Date last modification documentation sheet: 18-04-2012

Compared to previous version documentation sheet (16-04-2010) the following issues were adapted:
- New section on relevant policy areas added to the documentation sheet
- Issue added to work-to-do section: elaboration of detailed algorithm for this indicator

ECHIM Indicator name	**B) Health status** 24. Acute Myocardial Infarction (AMI)
Relevant policy areas	- Health system performance assessment, quality of care, efficiency of care, patient safety - Non-communicable diseases (NCDs), chronic diseases - (Preventable) Burden of Disease (BoD) - (Planning of) health care services
Definition	Attack rate of acute myocardial infarction (non-fatal and fatal) and coronary death per 100,000 population.
Calculation	Age-standardized attack rate by sex in age group 35-74 in the population in a given calendar year, based on combined hospital discharge (ICD-10 codes I21, I22) and mortality data (ICD-10 codes I20-I25) (EUROCISS project recommendation). Attack rate counts the first and recurrent events, whenever there is at least 28 days between the onsets of the events. Age standardization should be done for men and women separately, according to the direct method, using the 1976 WHO European population as standard population (this is the method applied for the Eurostat diagnosis-specific morbidity statistics; see references (document principles and guidelines in CIRCA)).
Relevant dimensions and subgroups	- Calendar year - Country - Region (according to ISARE recommendations) - Sex - Age group: ➢ for age standardization data must be collected by 5 year age groups for ages 35-74 ➢ for data presentations it is required to present the following age groups; 35-64, 65-74 - Socio-economic status (see data availability)
Preferred data type and data source	Preferred data type: - Hospital discharge registries combined with causes of death registries - Alternatively: population-based AMI registers Preferred source: national data sources (no data available in international data sources according to preferred definition)
Data availability	No regular data collection for this indicator yet exists. AMI population-based regional registers are available in: Belgium, Denmark, Finland, France, Germany, Iceland, Italy, Norway and Sweden. In general these registers do not produce data on AMI by SES. The ISARE project has not collected regional data on AMI incidence/attack rate.
Data periodicity	See data availability.
Rationale	High-burden disease and cause of death. These diseases are preventable.
Remarks	- About 30-40% of cardiac attacks are fatal and patients die before reaching the hospital. As a consequence, only a combination of mortality data and hospital discharge records can provide a complete picture of the disease in the population. The calculation of this indicator therefore requires linkage of different data sources at subject level. Possibilities for this kind of linkage differ between countries due to a disharmonized legal framework regarding the possibilities to use personal health data for data protection purposes. - A wider group of diagnoses (ICD-10 codes) is proposed for the fatal cases than for the non-fatal cases, because it is often impossible to tell whether the death was caused by a myocardial infarction or other coronary event. - Incidence from a primary prevention point of view is more interesting than attack rate, although both bring very similar information. Incidence refers to person's first event. Ideally the denominator should be those who have not had an AMI before, but in practise this is not possible. The total population in the denominator gives a good approximation. Data for attack

	rate however are more widely available. - The preferred age range is limited because the disease is extremely rare in people younger than 35. People older than 74 are excluded as co-morbidity and identification of the cause of death in this group would complicate the interpretation of the results. - The accuracy of the mortality diagnosis of ischaemic heart disease varies considerably between countries due to differences in coding practices and differences in the number of autopsies performed.
References	- EUROCISS project: http://www.cuore.iss.it/eurociss/en/project/project.asp - EUROCISS definition AMI incidence/attack rate: http://www.cuore.iss.it/eurociss/en/indicators-eu/acute/10.htm - EUROCISS project, manual for operating population based AMI register: http://www.cuore.iss.it/eurociss/reg_Ima/pdf/ami-manual.pdf - Diagnosis specific morbidity statistics, Eurostat, public part of CIRCA: http://circa.europa.eu/Public/irc/dsis/health/library?l=/methodologiessandsdatasc/diagnosis-specific&vm=detailed&sb=Title - Health Indicators in the European Regions (ISARE) project: http://www.isare.org - Tunstall-Pedoe H, Kuulasmaa K, Amouyel P, Arveiler D, Rajakangas A-M, Pajak A, for the WHO MONICA Project. Myocardial infarction and coronary deaths in the World Health Organization MONICA Project. Registration procedures, event rates and case fatality in 38 populations from 21 countries in 4 continents. Circulation 1994;90:583-612.
Work to do	- Discuss with European Commission possibilities for adding this indicator to regular data collection processes - During the ECHIM data collection pilot, which was conducted during the Joint Action for ECHIM, it became clear that there was a need in the Member States for a detailed algorithm for computing this indicator → elaborate algorithm and add to indicator documentation