Cardiovascular risk factors and prevention

Southwark's Joint Strategic Needs Assessment

People & Health Intelligence Section

Southwark Public Health

May 2018

GATEWAY INFORMATION

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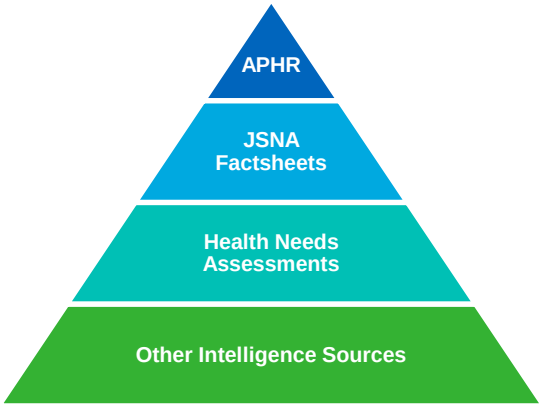
This JSNA factsheet forms part of Southwark's Joint Strategic Needs Assessment process

BACKGROUND

The Joint Strategic Needs Assessment (JSNA) is the ongoing process through which we seek to identify the current and future health and wellbeing needs of our local population.

- The purpose of the JSNA is to inform and underpin the Joint Health and Wellbeing Strategy and other local plans that seek to improve the health of our residents.
- The JSNA is built from a range of resources that contribute to our understanding of need. In Southwark we have structured these resources around 4 tiers:



Tier I: The Annual Public Health Report (APHR) provides an overview of health and wellbeing in the borough.

Tier II: JSNA Factsheets provide a short overview of health issues in the borough.

Tier III: Health Needs Assessments provide an in-depth review of specific issues.

Tier IV: Other sources of intelligence include Local Health Profiles and national Outcome Frameworks.

- This document forms part of those resources.
- All our resources are available via: www.southwark.gov.uk/publichealth

This JSNA factsheet summarises cardiovascular disease risk factors in Southwark

AIMS AND OBJECTIVES

This factsheet will form part of the Joint Strategic Needs Assessment (JSNA) for Southwark; it aims to inform and support the primary prevention agenda in Southwark through better understanding of the prevalence and distribution of the main CVD risk factors.

The information provided in this needs assessment factsheet will be an important first step to drive better outcomes for CVD at a local level. Key objectives of this factsheet are to:

- Improve our understanding of the level of local need through focusing on the prevalence of four specific CVD risk factors:
  - High blood pressure (hypertension)
  - Atrial fibrillation
  - Diabetes
  - High Cholesterol
- Inform and support health and social care professionals to make the right decisions around prevention, commissioning and enable the provision of quality services locally.

This slide deck is intended for those involved in the commissioning and provision of services to prevent CVD, including SCCG and local GPs, service commissioners, public health team and council colleagues.

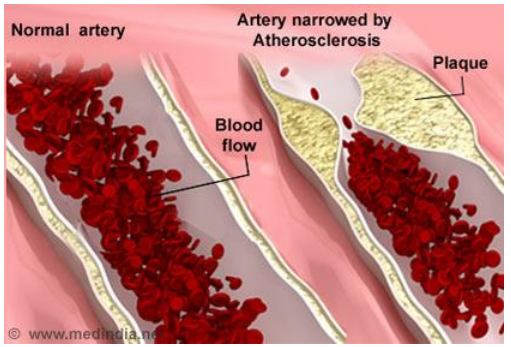
Contents

Cardiovascular disease (CVD) describes any disease of the heart or blood vessels

INTRODUCTION

Within this document CVD is used to describe the multiple diseases which result from atherosclerosis. This is a condition where arteries become narrowed due to build-up of plaque on vessel walls. Sometimes the plaque can grow and clogs up the artery disrupting the flow around the body. Globally, CVD is the leading cause of death and it is also associated with a large burden of preventable illnesses.

- Cardiovascular diseases include angina, heart attacks, stroke, vascular dementia and peripheral arterial disease
- CVD can also be a cause of chronic kidney disease, cardiac arrhythmias and heart failure
- An individual's risk of developing CVD is driven by many factors (table):



Source: http://www.medindia.net/patients/patientinfo/atherosclerosis.htm

Non–modifiable risk factors for CVD	Modifiable risk factors for CVD
▪ Age ▪ Gender ▪ Family history ▪ Ethnicity background	▪ Wider determinants e.g. poverty, poor housing and education ▪ Physical/metabolic risk factors e.g. hypertension, diabetes, hyperlipidaemia ▪ Behavioural factors (smoking, physical activity, diet, alcohol intake) ▪ Poor access to quality primary care e.g. cholesterol and blood pressure lowering treatments and stop smoking services

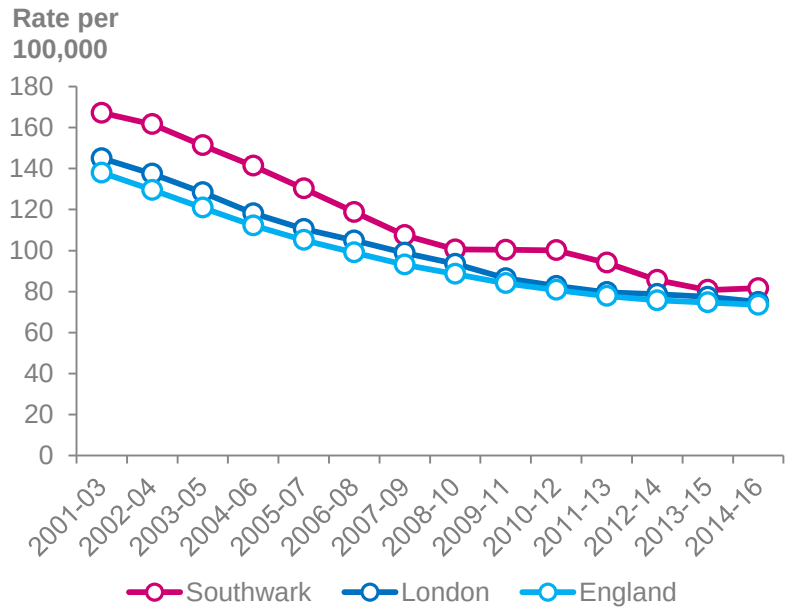
1. What's to know about atherosclerosis? Medical news today (last updated Dec,2017). Available at: https://www.medicalnewstoday.com/articles/247837.php
2. The epidemiology of cardiovascular disease in the UK 2014: http://heart.bmj.com/content/early/2015/05/06/heartjnl-2015-307516.full

Cardiovascular disease is the biggest cause of preventable death in England

PUBLIC HEALTH IMPACTS

Cardiovascular disease affects around seven million people in the UK and is a significant cause of disability and death affecting individuals, families and communities.

Cardiovascular disease mortality rates in Southwark for persons under 75 years



- Although deaths from CVD have reduced significantly over the past 20 years, it remains the second highest cause of death in England[1].
- CVD was responsible for more than a fifth of all premature deaths in Southwark in 2014-16, mirroring the national picture.
- However, the CVD mortality rates for under 75 have declined significant in recent years, falling by more than half since 2001-03, with Southwark narrowing the gap with England.
- CVD disproportionately affects people from disadvantaged backgrounds and is a major contributor to health inequalities.
- It is projected that by 2022 the number of people with a higher than 20% risk of cardiovascular disease could rise from 3.5 million in 2010 to 4.2 million.
- Through identifying and treating patients at who have risk factors for CVD the overall burden of CVD can be reduced.

1. PHE: Action on cardiovascular disease – getting serious about prevention. Sept. 2016.
2. British Heart Foundation. Cardiovascular Disease Statistics BHF UK Factsheet [updated 2016 August 5; cited 2016 August 16]. Available from: www.bhf.org.uk/research/heart-statistics
3. NICE: Cardiovascular disease prevention. Public health guideline [PH25]. June 2010. https://www.nice.org.uk/guidance/ph25/chapter/2-public-health-need-and-practice

