



## **UNIVERSITY OF WALES TRINITY SAINT DAVID**

### **Introduction to Public Health**

### **Coronary Heart Disease (CHD) – Group Discussion Assignment**

Module Code: LCHS 4008

Module: Introduction to Public Health

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## Introduction

Coronary heart disease (CHD) (sometimes called ischemic heart disease (IHD)) develops when fat accumulates. They amass in the coronary arteries and block blood flow to the heart muscle. CHD may induce angina HEART ATTACKS, CHEST PAIN AND BREATHLESSNESS. British Heart Foundation 2026 WHO 2026 Epidemiology is the study of the factors that determine the occurrence of illness in populations, the distribution of disease in time, space and persons, and the change in the patterns of the disease.

Incidence: New instances in a given time Prevalence=People living with a can at any time declare There are about 2.3 million people in the UK living with CHD (British Heart Foundation, 2026). In 2024/25, an estimated 1.9 million patients in England had a documented GP diagnosis of CHD (OHID, 2025). These statistics are based on various techniques and refer to different populations and are thus not directly comparable. An examination of Global Burden of Disease 2021 data found around 254 million people throughout the world living with IHD, and 31.9 million additional cases in 2021.

The age adjusted incidence rate was 373 new cases for per 100,000 individuals. These are projected worldwide figures and not the GP registration number (Liu et al., 2025) In 2021, IHD was responsible for almost 9 million deaths (WHO, 2026). mortality, incidence and prevalence are separate measures of the burden of illness and should not be baffled. Typical symptoms are angina (chest pain) or angina like discomfort, shortness of breath and occasionally agony spreading to the arm, mouth, or back Smoking, high blood pressure, high are risk factors. High cholesterol, diabetes, unhealthy diet, little exercise.

Family history and older age are elements that cannot be changed (NICE, 2023; British Heart Foundation, 2026). CASE STUDY Mr Ahmed is a 67-year-old non-smoking ex-truck driver. His brother. His brother suffered a stroke when he was 68 years old and also complains of increased chest discomfort on exertion and over a period of six weeks. 12. These symptoms are an indication for prompt clinical assessment of the case study does not diagnose CHD. This topic concerns monitoring, tracking of CHD... and impact of disease on communities and its management.

## Measuring CHD in populations

Definitions for incidence and prevalence are provided in the Introduction. Measurement helps public health specialists to know the burden of CHD in varied populations. Incidence is measured as the number of new cases occurring in a certain period of time, related to the population at risk. Prevalence is the number of people who have a condition. Mortality data indicate the number of deaths associated with CHD. The burden of CHD may be assessed using GP records, hospital data, death registrations and demographic surveys (OHID, 2025).

It is anticipated that 2.3 million individuals in the UK are living with CHD (British Heart Foundation, 2026). This shows how big an impact CHD still has on people, families, communities and healthcare services across the UK.

The burden is considerable also at the global level. Liu et al. (2025) estimated that more than 254 million individuals were living with IHD globally in 2021 based on the Global Burden of Disease 2021 data, with an estimated 31.9 million incident cases. The age-standardised incidence rate was around 373 new cases per 100,000 population. Almost 9 million individuals died from IHD in 2021 as well (WHO, 2026).

These data indicate that CHD/IHD is not only a public health problem in the UK but also a global health problem. Standardized rates are especially helpful for comparing countries, as countries differ in size and age structure of their populations.

But comparisons throughout the world are limited. Health systems, access to diagnosis and data collection and recording differ from nation to country. The figures from Liu et al. (2025) are modeled estimates at a global level, but the UK figures may draw on health service records and other country data. Therefore, figures from multiple sources should be evaluated carefully, not compared immediately.

A combination of incidence, prevalence and death statistics together with data on healthcare and demographics provides a more complete awareness of the burden of CHD. Such data can also enable public health officials to pinpoint groups in most need, to plan services, to allocate finances, and to assess if preventative strategies are reducing CHD over time.

## **Monitoring and types of surveillance**

Monitoring is the systematic collection and analysis of health information for the purpose of detecting changes populations at higher risk and care gaps. Public health surveillance is the continuous, systematic gathering, analysis and interpretation of health information for action” (CDC, 2024). Passive surveillance is based on routine information from health providers. Hospital, GP diagnostics Records and death registrations may offer valuable routine data to enhance CHD monitoring. This strategy is very inexpensive, but can be subject to poor or inconsistent recordkeeping (CDC, 2025; OHID 2024).

Active surveillance is actively seeking information. For example, requesting procedures to inspect Local audit may help in case records indicate undetected CHD or cardiovascular risk factors discovery, involves more time and staff (CDC, 2024). Participating sentinel surveillance healthcare organizations provide specific information about health events. for example a sample of GP practices may track diagnosis of CHD or risk. factors in a timely manner. This is an application, not a declaration that a national sentinel CHD system exists. Data obtained at chosen sites may not represent the total population (CDC, 2012).

