NHS Health Check	169,734

2. Disease detection, 2013 – 2018^{8,*,**}

 Estimated number of people that could be diagnosed with hypertension following a NHS Health Check	8,400
 Estimated number of people that could be identified with a CVD risk score >20% following an NHS Health Check	42,000

3. Medication, 2013 – 2018^{8,*,**}

Estimated number of people at high risk of CVD that could be prescribed a statin following an NHS Health Check	8,110
Estimated number of people at high risk of CVD that could be prescribed an antihypertensive following an NHS Health Check	3,700

Footnotes:
¹ www.bhf.org.uk/healthcare-professionals/tp-how-can-we-do-better
² Office for national statistics. Death registrations summary tables – England and Wales, 2015
³ NHS Digital. Accident and emergency attendances in England 2014-15
⁴ <http://dx.doi.org/10.1136/bmjopen-2015-008840>
⁵ <http://dx.doi.org/10.1016/j.jgim.2015.05.22>

⁶ For more information on activity go to www.healthcheck.nhs.uk
⁷ Disease rates calculated using the findings from www.healthcheck.nhs.uk/document.php?ow=1251
⁸ Medication rates calculated using the findings from www.healthcheck.nhs.uk/document.php?ow=1251
^{*} Data in tables 1, 2 and 3 is based on the sum of local authority activity for the STP footprint
^{**} Data in tables 2 and 3 is calculated using a take up rate of 75%

http://www.healthcheck.nhs.uk/commissioners_and_providers/data/size_of_the_prize_reducing_heart_attacks_and_strokes/



What is the impact of better management? the size of the prize

The Size of the Prize in Cardiovascular Disease (CVD) Prevention

Cheshire and Merseyside



1. The diagnosis and treatment gap, 2015/16

	Estimated adult population with hypertension	647,700
	Estimated adult population with undiagnosed hypertension	261,600
	GP registered hypertensives not treated to 150/90 mmHg target	76,100
	GP registered population with Atrial Fibrillation (AF)	52,800
	Estimated GP registered population with undiagnosed AF	14,000
	GP registered high risk AF patients (CHA2DS2VASc >=2) not anticoagulated	9,500
	Estimated adult population 30 to 85 years with 10 year CVD risk >20%	180,400
	Estimated percentage of people with CVD risk >=20% treated with statins	49%

2. The burden: first ever CVD events, 2015/16

Coronary Heart Disease	6,900
Stroke	3,250
Heart Failure	2,350

3. The opportunity: potential events averted and savings over 3 years by optimising treatment in AF and hypertension, 2015/16

Optimal anti-hypertensive treatment of diagnosed hypertensives averts within 3 years:	460 heart attacks	Up to £3.30 million saved ²
	680 strokes	Up to £9.60 million saved ¹
Optimally treating high risk AF patients averts within 3 years:	760 strokes	Up to £12.70 million saved ¹



What the evidence tells us

- Reducing blood pressure in all adults with diagnosed and undiagnosed hypertension by 5 mmHg: **reduces risk of CVD events by 10%**
- Statin therapy to reduce cholesterol by 1 mmol in people with a 10 year risk of CVD risk greater than 10%: **reduces risk of CVD events by 20-24%**
- Anti-coagulation of high risk AF patients: **averts one stroke in every 25 treated**



CVD: high risk conditions

High risk conditions like high blood pressure, atrial fibrillation and high cholesterol are major causes of heart attack and stroke (CVD events). In the high risk conditions preventive treatment is very effective, but late diagnosis and under-treatment is common.



Improving outcomes in CVD: case study

In Bradford Districts Clinical Commissioning Group: Over 24 months, more than 21,000 people had an intervention in lipid management, anti-coagulation or antihypertensive treatment to improve their health. Resulting in 137 fewer heart attacks and 74 fewer strokes compared to baseline.

Footnotes:

¹ Royal College of Physicians (2016). Sentinel Stroke National Audit Programme. Cost and Cost-effectiveness analysis. Technical report
² Kerr, M (2012). Chronic Kidney disease in England: The human and financial cost
 Potential events calculated with NNT (bnnf.com). For blood pressure, anti-hypertensive medicines for five years to prevent death, heart attacks, and strokes: 1 in 100 for heart attack, 1 in 67 for stroke. For AF, warfarin over 1.5 years: 1 in 25 for stroke. Numbers may be lower, as some patients may be on prior treatment.

References:

Hypertension and AF populations and treatment estimates: QOF 2015/16.
 CVD high risk estimate numbers: <http://www.bmj.com/content/344/bmj.e4181>
 CVD high risk statin treatment: <http://journals.plos.org/plosmedicine/article/doi/10.1371/journal.pmed.1002169>

http://www.healthcheck.nhs.uk/commissioners_and_providers/data/size_of_the_prize_reducing_heart_attacks_and_strokes/



Making the case for improved primary care management

Blood pressure and atrial fibrillation how can we do better?

There is an opportunity to improve detection of high BP in NHS Blackburn with Darwen CCG

There are many people in your CCG who have undiagnosed high BP

There is potential for all practices in your CCG to improve detection of high BP

There is an opportunity to improve management of high BP in NHS Blackburn with Darwen CCG

There are many people in your CCG who are estimated to have poorly controlled high BP

There is potential for all practices in your CCG to improve BP control

Improving BP control leads to better outcomes for patients and populations

Variation in BP control in people with comorbidities shows scope for improving outcomes

Estimated population benefits if average BP in people with high BP is reduced by 10 mmHg*

*Established at 2016. [http://dx.doi.org/10.1016/S0140-6736\(16\)01225-8](http://dx.doi.org/10.1016/S0140-6736(16)01225-8)

AF: How can we do better?

NHS LAMBETH CCG

Key Messages on Case Finding

Why do we need to improve our case finding in atrial fibrillation (AF)?

