

1. Summary

Although cardiovascular disease (CVD) has been identified as one of the leading contributors to the global disease burden, the number of reliable indicators for monitoring CVD and for which data are available on a comparable basis across European Union (EU) countries is currently limited.

Therefore, the aims of the European Cardiovascular Indicators Surveillance Set (EUROCISS) project were to define indicators for monitoring CVD and to recommend standardised methods for future data collection in the EU. The achievement of these aims will facilitate cross-country comparisons and will assist efforts to improve CVD prevention and control.

Specific project objectives included:

1. prioritise CVD of importance in public health;
2. identifying specific indicators for assessing morbidity;
3. developing recommendations for collection and harmonisation of data that can be easily applicable within member countries in order to obtain reliable and significant data for the periodic monitoring of CVD.

Objective 1 - prioritise CVD of importance in public health

In prioritising CVD of greatest interest, two criteria have been selected: high prevalence of disease, in terms of mortality, morbidity and disability; and the possibility of prevention, in terms of modifiable risk factors.

On the basis of these criteria, acute myocardial infarction/acute coronary syndrome, ischaemic heart disease, heart failure and cerebrovascular accidents are considered the most important CVD.

Objective 2 - Identifying specific indicators for assessing morbidity

Acute myocardial infarction/acute coronary syndrome (AMI/ACS)

Recommended indicators include mortality, hospital discharge rates, incidence/attack rates and case fatality. Only mortality and hospital discharge diagnoses are available for all countries. Information about incidence/attack rate and case fatality is available in some countries through population-based registers, usually implemented at the regional level. These registers are based on record linkage of mortality and hospital discharge diagnoses and apply some validation procedures.

Recently, sensitive serologic biomarkers have become available for the identification of very small myocardial infarctions that would not have been detected earlier. The application of new and more sensitive biomarkers criteria will potentially cause a rise in the myocardial infarction incidence and a fall in the case fatality rate.

Heart failure and Ischaemic Heart Disease

Heart failure is a frequent complication of myocardial infarction and hypertensive disease. Hospitalisation rates are not sufficient to evaluate the frequency of the disease, because heart failure

does not necessarily require routine hospitalisation. For this reason, the EUROCISS working group suggests review of GP medical records, health examination surveys or CVD surveys and the adoption of standardised criteria. If hospital discharge records are used, validation studies are recommended because heart failure can be found under other diagnoses.

Other indicators can be used as a proxy to measure the burden of the disease if integrated with other sources of information, e.g. national consumption of drugs used to treat heart failure and its complications. Among the recommended indicators, functional disability and quality of life are suggested in patients with Heart Failure (HF).

Prevalence of ischaemic heart disease is assessed by surveys, but information on important clinical measures is often lacking.

Cerebrovascular accidents

Recommended indicators for cerebrovascular accidents include mortality, hospital discharge rate, incidence/attack rate, case fatality and prevalence. Mortality and hospital discharge diagnoses are available for all countries. Information about incidence/attack rate and case fatality of stroke is available in some countries through population-based registers; prevalence is assessed by CVD surveys, health interview and health examination surveys (HIS/HES). Special surveys at 1 year follow-up of stroke patients are recommended to evaluate the functional disability and the quality of life.

Objective 3 - Developing recommendation for data collection

The list of the new recommended indicators is based on available data and can be generated over a relatively short period of time: these indicators are called *short-term implementation indicators*. Others, called *long-term implementation indicators*, need a longer period of time to be implemented; most of these indicators represent validated versions of the available and short-term indicators and require, for each country, the training of a dedicated team of epidemiologists to support their development.

Following the experience of many Northern European countries, it is also recommended that all medical and death records across Europe adopt a personal identification number (ID), which would allow an easier and more accurate record linkage among the different sources of information.

The application of the recommended indicators, validated through standardised methodology in all countries will result in the availability of reliable, valid and therefore comparable data on CVD morbidity at the European level.