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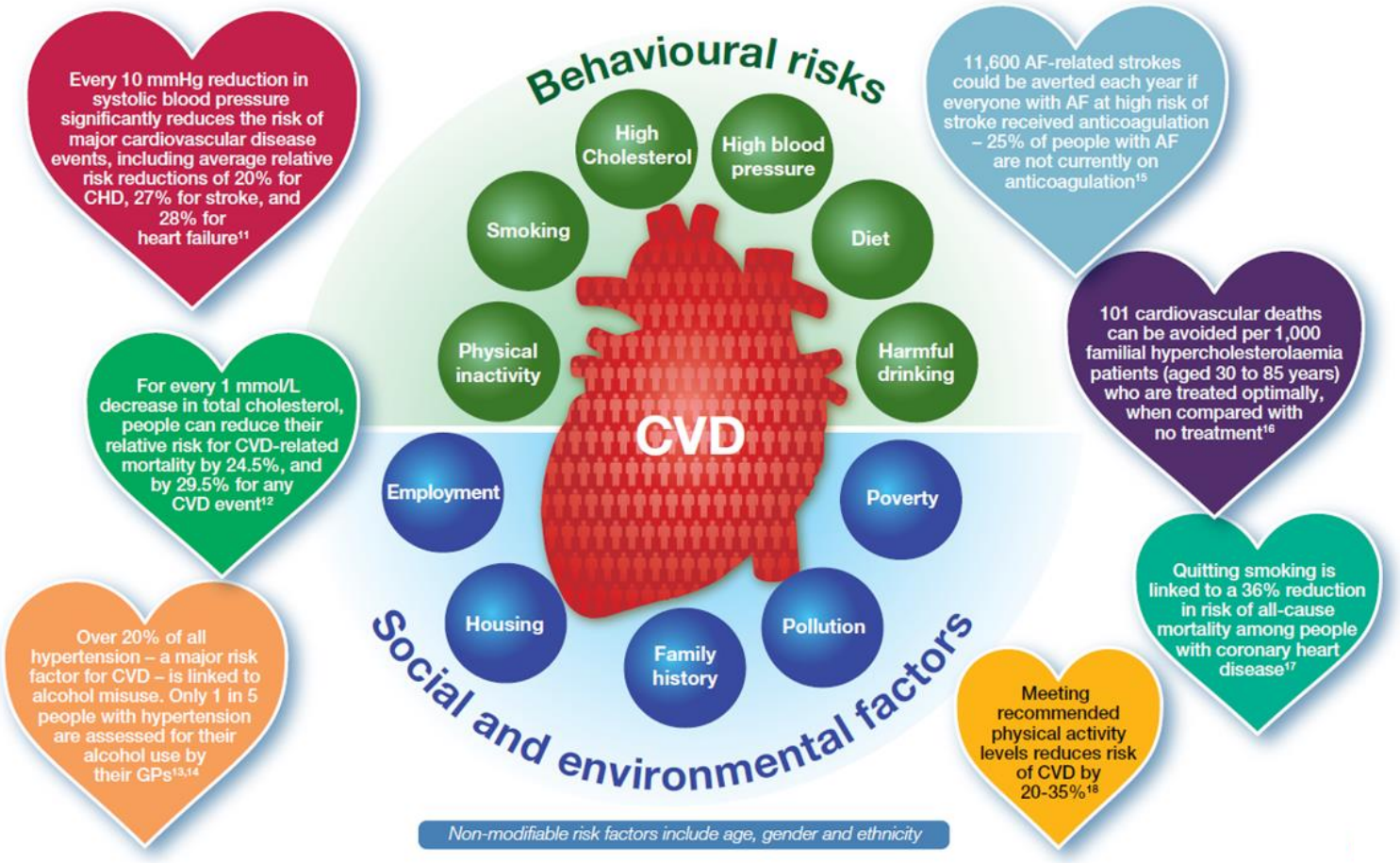
Mortality and morbidity of CVD can be reduced by identifying and treating modifiable risk factors

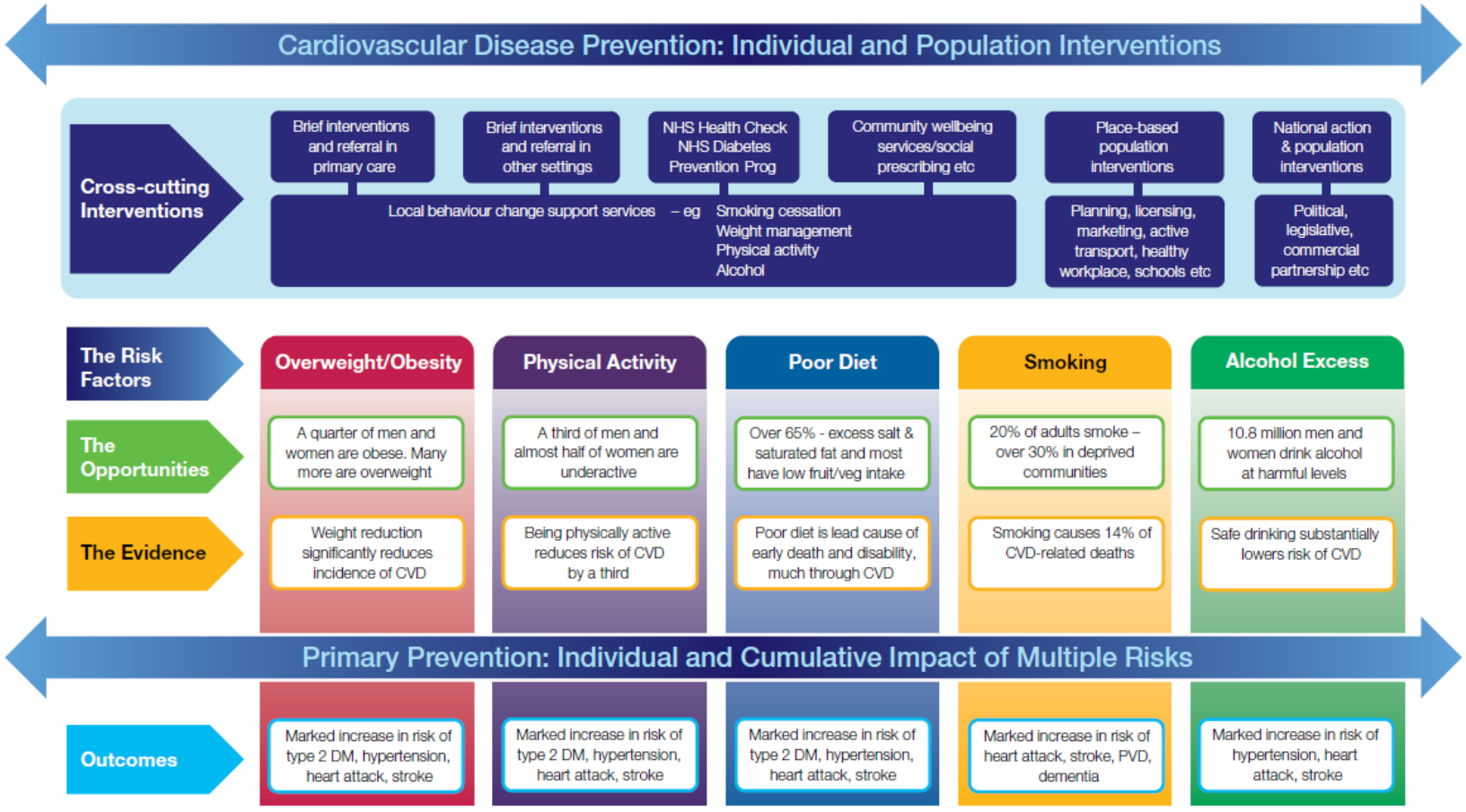
EVIDENCE FOR PREVENTION



1. Source: Action on CVD – getting serous about prevention; PHE, September 2016.

Opportunities for CVD prevention focus on obesity, physical activity, diet, smoking and alcohol intake

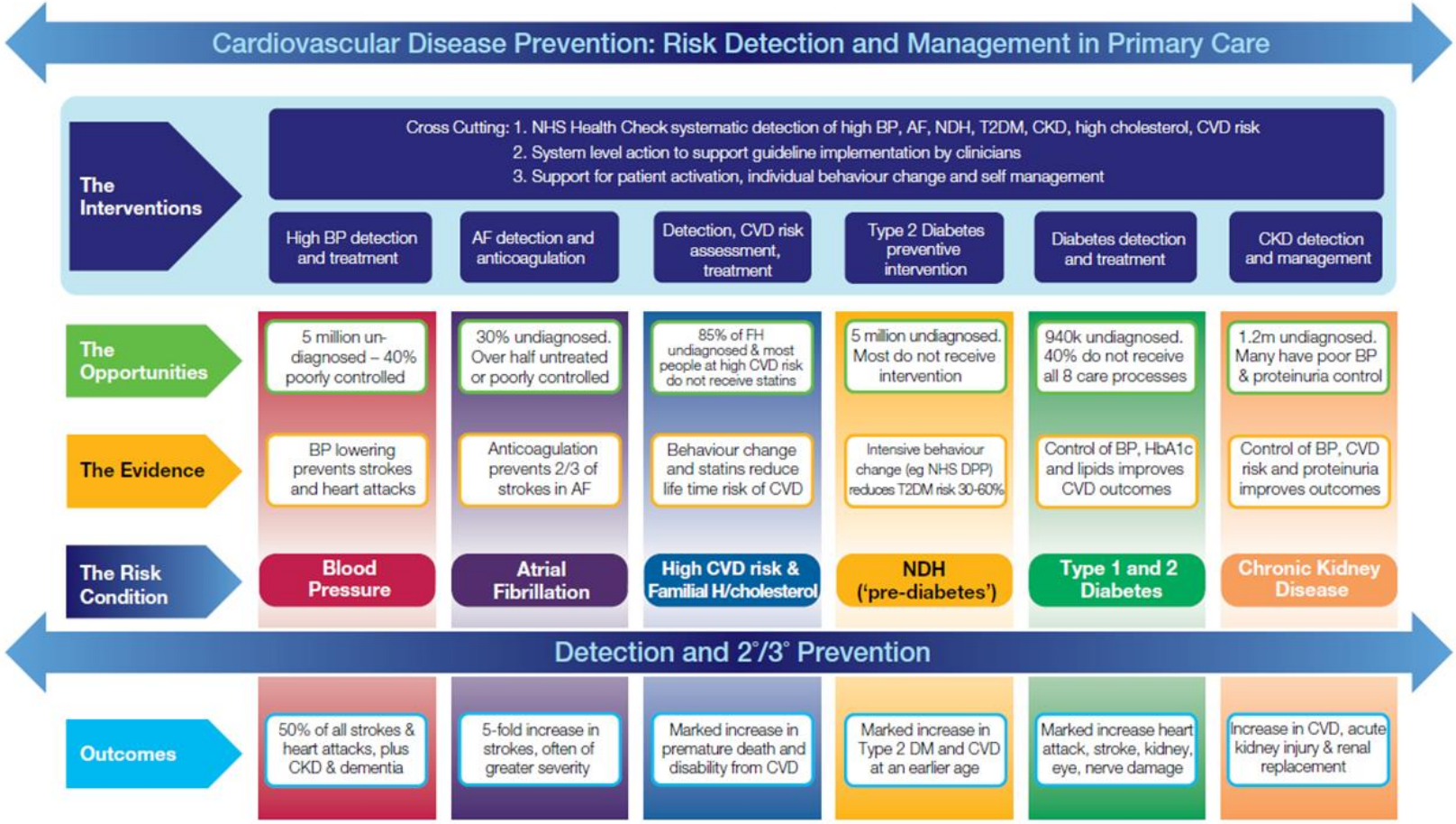
OPPORTUNITIES FOR PREVENTION



1. Source: Action on CVD – getting serous about prevention; PHE, September 2016.

Early identification and management of CVD risk factors in primary care improve outcomes