1. The risk of stroke increases five-fold for people with AF.
2. AF strokes are often more severe with higher mortality and greater disability.
3. AF is a major risk factor for stroke and contributes to one in five strokes.
4. **BUT** - almost a third of people with AF are undiagnosed. They are therefore untreated and at a high risk of premature death and disability.

What do we need to know?

1. People with AF are at an increased risk of stroke irrespective of symptoms.
2. People with AF are at an increased risk of stroke even after treatment such as cardioversion or ablation.
3. All people with AF, paroxysmal AF and atrial flutter are at increased risk of stroke and should be assessed for anticoagulation.
4. For most people with AF the benefits of anticoagulation significantly outweigh the risks of bleeding.

What can practices do to find and treat the missing high risk patients?

1. Compare recorded prevalence with the expected prevalence of AF for your practice.
2. Use tools such as GRASP-AF to search for codes that suggest probable or possible uncodified AF.
3. Do opportunistic pulse checking in settings where AF more likely to be detected e.g. long term condition clinics, flu clinics and blood pressure checks.
 - AF incidence increases with age and is significantly higher in people over 65 - they are often asymptomatic.
 - AF is more likely in people with existing cardiovascular disease including hypertension, diabetes, chronic kidney disease (CKD) and peripheral vascular disease and previous stroke.
 - AF is more likely in people with chronic obstructive pulmonary disease (COPD).
4. Ensure everyone found to have an irregular pulse is offered a 12-lead ECG to determine the rhythm.

What can CCGs do to find the missing high risk patients?

1. Compare recorded and expected prevalence across the CCG to estimate the total number of people with undiagnosed AF.
2. Examine the level of variation in detection rates between practices.
3. Explore and share approaches being used by practices that are more successful in detecting AF.
4. Support practices to audit and improve case finding using local solutions as developed in Bradford for example, or off the shelf tools such as GRASP-AF.
5. Add pulse checking to local enhanced service specifications where appropriate.
6. Ensure all eligible patients receive the NHS Health Check which will systematically detect abnormal pulse rhythms as part of blood pressure measurement.
7. Ensure local practices have access to quality assured ECG interpretation.
8. Explore potential for community pharmacists to offer pulse checking with diagnostic technologies such as NICE approved WatchBP Home A.
9. Ensure appropriate training in pulse checking for health care assistants.

Glossary

QOF: Quality and Outcomes Framework
 NCVIN: National Cardiovascular Intelligence Network
 SSNAP: Sentinel Stroke National Audit Programme
 GRASP-AF: Guidance on Risk Assessment and Stroke prevention for Atrial Fibrillation
 NOAC: Novel (New) Oral Anticoagulant
 ECG: Electrocardiogram
 CCG: Clinical Commissioning Group

Stroke Association partnership with:



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Where can you find NCVIN tools?

NCVIN resource pages

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Home

Guidance

Cardiovascular disease data and analysis: a guide for health professionals

From: Public Health England
Published: 3 May 2017
Last updated: 4 September 2017, see all updates

Explains how commissioners and health professionals can use data and analysis for decisions about cardiovascular services and interventions.

Contents

- CVD primary care intelligence packs
- Summary profiles of cardiovascular data
- Estimates of CVD prevalence
- Spending on care versus patient outcomes
- Other resources
- Further information

This guidance is for commissioners, public health directors and others involved in the local planning and provision of services and interventions that support people with cardiovascular disease (CVD) conditions.

Public Health England (PHE) collates and analyses available CVD data and produces intelligence resources to help with improving services and outcomes. This guidance supports health professionals with using these resources to make or influence decisions about local services.

Cardiovascular disease includes:

<https://www.gov.uk/guidance/cardiovascular-disease-data-and-analysis-a-guide-for-health-professionals>

PHE profiles webpages

Public Health Profiles

Highlighted Profiles

- Child and Maternal Health Health Profiles
- Longer Lives
- Mental Health Dementia and Neurology
- National General Practice Profiles
- Public Health Outcomes Framework

National Public Health Profiles

- Adult Social Care
- AMR local indicators
- Atlas of Variation
- Cancer Services
- Cardiovascular Disease
- Child and Maternal Health
- Diabetes
- Disease and risk factor prevalence
- End of Life Care Profiles
- Health assets profile
- Health Profiles
- Health Protection
- Inhale - Interactive Health Atlas of Lung conditions in England
- Learning Disability Profiles
- Liver Disease Profiles
- Local Alcohol Profiles for England
- Local Tobacco Control Profiles
- Longer Lives
- Marmot Indicators
- Mental Health Dementia and Neurology
- National General Practice Profiles
- NCMP Local Authority Profile
- NHS Health Check
- Older People's Health and Wellbeing
- Oral Health Profile
- Peer benchmarking tool
- Physical Activity
- Public Health Outcomes Framework
- Segment Tool
- Sexual and Reproductive Health Profiles
- TB Strategy Monitoring Indicators
- Technical Guidance
- Wider Determinants of Health

<https://fingertips.phe.org.uk/>



Any questions?

To subscribe to the NCVIN quarterly newsletter or to contact the NCVIN team please email: ncvin@phe.gov.uk

NCVIN tools and resources can be accessed on the links below:

- **NCVIN resource page** <https://www.gov.uk/guidance/cardiovascular-disease-data-and-analysis-a-guide-for-health-professionals>
- **PHE profiles pages** <https://fingertips.phe.org.uk>
- **NCVIN CVD primary care intelligence packs**
<https://www.gov.uk/government/collections/cardiovascular-disease-primary-care-intelligence-packs#midlands-and-east-of-england-commissioning-region>
- **NCVIN CVD profiles** <https://fingertips.phe.org.uk/profile/cardiovascular>