

Date last modification documentation sheet: 01-03-2011

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

- Major correction; calculation of current and former smokers based on EHIS (underlying EHIS questions to use) was corrected
- Addition; link to full text of reference Schultz et al (1991) was added. In this article the RRs to be used in the calculation of this indicator can be found.
- Addition; work to do-section; Discuss with SANCO/Eurostat possibilities for incorporation of (the calculation of) this indicator into regular data collection and publication processes.

<i>ECHIM Indicator name</i>	B) Health status
<i>Definition</i>	15. Smoking-attributable deaths Mortality caused by tobacco smoking. Death rates from combined, selected causes of death which are related to smoking, as per 100,000 of the population.
<i>Calculation</i>	<p>The smoking-attributable mortality (SAM) is to be calculated via the formula given below (Shultz et al., 1991) by using available mortality data and disease-specific relative mortality risks of current and former smokers, each compared to never-smokers (reference group). RRs are obtained from the Cancer Prevention Study II, which have been published and utilized in Schultz et. al. (1991) (see references). Finally, the rates of current, former and never-smokers are required. The formula provides the tobacco-attributable fraction (TAF) per cause of death, which is multiplied by the number of total deaths (per cause) to yield the tobacco-attributable mortality (TAM) per cause of death. The summed TAMs of all considered causes equal the smoking-attributable mortality (SAM) and shall be expressed as per 100,000 of the population under investigation.</p> $TAF = \frac{P_0 + (P_1 * RR_1) + (P_2 * RR_2) - 1}{P_0 + (P_1 * RR_1) + (P_2 * RR_2)}$ <p>TAM = TAF * number of death cases per cause; SAM = Σ TAMs (all causes)</p> <p>P₀ = prevalence of never-smokers; P₁ = prevalence of current smokers; P₂ = prevalence of former smokers; RR₁ = relative risk of death for current smokers; RR₂ = relative risk of death for former smokers.</p> <p>Prevalence data need decimal expressions to be used for TAF calculation (e.g. P₀ = 25% = 0.25; P₀+P₁+P₂ = 1). Disease categories according to ICD-10 definition to be included are: Neoplasms (C00-14, C15-16, C25, C32-34, C53, C64-68), Cardiovascular diseases (I00-09, I10-15 I20-51, I60-78) and Respiratory diseases (J10-18, J40-43, J44-46).</p> <p>Smoking prevalence data need to be obtained e.g. from EHIS; percentage of current smokers (SK.1[1-2]), percentage of former smokers (SK.1[3]+4[1]), percentage of never-smokers (SK.1[3]+4[2]).</p>
<i>Relevant dimensions and subgroups</i>	<ul style="list-style-type: none"> - Country - Calendar Year - Sex - Age groups: 35-64 years; 65+ - SES (by educational level ISCED 3 aggregated groups: 0-2; 3+4; 5+6; if available)
<i>Preferred data type and data source</i>	<p>Preferred data type: <u>Mortality data:</u> National population statistics (death register)</p> <p><u>Smoking prevalence data:</u> 1) HIS 2) microcensus</p> <p>Preferred source: <u>Mortality data:</u> - Eurostat, or national statistical offices (maintaining death register) in case Eurostat database does not contain the required data</p> <p><u>Smoking prevalence data:</u> - Eurostat (EHIS)</p>