EARLY INTERVENTION



1. Source: Action on CVD – getting serous about prevention; PHE, September 2016.

The main opportunities to reduce the CVD risk is by implementing preventative measures

SUMMARY

- Within this document CVD is used to describe the multiple diseases which result from atherosclerosis – a condition where arteries become narrowed due to build-up of plaque on vessel walls. Over time the plaque can grow and clogs up the artery disrupting the flow around the body. When the blood supply to the heart is limited, it can cause angina and heart attack.
- CVD is a leading cause of death and it is also associated with a large burden of preventable illnesses. Although deaths from CVD has reduced significantly over the past 20 years nationally, it remains the second highest cause of death in England as well as locally.
- Mortality and morbidity of CVD can be reduced by identifying and treating modifiable risk factors. An individual's risk of developing CVD is influenced by many factors but in this report we have focused on four modifiable risk factors: high blood pressure (HBP), high cholesterol, diabetes mellitus and atrial fibrillation (AF). HBP and high cholesterol are risk factors amenable to behaviour change, while diabetes and AF are both preventable.
- The evidence suggest that the main opportunities to reduce the CVD risk is by implementing preventative measures with a specific focus on tackling obesity, improving physical activity, having a balanced diet, reduce smoking and sensible drinking.

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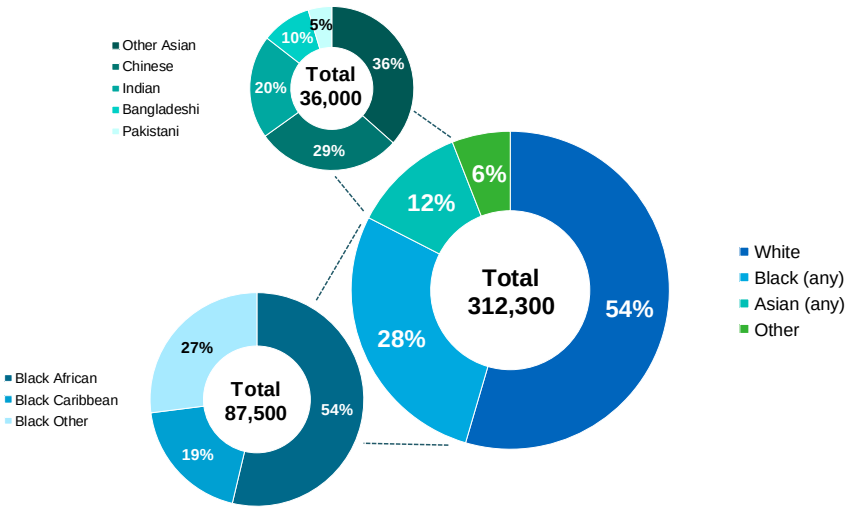
The number of local people who are at higher risk of CVD is predicted to increase over the next ten years

DEMOGRAPHICS

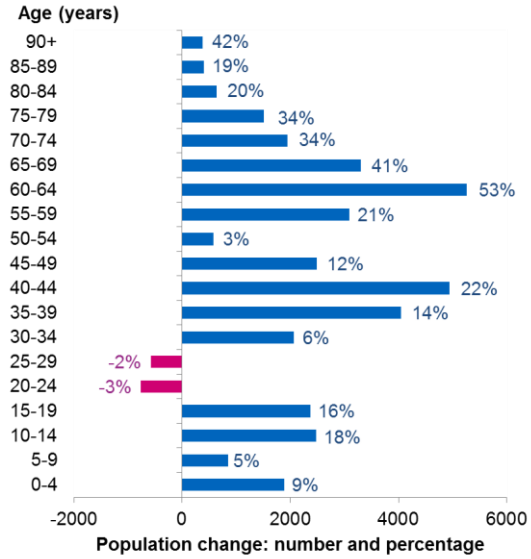
Over the next ten years the population in Southwark is projected to grow by 20% from around 313,000 in 2016 to around 376,000 in 2026 .
Age and ethnicity have been identified as non-modifiable risk factors for CVD.

Southwark ethnic groups in 2016



The population in each ethnic group is predicted to grow with a noticeable growth in residents from Black and Asian groups

Change in population age structure 2016 -2026



The population structure is predicted to change substantially with growth mainly among older age groups (65 plus)

1. Office for National Statistics mid-2015 population estimates
2. Greater London Authority SHLAA capped AHS 2015-based population projections

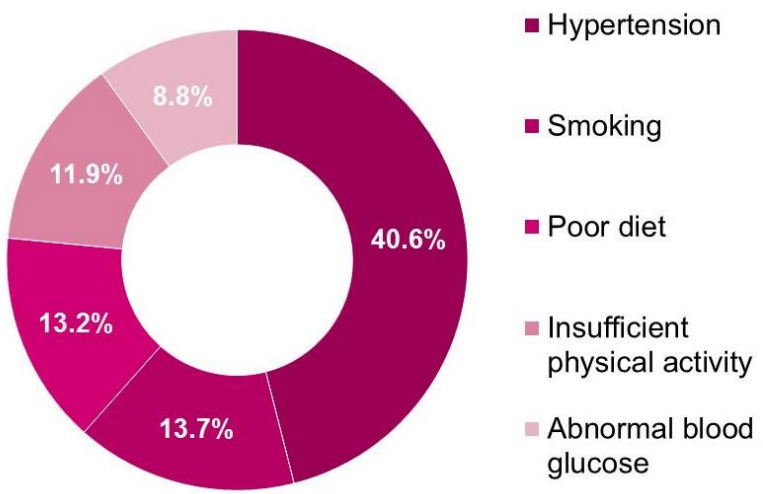
Modifiable risk factors are a key opportunity to reduce the burden of CVD; they represent 86% of the total risk

RISK FACTORS

A myriad of factors influence the prevalence of cardiovascular disease, overall mortality, CHD and heart failure. As previously described these factors can be thought of either modifiable or non-modifiable.

- In total modifiable risk factors account for approximately 86% of the risk of CVD.
- High blood pressure alone contributes to 40.6% of total risk for CVD mortality
- In addition to different levels of individual CVD risk, there is considerable variability in how quickly patients progress with their disease and the impact of this on their activities of daily living.

Attributable fractions of modifiable risk factors for cardiovascular disease



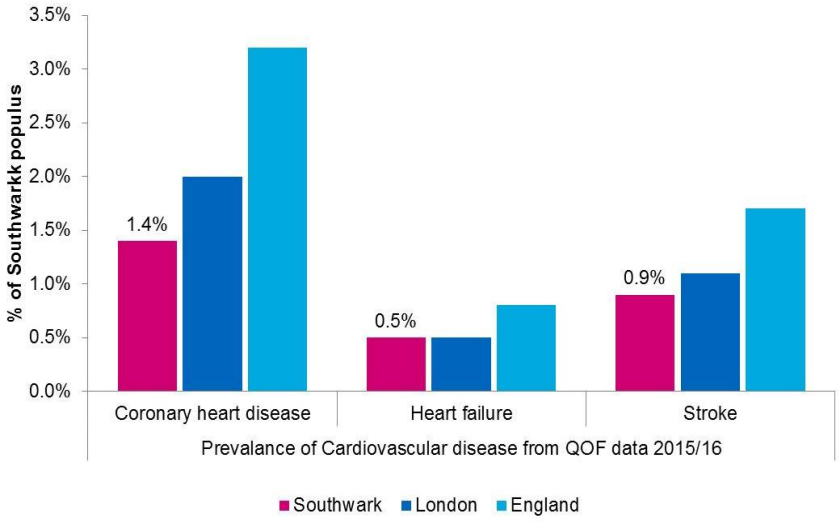
1. Go AS, Mozaffarian D, et al. Heart Disease and Stroke Statistics - 2014 Update: A Report From the American Heart Association. Circulation. 2014;129(3):e28-e292.
2. Bhatnagar P, Wickramasinghe K, Williams J, *et al*. The epidemiology of cardiovascular disease in the UK 2014. *Heart* 2015;**101:**1182-1189. Available online at: http://heart.bmj.com/content/early/2015/05/06/heartjnl-2015-307516.full
3. NICE: Cardiovascular disease prevention. Public health guideline [PH25]. June 2010. https://www.nice.org.uk/guidance/ph25/chapter/2-public-health-need-and-practice

The 2015/16 local prevalence of CVD and related risk factors was similar or lower than London averages

PREVALENCE

In 2015/16 diagnosed prevalence of CVD and related risk factors in Southwark was either similar to or lower than national and London averages.

Prevalence of cardiovascular disease



The difference in local and national averages may be due to variation in age distribution or could also represent under diagnosis of disease.