QRISK3 is recommended by NICE (2023) for predicting risk in persons without established cardiovascular disease. 10 year risk for eligible people 25 – 84 years of age Primary care data can help identify patients who require official review . Samarasekera et al. (2023) emphasize the need for a tailored dialog on cardiovascular risk and prevention. Risk ratings are valuable tools but professional judgment cannot be replaced. Mr Ahmed’s growing exertional chest discomfort and dyspnea necessitates expert evaluation more than just risk screening.

Community-level monitoring can show if preventative initiatives are reaching the most vulnerable and whether follow-up leads to better outcomes.

## **Controlling CHD: prevention, policy and evaluation**

The objective of primary prevention is to reduce the risk of developing CHD by means of a healthy diet, physical exercise, stop smoking, and keep your blood pressure, cholesterol and diabetes under control. Secondary prevention aims to decrease the incidence of recurrent cardiovascular events in people with established illness by appropriate therapy, rehabilitation and lifestyle support (NICE, 2023; Samarasekera et al., 2023). In England, there is the NHS Health Check project to try to identify risk of cardiovascular disease earlier.

Tanner et al. 19 (2022) reported greater detection of a number of disease and risk factors including elevated blood high blood pressure, cholesterol and diabetes. Participation was uneven, however, and most of the evidence was rated as being of very poor to average quality. It would be wrong of me to say that the It’s saved a certain number of heart attacks, for sure.” Uthman et al. (2025) evaluated data for medication and non-medicine remedies to main Prevention of Cardiovascular Disease Research aids the assessment of different drugs facts, not on a one-size-fits-all method.

NICE (2023) advocates lifestyle discussions and, when appropriate, drugs such as statins after collaborative decision making. And population policy matters, too. If education is not available, proper diet may not be sufficient. There is little chance of doing something". Research by the British Heart Foundation (n.d.) indicates a fall in Reducing salt intake to the recommended levels in the UK might prevent up to 135,000 extra instances of CHD by 2035. A quantifiable reduction, not a theoretical benefit in some case.

Should assess uptake, risk-factor management, new diagnoses, hospitalizations and programs by outcomes, results by deprivation, ethnicity and place. Much better. average can mask differences if disadvantaged individuals progress less.

### **Risk factors and impact on communities**

Individual and larger variables affect the risk of CHD. Smoking, immobility, diet, hypertension and cholesterol may be adjusted, but age and family history cannot." Choices are affected by income, housing, jobs, transit, language and availability to GP appointments and health services to varied populations (NICE, 2023; British Heart Foundation, 2026). The burden of CHD is not just on the affected person. At the communal level, an illness may entail extra time away from work job, diminish household income, increase unpaid care duties and put strain on the GP services, hospitals and heart rehabilitation.

Areas with higher admission may require increased access to services and targeted prevention (OHID, 2025). "Health education has to be open and inclusive. Practical measures provide information on the proper languages, culturally appropriate dietary guidance, inclusive physical exercise, smoking cessation support and routine health checks. NHS Health Check discrepancies by Karia et al. (2025) involvement with minority ethnic people Providing a service does not provide equitable access or uptake.

Mr Ahmed's story shows the importance of symptoms and personal circumstances, but one case cannot reflect the whole community." Numbers of populations and interaction with local inhabitants need to be able deliver services that are efficient and equitable.

### **Conclusion**

To summarize, coronary heart disease is still a serious public health problem in the UK and the world. Incidence, prevalence and mortality are key epidemiological variables that enable public health professionals evaluate the burden of CHD and analyze variations between populations and over time. But no one source gives the full picture and thus GP records, hospital admissions, death records and other demographic statistics need to be looked at collectively.

Monitoring and surveillance are also critical for detection of change in CHD, and for identification of groups at increased risk. Passive, active and sentinel surveillance all have their limits. Cardiovascular risk assessment incorporating QRISK3 if appropriate can also promote early detection and prevention, but risk scores need to be used in conjunction with professional judgment.

There is a need for primary and secondary prevention of CHD. Cardiovascular risk can be reduced by healthy nutrition, physical exercise, smoking cessation and control of high blood pressure, cholesterol and diabetes. Appropriate medicine, rehabilitation and NHS Health Checks may also help with prevention and treatment. But public health programs need to be reviewed to see whether they are effective and if they are reaching the populations that need them most.

CHD has a greater influence on communities, not just the individual sufferer. It can impact on work and household income, lead to increased unpaid care duties and raise demand on GP services, hospitals and cardiac rehabilitation. Social variables including impoverishment, housing, work, language and access to healthcare might all lead to inequities between groups.

Reducing the burden of CHD thus demands precise measurement, efficient monitoring, prevention, adequate treatment, inclusive health education and action on socioeconomic disparities. The success of a health system should not just be assessed on overall reductions in disease, but also on whether inequities are decreased and if groups at highest risk are getting better health.

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