<p><i>Data availability</i></p>	<p><u>Mortality data:</u> Eurostat collects data from 1994 according to the International Classification of Diseases (ICD) for all causes of death by age group and sex (and also by region). N.B.: Eurostat only disseminates data according to a shortlist of 65 causes. Germany delivers data only for the causes of death groups in this shortlist, so not for all causes of death.</p> <p><u>Smoking prevalence data:</u> BE, BG, CZ, DE, EE, EL, ES, FR, IT, CY, LV, HU, MT, AT, PL, RO, SI, SK, CH, NO and TR conducted a first wave of EHIS between 2006 and 2010. It is noted that not in all of these countries a full scale survey was carried out; in some only specific modules were applied, in others the full questionnaire was applied in a small pilot sample. It is expected that all EU Member States will conduct EHIS in the second wave, which is planned for 2014. The results of the first wave are expected to be published in two stages, 11 countries in October 2010, the remaining countries in April 2011. EHIS data are available by sex, 8 age groups (15-24/25-34/35-44/45-54/55-64/65-74/75-84/85+) and ISCED groups.</p>
<p><i>Data periodicity</i></p>	<p>EHIS will be conducted once every 5 years. The first wave took place in 2007/2010 (with some derogations in 2006) and the second wave is planned for 2014. A higher frequency may be useful if larger changes in smoking prevalences are expected.</p>
<p><i>Rationale</i></p>	<p>Smoking can cause many diseases which reduce both quality of life and life expectancy. Smoking is one of the best preventable health risk behaviours.</p>
<p><i>Remarks</i></p>	<ul style="list-style-type: none"> - Comparability depends largely on coding quality of death register data and accuracy of national smoking prevalence estimates. Further limitations of the formula applied above: <ul style="list-style-type: none"> o does neither include duration and type of smoking nor level of tobacco consumption o it is assumed that most of the current smoking is long term smoking o all persons who ever smoked –irrespective of type, time span, quantity and period since quitting- are regarded as former smokers o does not take account of various levels of ETS/SHS exposure of non-smokers and infants - Tobacco smoke directly attributes to mortality and morbidity of smokers and –to some minor extent- of non-smokers exposed to environmental tobacco smoke (ETS), also known as second-hand smoke (SHS). Policies on smoking address the active smokers by prevention measures and campaigns while ETS is mainly tackled by restrictions and bans on smoking in public areas. Periodical surveys on smoking prevalences allow for both identifying gaps and evaluating efficacy of prevention actions. - The above mentioned prevalence calculations are based on the first version of the EHIS questionnaire, as used in the first EHIS wave (2007/2010). The EHIS questionnaire will be revised; hence adaptations to the EHIS question underlying this indicator may occur in the second wave (planned for 2014). - EHIS also covers ETS/SHS exposure of responders (SK.6-8) but data on infant ETS/SHS exposure cannot be derived from EHIS and are generally difficult to obtain; indicator will have to focus on active smoking (history) and adults only. - EHIS-based estimates may be influenced by reporting biases and sampling related biases. Therefore they may not be an adequate reflection of the current situation in a country, and other estimates may be better for this purpose (see: Preferred data type). However, as a common methodology is underlying the gathering of EHIS data, they might suit the purpose of international comparison. - The legal basis for EHIS is regulation (EC) No 1338/2008 of the European Parliament and of the Council of 16 December 2008 on Community statistics on public health and health and safety at work. This is an umbrella regulation. Specific implementing acts will define the details of the statistics Member States have to deliver to Eurostat. An implementing act on EHIS is expected to come into force in 2014.
<p><i>References</i></p>	<ul style="list-style-type: none"> - CDC (2004) Smoking-attributable mortality, morbidity, and economic costs (SAMMEC): adult and maternal and child health software. Atlanta, GA: US Department of Health and Human Services, CDC - CDC (2005) Annual Smoking-Attributable Mortality, Years of Potential Life Lost, and Productivity Losses - United States, 1997—2001, Morbidity and Mortality Weekly Report (MMWR) July 1, 2005 / 54(25); 625-628

	<p>(http://cdc.gov/mmwr/preview/mmwrhtml/mm5425a1.htm)</p> <ul style="list-style-type: none"> - Peto R, Lopez AD, Boreham J, Thun M, Heath C (1994) Mortality from Smokers in Developed Countries 1950-2000. Oxford University Press, New York - Cancer Prevention Study II; Public Health Service, Centers for Disease Control, Office on Smoking and Health: Reducing the health consequences of smoking: 25 years of progress: a report of the Surgeon General. DHHS Publication No. (CDC) 89-8411, Rockville, MD, 1989. - Shultz JM, Novotny TE, Rice DP (1991) Quantifying the disease impact of cigarette smoking with SAMMEC II Software. Public Health Rep, 106; 326-33: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1580242/pdf/pubhealthrep00190-0104.pdf - John U, Hanke M (2003) Tobacco- and alcohol-attributable mortality and years of potential life lost in Germany. Eur J Public Health 13: 275-277 - EHIS standard questionnaire (version of 11/2006, used in first wave): http://ec.europa.eu/health/ph_information/implement/wp/systems/docs/ev_20070315_ehis_en.pdf - Regulation (EC) No 1338/2008 of the European Parliament and of the Council of 16 December 2008 on Community statistics on public health and health and safety at work: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:354:0070:0081:EN:PDF
<i>Work to do</i>	<ul style="list-style-type: none"> - EHIS module SK could be refined - Check Eurostat, WHO for further/alternative data sources on smoking prevalences (e.g. microcensus, special surveys) - Monitor EHIS/Eurostat developments - Discuss with SANCO/Eurostat possibilities for incorporation of (the calculation of) this indicator into regular data collection and publication processes.