- These figures are not standardised for age and given the average age in Southwark is younger than England and that CVD prevalence increases with age the lower rates may be misleading.
- Prevalence of stroke and coronary heart disease is lower in Southwark compared with national and London averages. Heart failure rates are similar in Southwark and London.

Recorded prevalence of CVD risk factors (QOF 2015/16)

CVD Risk Factor	Southwark		London	England
	Cases	Prevalence	Prevalence	Prevalence
Atrial Fibrillation	2,262	0.7%	1.0%	1.7%
Hypertension	33,523	10.6%	11.0%	13.8%
Diabetes (17+)	15,228	5.9%	6.3%	6.6%
High Cholesterol	No data available			

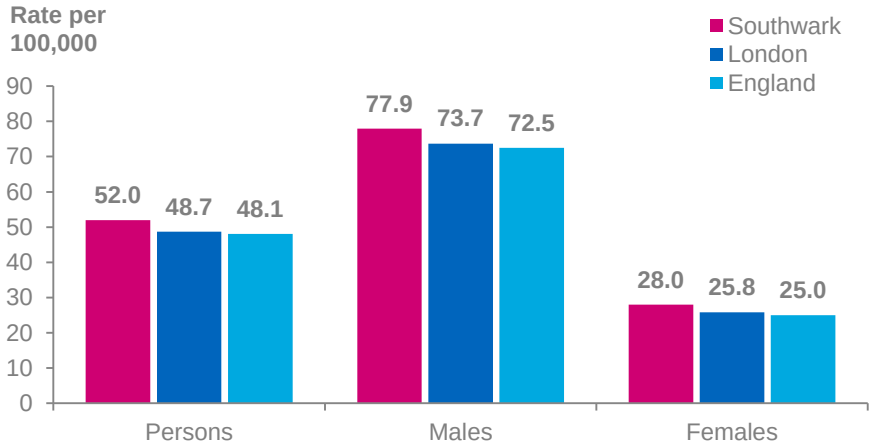
1. CVD profiles for London - PHE Fingertips. Available at: https://fingertips.phe.org.uk/profile/cardiovascular/area-search-results/E39000018?search_type=list-child-areas&place_name=London

Mortality rates from CVD in Southwark are higher than national and regional averages

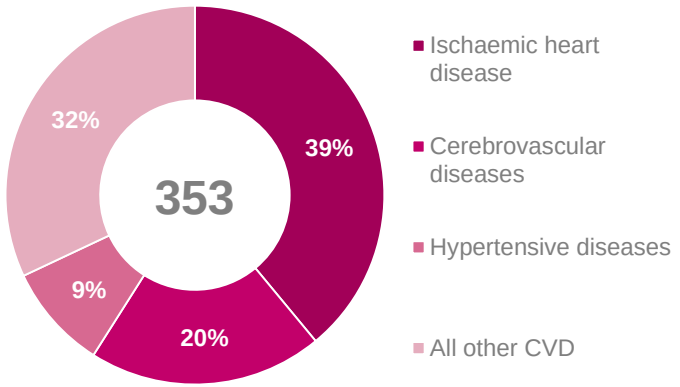
MORTALITY

With 353 deaths in 2015, CVD was the second most common cause of mortality in Southwark.

Preventable mortality from Cardiovascular Disease for those aged under 75, 2013-15



Number and percentage of deaths from cardiovascular diseases in 2015



- Ischaemic heart disease accounted for approximately 40% of all CVD cases.
- Age standardised preventable (premature) deaths from CVD among people under 75 years in 2013-15 were higher in Southwark when compared with London or England as a whole.
- Each year there are approximately 75 preventable and premature deaths in Southwark from CVD.
- This implies that either the recorded prevalence rates are significantly lower than actual prevalence rates or that the cases of CVD in Southwark are more severe or less well managed compared with national cases.

1. Cardiovascular disease (CVD) profile – Public Health (PHE) profiles 2016. Available at: *https://fingertips.phe.org.uk/profile/cardiovascular*
2. NHS Southwark CCG CVD intelligence pack, 2017. Available at: https://www.gov.uk/government/publications/southwark-ccg-cvd-primary-care-intelligence-pack
3. Southwark Annual Public Health Report (APHR) 2016.

Modifiable risk factors are a key opportunity to reduce the burden of CVD

SUMMARY

- Both age and ethnicity are identified as non-modifiable risk factors for CVD. Over the next ten years the local population is projected to grow by 20%. The projected demographic change will have its impact on both Black and Asian ethnic groups – deemed to be at higher risk, and, older people (65 plus) - expected to grow by 30-50% in the next 10 years.
- A myriad of factors influence the prevalence of cardiovascular disease with modifiable factors accounting for around 86% of the risk. High blood pressure alone contributes for 41% of the CVD risk.
- Recent figures (2015/16) suggest that the diagnosed prevalence of CVD and related risk factors in Southwark was either similar to or lower than national and London averages. The difference in local and national averages to the prevalence of CHD, HF and Stroke may be due to variation in age distribution or could also represent under diagnosis of disease.
- Mortality rates from CVD in Southwark are higher than national and regional averages. With 353 deaths (2015), CVD was the second most common cause of mortality in Southwark: ischaemic heart disease (IHD) accounted for 40% of all cases. Preventable deaths (under 75 years) from CVD were higher than London or England suggesting there might be a gap in recorded CVD prevalence across GP practices, or, that the CVD cases locally are more severe or less well managed compared with national cases.
- CVD primary care intelligence pack (SCCG 2017) that use GP practice data on prevention, detection and management across a range of CVD conditions, support the variation that exist amongst GP practices in terms of undiagnosed CVD cases.

Contents

High blood pressure, or hypertension, represents the greatest risk for CVD mortality

HYPERTENSION

Hypertension is defined as a persistent raised blood pressure (BP) of 140/90mmHg and is one of the most common disorders in the UK.

- Although it rarely causes symptoms on its own, the damage it does to the arteries and organs can lead to considerable suffering and burdensome healthcare costs
- Hypertension is quantitatively the most important risk factor for premature cardiovascular disease, being more common than smoking, dyslipidaemia, and diabetes; and accounting for an estimated 54% of all strokes and 47% of all ischemic heart disease events globally.

The Framingham study, based on 30 year follow up data on individuals with normal blood pressure and untreated high blood pressure, have found that:

- There is an epidemiological relationship of various BP components to CHD in men and women and that risk is modified by age. Diastolic blood pressure (DBP) is the stronger predictor of CHD in young people versus systolic blood pressure (SBP) in middle-aged and elderly people.

The evidence from numerous studies also suggest that the risk for both coronary disease and stroke increases progressively with incremental increases in blood pressure above 115/75 mmHg.

1. Kaplan N. Cardiovascular risk of hypertension. https://www.uptodate.com/contents/cardiovascular-risks-of-hypertension
2. Lawes CM, Vander Hoorn S, Rodgers A, International Society of Hypertension. Global burden of blood-pressure-related disease, 2001. Lancet 2008; 371:1513.

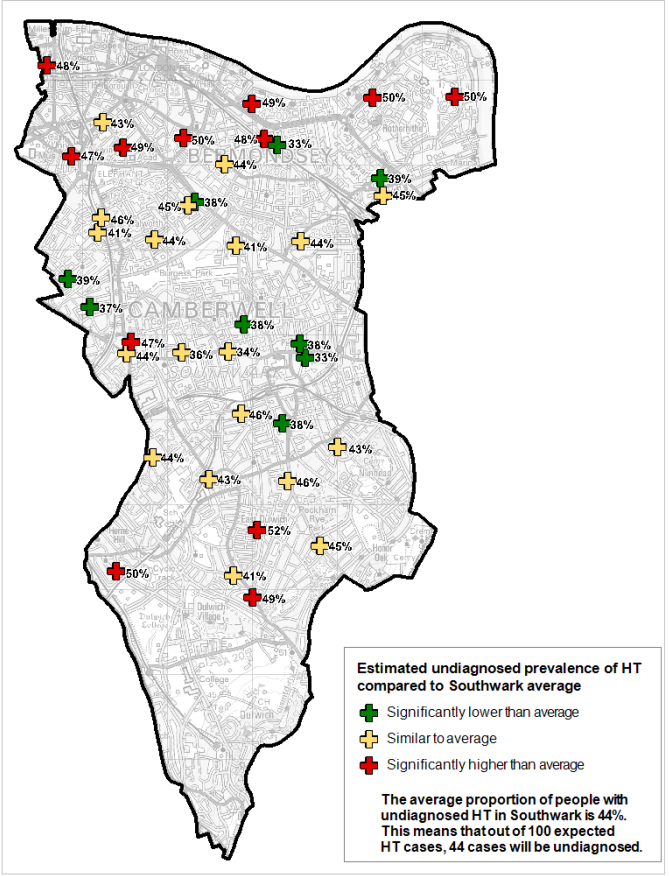
As many as 30,000 people could be living with undiagnosed hypertension in Southwark

HYPERTENSION

In 2015-16 there were 33,523 patients in Southwark on the hypertension register, equivalent to a prevalence of 10.6%.

- This is below levels seen across London (11.0%) and England (13.8%).
- It is estimated that the expected prevalence of hypertension in the CCG was 20.5%, meaning that 9.8% or 30,000 adults could have hypertension that has not been diagnosed.
- There has been a slight increase in diagnosed prevalence over the past few years, however there remains a significant gap between recorded and expected prevalence locally (see map).
- The PHE prevalence model predicts that on average we would expect a much higher prevalence of hypertension locally with 44.1% of cases left undiagnosed for 2014.

