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Coronary Heart Disease Introduction

Coronary heart disease (CHD) is a condition in which the coronary arteries become narrowed by fatty deposits, reducing the amount of oxygen-rich blood that reaches the heart muscle. Common symptoms are chest pain (angina) and shortness of breath (NHS, 2025).

A number of things can increase your risk of cardiovascular disease. These include high blood pressure, high cholesterol, diabetes, smoking, unhealthy diet, physical inactivity, increasing age and a family history. NICE also takes into account age, ethnicity, deprivation and family history in their assessment of the risk of cardiovascular disease (NICE, 2023).

CHD is a major public health problem because it is common and can lead to serious complications such as heart attacks. It can also influence a person's physical, mental and social well-being.

In our case study Mr Ahmed is 67 years old. He experiences chest pain on exertion and dyspnoea on walking or climbing stairs. His symptoms have deteriorated over the last 6 weeks. Mr Ahmed's brother also suffered a stroke at the age of 68, and he is a non-smoker.

These factors make cardiovascular health especially pertinent to Mr Ahmed. However, his symptoms need to be properly assessed rather than assuming that he has CHD or angina.

In this discussion we will examine the principal public health strategies applied to measure, monitor and control CHD in communities and the factors that can affect the health and wellbeing of people with CHD.

CHD - Measuring Community

Public health practitioners need to measure the burden of CHD to know the impact of disease on the community.

The three important epidemiological measures are incidence, prevalence and mortality.

Incidence refers to the number of new cases of a disease occurring in a defined population during a specified period of time.

Prevalence is the total number of people in a population who have a disease at a specific point in time.

Mortality is the number of deaths or death rate from a disease.

According to the Office for Health Improvement and Disparities (OHID, 2025), some 1.9 million people in England, approximately 3% of the population, had a recorded GP diagnosis of CHD in the financial year ending March 2025.

CHD can be ascertained by multiple sources such as GP records, hospital admission data and mortality data. OHID integrates information across the cardiovascular care pathway to support public health professionals in understanding the cardiovascular disease burden and in making decisions about health services (OHID, 2025).

The data also let us look at changes over time. For instance, hospital admission rates for CHD in England dropped by 46% between the financial years ending in March 2005 and March 2025 (OHID, 2025).

This shows improvement over time. However, in the financial year ending March 2025, there was a 3.2-fold difference between the local authorities with the highest and lowest CHD hospital admission rates (OHID, 2025). This shows that geographical inequalities still remain.

But there are limits to these measurements. For example, GP-recorded prevalence largely captures people who have already been diagnosed and recorded in primary care. So it may not be representative of all people with CHD.

Using several different data sources over time can provide a more complete picture of the burden of CHD in communities.

CHD and Persons at Risk Surveillance

Measurement and monitoring are related but not quite the same thing.

Measurement tells us how much CHD there is, and monitoring means tracking CHD and its risk factors over time to find changes and people or communities at increased risk.

Primary care records, hospital admission data, mortality statistics and national cardiovascular disease profiles can be used to monitor CHD. OHID cardiovascular disease profiles present data at England, Integrated Care Board and local authority levels. These profiles can help health professionals to understand cardiovascular disease in local populations (OHID, 2025).

Monitoring also means finding people who are at higher risk for cardiovascular disease.

NICE recommends that primary care uses a systematic approach to identify people who may be at high risk of cardiovascular disease. Cardiovascular risk factors already recorded in electronic primary-care records can aid in identifying people who may require a full risk assessment (NICE, 2023).

NICE recommends estimating the 10-year risk of cardiovascular disease using QRISK3 in appropriate people aged 25 to 84 years who do not have existing cardiovascular disease (NICE, 2023).

Some of the factors that can be considered in risk assessment include age, blood pressure, cholesterol, smoking, diabetes and ethnicity, as well as other relevant clinical factors.

One strength of monitoring is that it can identify people at increased risk before they have a serious cardiovascular event. That enables earlier prevention and treatment.

However, risk-assessment tools are not perfect. NICE (2023) acknowledges that cardiovascular risk may be underestimated in some groups. Therefore, risk scores should be used in combination with clinical judgement and not assumed to be 100% accurate for all individuals.

Monitoring ultimately helps track changes in CHD over time and helps healthcare professionals to plan prevention, treatment and appropriate use of healthcare resources.

