

Date last modification documentation sheet: 30-01-2012

Compared to the previous version documentation sheet (12-12-2011) the following issues were adapted:

- Data availability updated
- Remarks; explanation principal diagnosis clarified
- References: link to Health at a Glance report updated (2011 version)

Compared to the previous version documentation sheet (21-02-2011) the following issues were adapted:

- Name of indicator adapted: ischemic stroke instead of stroke
- Definition mentions the fact that this indicator is an OECD indicator and the OECD definition is added.
- Remarks about principal diagnosis and age-standardization are added.
- Primary diagnosis is replaced by principal diagnosis.

Compared to previous version documentation sheet (16-08-2010) the following issues were adapted:

- Major correction; ICD9 codes for AMI in calculation 410-414 → 410

<i>ECHIM Indicator name</i>	D) Health interventions: health services 79. 30-day in-hospital case-fatality of AMI and ischemic stroke
<i>Definition</i>	OECD indicator: admission-based AMI and ischemic stroke 30 day in-hospital (same hospital) mortality rate. This indicator is defined as the age-sex standardised percentage of people aged 45+ who die within 30 days of being admitted to a hospital in a specified year with principal diagnosis of: a) acute myocardial infarction (AMI) or b) ischemic stroke.
<i>Calculation</i>	Numerator: the number of deaths in the same hospital that occurred within 30 days of hospital admission with a principal diagnosis of AMI / ischemic stroke in a specified year. Denominator: the number of patients admitted to a hospital with a principal diagnosis of AMI / ischemic stroke in a specified year, including same day admissions. AMI diagnostic codes: ICD-10: I21, I22; ICD-9: 410. Ischemic stroke diagnostic codes: ICD-10: I63-I64; ICD-9: 433, 434, 436. The indicator is age-sex standardised according to 2005 OECD population (45+). Therefore 5-year age specific numerators and denominators are needed, separate for men and women: 45-49, 50-54, ..., 85+.
<i>Relevant dimensions and subgroups</i>	- Calendar year - Country - Sex
<i>Preferred data type and data source</i>	Preferred data type: - National hospital discharge records and hospital registers. Preferred data source: - OECD Health Care Quality Indicators Data.
<i>Data availability</i>	The 2011 Health at a Glance report (see references) presents 2009 data for 19 European countries (Austria, Belgium, Czech Republic, Denmark, Finland, Germany, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, United Kingdom. N.B.: for Portugal and Switzerland data from 2008 are presented, for Belgium, the Netherlands and Sweden from 2007). Age-sex standardized rates for both case fatality among patients with AMI and ischemic stroke are available for 2000, 2005 and 2009 (or nearest year) for 11 European countries.
<i>Data periodicity</i>	Biannually.
<i>Rationale</i>	AMI and ischemic stroke are important causes of death in European countries. Also the burden of disease and health care costs are considerable. Adequate and timely treatment can improve survival. This indicator measures the quality of the treatment of acute exacerbations of chronic cardiovascular diseases in hospitals.
<i>Remarks</i>	- This indicator is measured within the framework of the OECD Health Care Quality Indicators project.

	<ul style="list-style-type: none"> - OECD also collects data on case-fatality of hemorrhagic stroke. ECHIM chooses to focus on ischemic stroke for the following reasons: ischemic stroke represents 85% of all strokes, and moreover there is ample evidence that there is a relationship between quality of care and mortality due to ischemic stroke. For hemorrhagic stroke this relationship is less obvious, though there seems to be a correlation between case-fatality rates for ischemic and hemorrhagic stroke; that is, countries that achieve better survival for one type of stroke tend to also do well for the other type. Given the initial steps of care for stroke patients are similar this suggests that systems-based factors play a role in explaining the differences across by countries. - The principal diagnosis refers to the diagnosis that is finally established as (1) responsible for causing the hospitalisation or (2) the main reason for the hospital stay. Countries are given the opportunity to choose the data source which is most readily available in their context (admission or discharge databases). - OECD remarks that for comparability reasons, until the majority of countries is able to calculate the true 30-day case-fatality rate (so including both in-hospital deaths and death occurring outside of the hospital), 30-day in-hospital mortality is reported for all countries. - Ideally, rates would be based on individual patients. However, not all countries have the ability to track patients in and out of hospital, across hospitals or even within the same hospital because they do not currently use a unique patient identifier. Therefore, this indicator is based on individual hospital admissions and restricted to mortality within the same hospital. Now it is possible that patients are counted more than once (in case the patient is transferred to another hospital or the patient has several admissions for the same diagnosis within 30 days after the first admission). - This indicator is based on hospital discharge data only. Consequently, death that takes place before the patient reaches the hospital or on arrival in the hospital is not included in the indicator. Therefore, early recognition by patients themselves or by-standers, emergency retrieval times and quality of the emergency services may have an effect on case-fatality. For example, rigorous treatment of patients by the emergency services leads to more patients reach the hospital alive but part of them can ultimately not be stabilized and die within hours of admission. - If the case-fatality rates are age-standardised to the general 2005 OECD population, one gets total rates that are much lower than the crude rates, because the age distribution of the general population is very different from that of the diseased population. Using a standard population with a distribution approaching the diseased population leads to standardised rates that are closer to the crude rates. Within the OECD HCQI project truncation is used, at which only age categories of 45 years or older are included in the calculation of the standardized rates. This has a comparable effect as when using a diseased population as standard.
<i>References</i>	<ul style="list-style-type: none"> - OECD Health Care Quality Indicators project: http://www.oecd.org/health/hcqi - “Health Care Quality Indicators Project - Initial Indicators Report” (OECD Health Working Papers (no. 22/2006): http://www.oecd.org/dataoecd/1/34/36262514.pdf - Health at a Glance reports, including link to the data for the 2011 report (Excel sheets): http://www.oecdilibrary.org/oecd/content/serial/19991312 - The methodology applied to calculate the direct age and/or sex standardised rates and confidence intervals for the set of OECD HCQI indicators was derived from the “Statistical Notes No. 6: Direct Standardization (Age-Adjusted Death Rates) March 1995” from the Centers for Disease Control and Prevention/National Center for Health Statistics. For further information refer to http://www.cdc.gov/nchs/data/statnt/statnt06rv.pdf. - For countries participating in ECHI that are not a member of OECD, a data collection sheet in which the age-standardization calculation is incorporated is published at www.healthindicators.eu together with this documentation sheet.
<i>Work to do</i>	<ul style="list-style-type: none"> - Monitor developments OECD Health Care Quality Indicators; consider adapting indicator definition once adequate data for measuring in and out of hospital case fatality are available and/or once adequate data for measuring patient-based rather than admission-based indicators are available.