Our diagnosed hypertension prevalence remain substantially below the modelled estimate



Estimated prevalence of undiagnosed hypertension by GP practice

Southwark Public Health Department - People & Health Intelligence. diana.divajeva@southwark.gov.uk.
Data source: PHE Hypertension prevalence estimates for local populations, 2016
August 2017

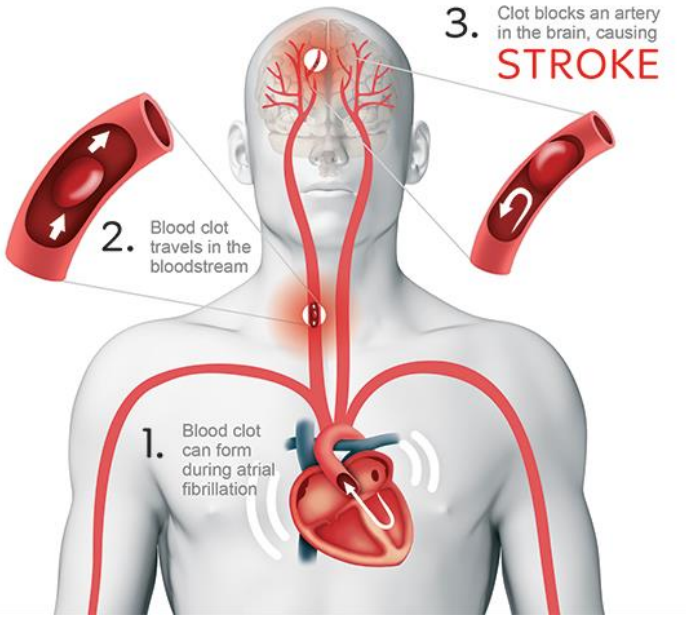
1. Prevalence of undiagnosed high blood pressure by GP practice in Southwark. Public Health Intelligence Team (2016)
2. Hypertension prevalence estimates for local populations – PHE 2016. Available at: https://www.gov.uk/government/publications/hypertension-prevalence-estimates-for-local-populations
3. Hypertension – the 'silent killer'. Faculty of Public health (2015). Available at: http://www.fph.org.uk/uploads/bs_hypertension.pdf

Atrial fibrillation can cause stroke, the risk of stroke is reduced if the patient takes anticoagulant medicine

ATRIAL FIBRILLATION

Atrial fibrillation (AF) is a common arrhythmia resulting in the heart not pumping properly. This can cause heart failure or blood clots can form in the heart and can be sent directly to the brain causing stroke.

- Data from stroke registries show that both unknown and untreated or under treated AF is responsible for most of these strokes, which are often fatal or debilitating.
- Most events could be prevented if efforts were directed towards detection of AF before stroke occurs, through screening or case finding.
- Taking anticoagulant medications reduces the risk of stroke however it also increases the risk of bleeding. Each patient should be assessed to decide whether the benefit of reduced stroke risk outweighs the increased risk of harm from bleeding.
- PHE model and the evidence suggest that AF is associated with increased morbidity, especially stroke and heart failure, and increased mortality. AF constitutes a significant public health problem, and estimates suggest that this condition accounts for 1% of the National Health Service budget in the United Kingdom.



Source: http://admin.heartfoundation.org.nz/atrial-fibrillation/about-atrial-fibrillation/complications-of-af

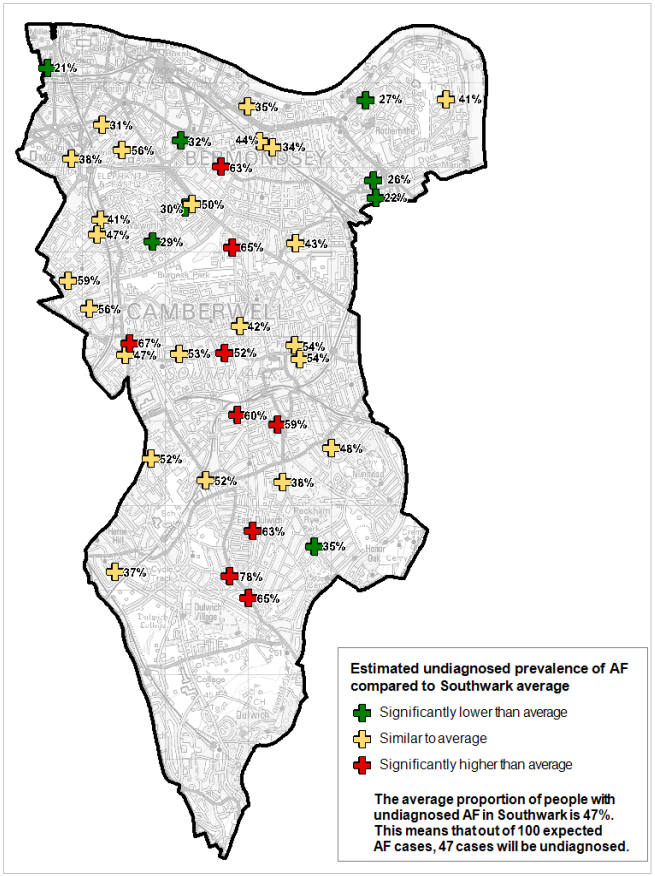
Almost 1,400 people could be living with undiagnosed atrial fibrillation in Southwark

ATRIAL FIBRILLATION

In 2015-16 there were 2,262 patients on the AF register in Southwark, equivalent to a prevalence of 0.7%.

- This is significantly below the prevalence across London (1.0%) and England (1.7%).
- It is estimated that the expected prevalence of AF in the CCG was 1.3%, meaning that an addition of 0.6% or 1,357 adults could have AF that has not been diagnosed.
- The CCG expected prevalence for map shows what the model predicts the percentage of undiagnosed cases of AF would be for each GP practice in Southwark.
- The PHE prevalence model predicts that on average we would expect a much higher prevalence of AF locally with 46.6% of cases left undiagnosed for 2014.

Southwark's diagnosed AF prevalence remains substantially below the modelled estimate.



Estimated prevalence of undiagnosed atrial fibrilation by GP practice

Southwark Public Health Department - People & Health Intelligence. diana.divajeva@southwark.gov.uk.
Data source: PHE Atrial fibrillation prevalence estimates for local populations, 2015
August 2017

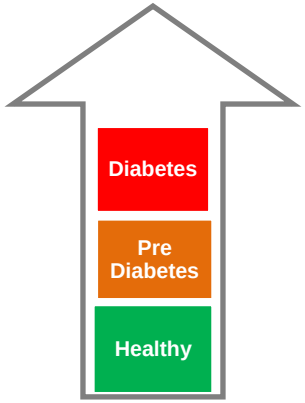
1. Southwark prevalence of undiagnosed high blood pressure by GP practice. Public Health Intelligence Team (2016)
2. Atrial fibrillation prevalence estimates for local populations - PHE 2015. Available at: https://www.gov.uk/government/publications/atrial-fibrillation-prevalence-estimates-for-local-populations
3. Chugh SS, Havmoeller R, Narayanan K, et al. Worldwide epidemiology of atrial fibrillation (A global burden of disease 2010 study). http://circ.ahajournals.org/content/129/8/837

Prediabetes increases the risk for heart disease, stroke and type 2 diabetes

PRE-DIABETES

Pre-Diabetes or often referred as impaired glucose tolerance (IGT) of impaired fasting glucose (IFG) is a state where blood sugar levels are higher than normal but not high enough to be classified as diabetes.

- Around 5-10% of people with prediabetes become diabetic annually although conversion rate varies by population characteristics and the definition of prediabetes.
- Those with pre-diabetes are more likely to have other risk factors for CVD, such as being overweight/obese, high blood pressure and raised cholesterol levels.
- The most commonly used test now to identify pre-diabetes is the HbA1c blood test. The WHO recommends that an HbA1c level of 6.0-6.5% indicates a high risk of diabetes.
- The evidence suggests that 1 in 3 people with pre-diabetes don't even know that they have the condition



Haemoglobin A1C Test for Diabetes

A1c (%)	Fasting Plasma Glucose (FPG)		Oral Glucose Tolerance Test (OGTT)	
	mg/dl	mmol/ll	mg/dl	mmol/l
6.5 or above	126 and above	7.0 and above	200 and above	11.1 and above
5.7 to 6.4	100 to 126	5.56 to 7.0	140 to 199	7.77 to 11.0
Below 5.6	99 and below	3.89 to 5.5	139 and below	7.72 and below

1. Tabak AG, Herder C, Rathmann W, et al. Lancet 2012; 379 (9833); 2279-2290.
2. Pre-diabetes: A high-risk state for developing diabetes. Pre-diabetes (Impaired glucose tolerance. Patient UK, Sep. 2017.