CHD Management in the Community

CHD can be controlled through primary and secondary prevention.

Primary prevention is the reduction of risk for cardiovascular disease. The recommendations include healthy eating, physical activity, maintaining a healthy weight, not smoking and managing conditions such as diabetes, high blood pressure and high cholesterol.

NICE recommends that information and advice should be given on lifestyle changes to reduce cardiovascular risk. NICE also recommends treatments such as statins for suitable individuals based on their cardiovascular risk and individual circumstances (NICE, 2023).

A key public health prevention programme in England is the NHS Health Check, aimed at identifying cardiovascular risk and associated health conditions.

Evidence was found by a rapid review by Tanner et al. (2022) that NHS Health Checks were associated with increased detection of cardiovascular risk factors and conditions such as high blood pressure, raised cholesterol and diabetes.

But the review also found inequalities in attendance. People living in areas of higher socio-economic deprivation were less likely to attend than people living in areas of lesser deprivation (Tanner et al., 2022).

This is an important limitation, as provision of a prevention programme alone does not ensure that all those who could benefit from the programme actually participate.

Uthman et al. (2024) conducted a review of 95 systematic reviews of both pharmacological and non-pharmacological approaches to primary prevention of cardiovascular disease. Their research shows that cardiovascular prevention needs different approaches and that research evidence is important in considering the effectiveness of interventions.

Secondary prevention is aimed at people who already have cardiovascular disease. It aims at minimising the risk of subsequent cardiovascular events by controlling cardiovascular risk factors, promoting a healthy lifestyle and providing adequate medical treatment.

So, to control CHD, more is needed than just asking people to change their lifestyle. Prevention requires a combination of individual behaviour, available healthcare, prevention programmes and evidence-based public health interventions.

Determinants of Health and Wellbeing, Health Education and Summary

Factors influencing cardiovascular health are modifiable and non-modifiable. Modifiable risk factors can be changed or managed. These are smoking, unhealthy diet, physical inactivity, obesity, high blood pressure, high cholesterol and diabetes.

Age, genetics and family history are non-modifiable risk factors.

Social and economic conditions are important too. Deprivation is one of the variables considered in the prediction of cardiovascular risk (NICE, 2023).

Applying these factors to Mr Ahmed, he is 67 years old and has a family history of cardiovascular disease as his brother had a stroke at 68. It is good that Mr Ahmed is a non-smoker as smoking is an important modifiable cardiovascular risk factor.

However, for the last 6 weeks he has been having increasing chest pain on exertion and shortness of breath with physical activity. The symptoms need appropriate clinical assessment and cannot be diagnosed on the basis of case-study information alone.

CHD can also affect a person's psychological and social wellbeing. A person may become anxious about having a heart attack or more chest pain. Symptoms may also impact physical activity, independence, employment, family life and quality of life.

Thus health education is an important factor in the prevention of CHD. Communities need clear advice on healthy eating, physical activity, a healthy weight, avoiding smoking and managing cardiovascular risk factors such as blood pressure and cholesterol (NICE, 2023).

There should also be health education and prevention programmes for different communities.

For example, Karia et al. (2025) undertook a systematic review examining NHS Health Checks among ethnic minority groups in the UK. The review found ethnic differences in uptake and suggested that not everyone with high cardiovascular risk was taking full advantage of NHS Health Checks.

The study found that just providing a service does not guarantee equal participation. Public health services also need to think about how different communities engage with prevention programmes.

The benefits to the individual and to society must be taken into account in public health strategies. HM Treasury Green Book (2026) says government appraisal should be based on robust evidence and should consider the costs, benefits and risks of the different options.

Conclusion

To conclude, CHD is an important public health problem that needs to be measured, monitored and controlled.

Public health professionals use incidence, prevalence and mortality to understand the burden of CHD. Healthcare records, national statistics and cardiovascular risk assessments can be used to track change over time and identify who is at increased risk. Evidence suggests that rates of hospital admission for CHD have fallen substantially in England in the last 20 years. However, inequalities between local areas still remain (OHID, 2025).

Hence, prevention, early identification of risk factors, appropriate healthcare intervention and health education are required to control CHD. Public health strategies should also be monitored and evaluated to assess their effectiveness and whether they are reaching the communities that need them.

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