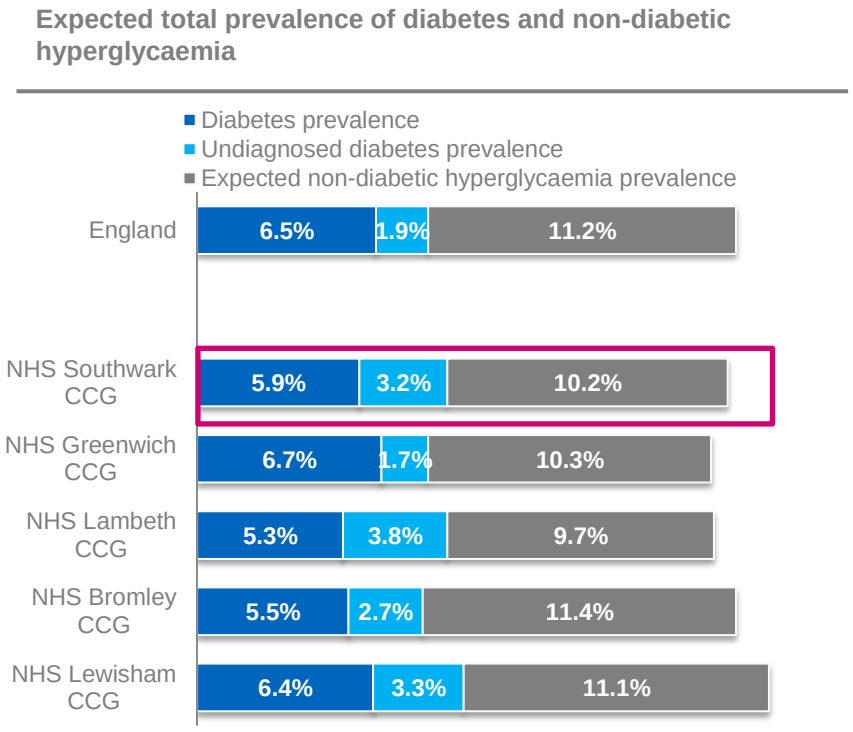
Up to 41,000 people living in Southwark may have undiagnosed diabetes or non diabetic high blood sugar

DIABETES

Diabetes is a common, chronic disease that may lead to a range of complications which can cause disability and reduce quality of life and life expectancy. Approximately 9% of the adult population in the UK has diabetes.

In 2015-16 there were 15,226 patients on the diabetes register (5.9%). However, the estimated total prevalence of diabetes in NHS Southwark CCG is much higher, at 9.1% (diagnosed 5.9%, undiagnosed 3.2%).

- Additionally, there are an estimated 10.2% of people in SCCG who are at increased risk of developing diabetes (i.e. with non-diabetic hyperglycaemia).
- In total it is estimated that 13.4% of people living in Southwark may have either undiagnosed diabetes or non diabetic hyperglycaemia.
- This means that 19.3% of our population are estimated to have diabetes, or at high risk of developing diabetes and only 5.9% have a confirmed diagnosis.



1. PHE prevalence by GP practice, QOF data 2015/16 – PHE fingertips.
2. Bagheri N, McRae I, Konings P, et al. Undiagnosed diabetes from cross-sectional GP practice data: an approach to identify. communities with high likelihood of undiagnosed diabetes. *BMJ Open 2014*;4:e005305.

Local health check data reveals that 44% of people tested had total cholesterol ≥ 5 mmol per litre

HIGH CHOLESTEROL

Cholesterol is transported in the blood in many forms including high-density lipoprotein (HDL) or low density lipoprotein (LDL). These are sometimes referred to as "good cholesterol" (HDL) and "bad cholesterol" (LDL).

- Having too much of another fat in the blood, triglyceride, is often coupled with having too little HDL. This combination is linked with premature coronary heart disease. Healthy levels of both LDL and HDL cholesterol will prevent plaque from building up in your arteries.
- HDL is an independent negative risk factor for cardiovascular disease, an increase of only 10 mg/L in HDL is associated with a risk reduction of 2–3%.
- NICE guidance states that: "Non-high density lipoprotein (non-HDL) cholesterol is seen to be a better CVD risk indicator than low-density lipoprotein (LDL) cholesterol. It is more accurate, more practical and cost effective".

What is a healthy level of cholesterol?		
	Healthy people	**People at high risk**
Total cholesterol	5mmol/L or less	People with existing heart disease, or at high risk of developing it, may be asked to reduce their cholesterol levels further. It is important to discuss and agree what targets you should aim for with your doctor.
Non HDL-cholesterol	4 mmol/L or less	
LDL-cholesterol	3 mmol/L or less	
HDL-cholesterol	Men > 1.0 mmol/L Women > 1.2 mmol/L	
Fasting Triglycerides	2 mmol/L or less	

1. Ali KH et al. Cardiovascular disease risk reduction by raising HDL cholesterol – current therapies and future opportunities. Br J Pharmacol.2012;167(6):1177–1194.
2. Cardiovascular disease: risk assessment and reduction, including lipid modification. NICE (updated Sept. 2016).

Local health check data reveals that 44% of people tested had total cholesterol ≥ 5 mmol per litre

HIGH CHOLESTEROL

Public Health England (PHE) publishes annual data regarding cholesterol levels for different subsets of patients including diabetes (type 1 and 2), CHD, mental health and stroke/TIA. The management of cardiovascular risk factors in patients with established cardiovascular diagnoses falls outside the scope of this document. Since there are no local data collected on cholesterol, the data are gathered from NHS Health Checks are used below as a proxy.

The health check data highlights that of the people who had their cholesterol measured for the last 5 years 44% were found to have a total cholesterol greater than 5 mmol per litre.

Year	Health Checks completed	Total Cholesterol ≥ 5mmol/L
2012 - 2017	39,973	17,542 (44%)

Previously these results would have been considered to show high cholesterol and therefore increased CVD risk. Current evidence places greater emphasis on the ratio of HDL to other cholesterol. Without this further detail it is difficult to understand the full implications of these results.

		Optimal	Moderate	High
Total / HDL ratio	Men	<3.5	3.5 – 5.0	>5.0
	Women	<3.0	3.0 – 4.4	>4.4
LDL to HDL ratio		<2.5	2.5 – 3.3	>3.3
HDL to LDL ratio		>0.4	0.4 – 0.3	<0.3
TG to HDL ratio		<2.0	2.0 – 3.8	>3.8

Q-Risk2 is a risk calculator used to predict a persons 10 year risk of a CVD event and takes into account also the ratio of all cholesterol to HDL cholesterol.
If a patient has a QRisk2 score of 10% or greater NICE recommends they take a statin.

1. Local data from Health Checks, Southwark Public Health

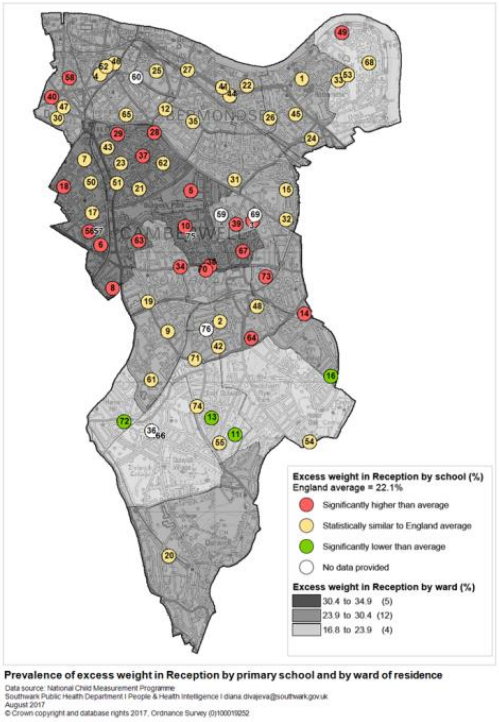
Behavioural risk factors such as physical (in)activity and obesity contribute to CVD risk

BEHAVIOURAL RISK FACTORS

Six out of ten Southwark residents are meeting national physical activity guidelines

- The proportion of active residents in Southwark has increased from 57% in 2012-13 to 63% in 2014-15. However, the levels of inactivity increase with body weight with around 17% of Southwark residents classified as healthy weight being inactive compared to 32% of those who were overweight and 41% of those who were obese.

Excess weight in reception



Prevalence of excess weight in Reception by primary school and by ward of residence

Data source: National Child Measurement Programme
Southwark Public Health Department I People & Health Intelligence I diana.divajeva@southwark.gov.uk
August 2017
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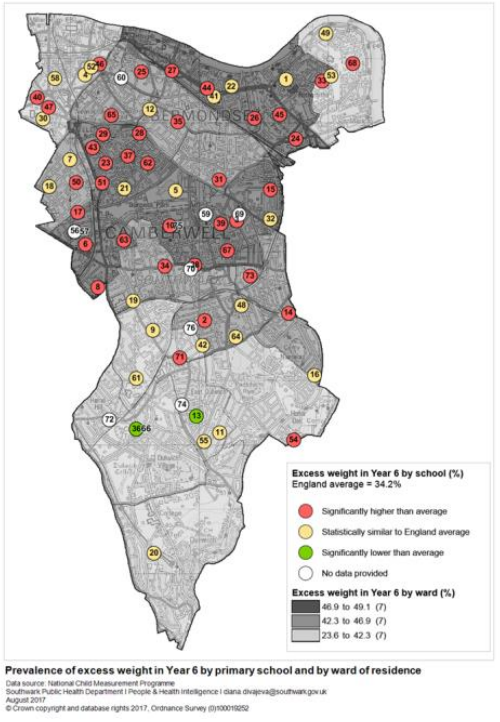
Excess weight in Year 6



Prevalence of excess weight in Year 6 by primary school and by ward of residence

Data source: National Child Measurement Programme
Southwark Public Health Department I People & Health Intelligence I diana.divajeva@southwark.gov.uk
August 2017
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- Excess weight among children in Southwark significantly above London and national average and a real cause for concern.

Southwark Council
southwark.gov.uk

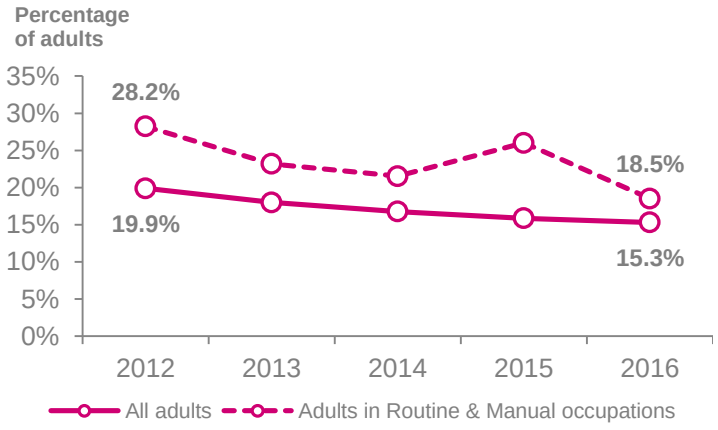
Behavioural risk factors such as smoking and salt intake also contribute to CVD risk

BEHAVIOURAL RISK FACTORS

Smoking has long been known as the major risk factor for CVD.

- In 2012/14 around 1,500 potential years of life have been lost due to smoking related illness per 100,000 Southwark residents age 35+.
- There are significant inequalities in smoking prevalence: it was 60% higher in adults in routine and manual occupations compared to the general Southwark population in 2015.

Trend of smoking prevalence in all adults and those employed in routine and manual occupations in Southwark



Reduced dietary salt for the prevention of CVD.

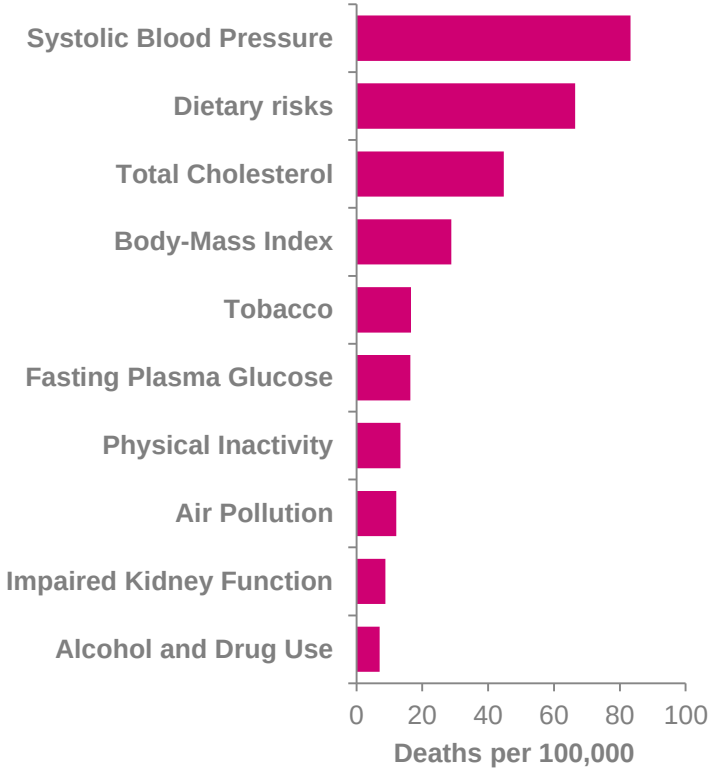
- High blood pressure (hypertension) is a major risk for CVDs, especially heart attack and stroke.
- Evidence shows that reducing sodium intake significantly reduces blood pressure in adults. Sodium is found not only in table salt, but also naturally in a variety of foods, including milk, cream, eggs, meat and shellfish. It is also found in much high amounts in processed foods.
- WHO recommends a reduction in sodium intake to reduce blood pressure and risk of cardiovascular disease, stroke and coronary heart disease in adults.
- WHO recommends a reduction to <2 g/day sodium (5 g/day salt) in adults.

1. Public Health England Local Tobacco Control Profiles 2016
2. Public Health England, Local Alcohol Profiles for England, www.fingertips.phe.org.uk, Accessed: 16/01/2017.
3. http://www.who.int/elena/titles/sodium_cvd_adults/en/

Most CVD can be avoided by implementing strategies that focus on blood pressure, diet and cholesterol

SUMMARY OF RISK FACTORS

Across London, the top modifiable risk factors for developing CVD are:



The following interventions can have a real impact on reducing cardiovascular disease morbidity and preventable mortality in Southwark:

- Blood pressure medications
- Diet and physical activity advice and support
- Statin medication
- Help to stop smoking

1. GBD 2015 Risk Factors Collaborators. Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015. *The Lancet*, 2016;388 (10053):1659-1724. http://ihmeuw.org/47xl

A significant number of local residents live with cardiovascular disease risk factors

SUMMARY

- Hypertension, defined as a persistent raised blood pressure (HBP) of 140/90mmHg, is one of the most common disorders in the UK and at the same time the most important risk factor for premature CVD. Diastolic blood pressure (DBP) is the stronger predictor of CHD in young people versus systolic blood pressure (SBP) in middle-aged and elderly people.
- There is a wide GP variation of recorded prevalence of HBP and the estimated prevalence of hypertension in the CCG is estimated to be 20.5%, meaning that 9.8% or 30,000 adults could live with undiagnosed hypertension locally.
- Atrial fibrillation (AF) is a common arrhythmia that is considered as key risk factors for stroke. Data from stroke registries show that both unknown, untreated or under treated AF is responsible for most of these strokes, which are often fatal or debilitating. The PHE prevalence model suggest that on average we would expect a significantly higher prevalence of AF locally (around 1.3%) with as many as 1357 people living with undiagnosed AF.
- Pre-diabetes or impaired glucose tolerance is characterised by higher than normal high blood sugar levels, which in almost half of cases leads to Type 2 diabetes over time. One in three people with pre-diabetes are not aware they have the condition. Diabetes is a common, chronic condition that lead to a range of complications. The estimated local prevalence is 9.1% with 3.2% being undiagnosed. An additional 10.2% (up to 41,000 people) are estimated to be at an increased risk of developing diabetes.

A significant number of local residents live with cardiovascular disease risk factors

SUMMARY

- Having high levels (over 5mmol/L) of cholesterol in the blood increases the risk for CVD. Healthy levels of both good (HDL) and bad (LDL) cholesterol will prevent a heart condition or atherosclerosis. NICE suggest that non-HDL cholesterol is a better CVD risk indicator. Local NHS Health Check data highlights that about 44% of people tested over the last five years had a higher than normal cholesterol level. If a patient has a QRisk2 score of 10% or greater NICE recommends they start on statins.
- Behavioural risk factors such as physical activity, excess weight, smoking and salt consumption all contribute to CVD risk.
- Most CVDs can be avoided by implementing strategies that focus on blood pressure, diet and high cholesterol. The most cost-effective in terms of primary prevention is diet and physical activity including advice and support.

Contents

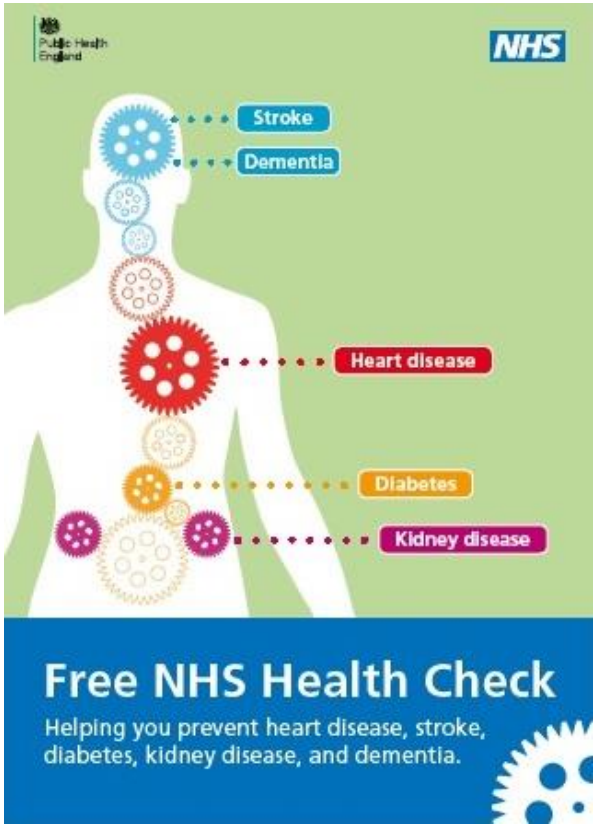
NHS health checks are offered to people aged 40-74 who are not known to have cardiovascular disease

NHS HEALTH CHECKS

The NHS Health Check scheme aims to identify and refer people who are unaware that they living with cardiovascular disease or associated risk factors. This can decrease mortality, morbidity and overall costs associated with cardiovascular disease.

The Health Check provide the public with information on how to reduce their risk of CVD through behavioural changes and/or medical treatment where necessary.

- All people aged 40-74 who are not known to have CVD invited on a five-year rolling basis
- The data collected includes age, gender, smoking status, family history of coronary heart disease, ethnicity, BMI, cholesterol, blood pressure, physical activity level, alcohol use
- Providing health checks is a statutory requirement and PHE monitors the number of checks offered and performed.
- Around half the people invited attend a Health Check. *For Southwark this figure is around 70%.* This creates opportunities to develop new ways of engaging with people for whom a face-to-face health check is inconvenient.



Health checks in Southwark found 20% of people tested had a moderate (or higher) risk for CVD

SOUTHWARK HEALTH CHECK RESULTS

Between 2012 and 2017 we identified 7829 people who were moderate or higher risk for CVD, which is 20% of the cohort who accepted the invitation to health check. This figure means that 1 in 5 tested could benefit from further interventions that we know work in preventing CVD.

	2012-13	2013-14	2014-15	2015-16	2016-17	5 year total
Health Checks completed	6,262	7,631	8,826	9,478	7,776	39,973
Hypertension ≥140/90	5456	1,142 (15%)	974 (11%)	1,115 (12%)	1,172 (15%)	5,456(14%)
Cholesterol ≥ 5	2,372 (42%)	3,247 (54%)	3,871 (45%)	4,326 (45%)	3,726 (48%)	17,542(44%)
Diabetes	88 (1%)	90 (1%)	97 (1%)	148 (2%)	89 (1%)	512(1%)
Impaired glucose tolerance	317 (5%)	405 (5%)	403 (5%)	703 (7%)	476 (6%)	2,304(6%)
CVD risk:	JBS2:	JBS2:	JBS2:	QRISK:	QRISK:	
Mod ≥10%->20%	1,317 (21%)	1,509 (20%)	1,423 (16%)	985 (10%)	731 (9%)	5,965(15%)
High - ≥ 20%- 30%	385 (6%)	339 (4%)	381 (4%)	216 (2%)	101 (1%)	1,422(4%)
Very High > 30%+	123 (2%)	126 (2%)	121 (1%)	54 (1%)	18 (0%)	442(1%)

More could be done to deliver these interventions. NICE recommends support to change behaviour for those identified to be at modified or higher risk (7829 people in our cohort). If this fails, then statins should also be offered. However, our GPs are reporting **low referrals into behaviour change** interventions (1410 persons), and **low rates of statin prescribing** (862 persons). It is also unclear whether people with high blood pressure **receive blood pressure medication** to manage this condition, as advised.

1. NICE. Clinical guideline [CG181]: Cardiovascular disease: risk assessment and reduction, including lipid modification. 2014. Points 1.3.14 to 1.3.18 https://www.nice.org.uk/guidance/cg181/chapter/1-recommendations

Quality Outcome Frameworks can incentivise further screening of patients diagnosed with some types of CVD

SOUTHWARK QUALITY OUTCOME FRAMEWORK

The Quality and Outcomes Framework (QOF) is a voluntary annual reward and incentive programme for all GP surgeries in England, detailing practice achievement results. It is not about performance management but resourcing and then rewarding good practice. Targets are set for a variety of indicators, depending on compliance with these targets GP practices are awarded points which translate into funding for the practice.

For example, in the diabetes domain there are ten indicators including annual checks of blood pressure, cholesterol and screening for complications of diabetes. The QOF system encourages screening and management of CVD risk factors in diabetic patients.

QOF Examples	
Clinical Domain	Public Health Domain
Secondary prevention of CHD	Primary prevention of CVD
Atrial Fibrillation	Blood pressure
Hypertension	Smoking
Heart failure	Obesity
Diabetes	

Currently QOF is set at a national level but the intention is to move towards locally set goals.

This could allow Southwark to tailor QOF incentives to focus on screening for CVD risk factors.

Southwark CCG and Council have developed a local strategy to transform local NHS and care services

SOUTHWARK PHM & PMS CONTRACTS

Southwark commissioners across health and social care are committed to improving the health and wellbeing of Southwark people. Building on the national Five Year Forward View, the CCG and Southwark Council have developed a local strategy to transform local NHS and care services in the borough.

- Southwark CCG has commissioned the two GP Federations to deliver the **Population Health Management (PHM) contract**. PHM contract is ensuring the delivery of services around our populations, and that all patients can access the same offer of care irrespective of which practice they are registered with. Our LCNs are providing a number of services through practices and within central hubs. Some of these services aim to identify potential health issues e.g. high blood pressure, earlier on so they can be proactively managed and prevent avoidable health conditions.
- Locally, a **Clinical Effectiveness Group** has been established to offer practical support to help federations and their practices to reduce variation in the delivery of these services by establishing. This helps practices to understand their performance and variation and to spread good practice so that more local people receive high quality services
- **Personalised Medical Service (PMS) contracts** with local GP practices are there to help practices to develop and implement new care coordination services. This complements investment already made through existing funding for integrated services within the PHM contracts.

There are a range of local programmes and initiatives that provide opportunities to improve CVD outcomes

SUMMARY

- The NHS Health Check scheme aims to identify and refer people who are unaware that they living with cardiovascular disease or associated risk factors. This can decrease mortality, morbidity and overall costs associated with cardiovascular disease.
- Around half the people invited attend a Health Check. *For Southwark this figure is around 70%.* This creates opportunities to develop new ways of engaging with people for whom a face-to-face health check is inconvenient.
- Over the last five years the NHS health Check in Southwark has identified about 20% of those tested to be at moderate or higher risk for CVD. This is a large cohort that could benefit from further interventions that we know work in preventing CVD.
- NICE recommend that for the above cohort support to change behaviour should be offered. If this fail to lower the risk, statins should be started. More can be done to improve the current GP referrals as data suggest low referrals into behaviour change, statin prescribing and blood pressure medication for those at risk.
- Quality Outcome Frameworks as well as Population Health Management and Personalised Medical Service Contract offers can incentivise further screening of patients diagnosed with some types of CVD.

Contents

By identifying and treating patients at higher CVD risk, the overall burden of these conditions can be reduced

KEY FINDINGS

- Globally, CVD is the leading cause of death and it is also associated with a large burden of preventable illnesses.
- This report focuses on four major CVD risk factors (Hypertension/Atrial fibrillation/Diabetes/High Cholesterol) aiming to improve our understanding of the level of local need in terms of primary prevention.
- In total modifiable risk factors account for around 86% of the risk of CVD. High blood pressure alone contributes for 41% of total risk for CVD mortality.
- In 2015/16 diagnosed prevalence of CVD and related risk factors in Southwark was either similar to or lower than national and London averages.
- With 353 deaths in 2015, CVD was the second most common cause of mortality in Southwark. Ischaemic heart disease accounted for approximately 40% of all CVD cases.
- Hypertension is arguably the most important modifiable risk factor for coronary heart disease (the leading cause of premature death in the UK) and stroke (the third leading cause of premature death in the UK).
- There is a wide GP practice variation and our diagnosed hypertension and AF prevalence remains substantially below the PHE modelled estimate. Almost 1 in 5 people in Southwark are estimated to have or are at high risk of developing diabetes.
- Health checks locally have identified that 1 in 5 people tested to be at high risk for CVD and this cohort could benefit from further interventions that we know work in preventing CVD. GP referrals system needs improving.

By identifying and treating patients at higher CVD risk, the overall burden of these conditions can be reduced

NEXT STEPS

1. This report revealed that a significant number of the population in Southwark have an undiagnosed CVD risk factor.
2. The NHS Health checks programme is achieving and exceeding the NHS England targets and have identified a 20% prevalence in the eligible population tested being at a higher risk for CVD.
3. Reducing the CVD risks and morbidity in Southwark by setting local priorities for primary prevention.
4. Reducing the overall burden of disease locally by focusing on the treatment and management of CVD both in primary and secondary care.

1. Tackling that issue by:
   - Better understanding the wide GP variation in terms of recorded and estimated prevalence for high BP, AF, and undiagnosed diabetes;
   - Ensuring that those with confirmed hypertension go on to receive effective medicines to lower their blood pressure.
2. Improvements are required to:
   - Enable GPs to refer more quickly and easily to behaviour change services (smoking, obesity, poor diet and alcohol excess); and
   - Encourage GPs to offer and prescribe statins more appropriately, as per NICE guidance
3. Support individual behaviour change aimed at reducing key behaviour risk factors. Most CVD cab be avoided by focusing on blood pressure, diet and cholesterol.

Robson J, et al. The NHS Health Check in England: an evaluation of the first 4 years. Cardiovascular medicine 2016. http://bmjopen.bmj.com/content/6/1/e008840

Contents

A range of guidance and evidence are available which support work to improve CVD outcomes

PRIMARY PREVENTION GUIDANCE

- NICE. Cardiovascular disease prevention. Public health guideline [PH25]. June 2010 https://www.nice.org.uk/guidance/ph25
- NICE. Cardiovascular disease: risk assessment and reduction, including lipid modification. Clinical guideline [CG181] Published date: July 2014 (Last updated: Sep. 2016) https://www.nice.org.uk/guidance/cg181
- Joint British Societies for the prevention of cardiovascular disease (JBS3). Report 2014. http://www.jbs3risk.com/pages/report.htm
- 2016 European Guidelines on cardiovascular disease prevention in clinical practice; European Society of Cardiology (2016).
- Stewart J, Manmathan G and Wilkinson P. Primary prevention of cardiovascular disease: A review of contemporary guidance and literature. *JRSM Cardiovasc Dis*. 2017. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5331469/
- Hennekens CH, Lopez-Sendon J. Prevention of CVD events in those with established disease or at high risk. https://www.uptodate.com/contents/prevention-of-cardiovascular-disease-events-in-those-with-established-disease-or-at-high-risk?source=see_link
- The cardiovascular disease (CVD) prevention pathway. 2016. https://www.england.nhs.uk/rightcare/wp-content/uploads/sites/40/2016/09/cvd-pathway.pdf
- The Local Authorities (Public Health Functions and Entry to Premises by Local Healthwatch Representatives) Regulations 2013. No 351. Part 2. Reg 5. http://tinyurl.com/y868q24p