



METHODOLOGICAL EXPLANATION

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DEATHS

This methodological explanation relates to the data releases:

- Deaths, Slovenia, annually (First Release)
- Deaths, detailed data, Slovenia, annually (Electronic Release)
- Demographic events, Slovenia, quarterly (First Release)
- Births and deaths, Slovenia, monthly (Electronic Release)



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1 PURPOSE

To provide data on deaths and natural increase of population for working out appropriate demographic, social, health and other policies at the national level and at lower territorial levels.

The key statistics include:

- number of deaths by sex and age and number of deaths per 1,000 population
- mean age at death
- cause of death
- life expectancy
- infant mortality per 1,000 live births

2 LEGAL FRAMEWORK

- [Annual Programme of Statistical Surveys \(LPSR\) \(only in Slovene\)](#)
- [National Statistics Act \(OJ RS, No. 45/95 and 9/01\)](#)
- Regulation (EU) No 1260/2013 of the European Parliament and of the Council of 20 November 2013 on European demographic statistics (CELEX: 32013R1260).

3 UNIT DESCRIBED BY THE PUBLISHED DATA

The unit described by the published data are deceased persons. Deceased persons are studied according to age, sex, cause of death, marital status, educational attainment, activity status and territorial area.

4 SELECTION OF OBSERVATION UNIT

The unit described by the published data are deceased persons. Coverage is complete: all deceased persons who died in the reference year (from 1 January to 31 December) with usual residence in Slovenia.

5 SOURCES AND METHODS OF DATA COLLECTION

Data are collected monthly.

Data are collected with the survey Deaths (DEM-UMR) by using data from the following statistical sources:

- survey “Population structure” (DEM-PREB/ČL),
- survey “Socioeconomic characteristic of population and international migrants” (SEL-SOC)
- Statistical Register of Employment (SRDAP).

Data for the survey are obtained from administrative sources:

- Administrative register of the Ministry of the Interior; i.e. the Central Population Register (CRP), which is the central database with the most basic data on the population of Slovenia;
- Registration of death of the National Institute of Public Health. NIJZ is obliged to transfer the data of the previous year to SURS by 31 May.

6 DEFINITIONS

A deceased person is one whose evidence of life permanently disappeared any time after he/she was live-born.

A dead infant is a child whose evidence of life permanently disappeared any time after he/she was live-born and has not yet completed the first year of age.

Cause of death is the illness or injury which caused death or contributed to death, and the circumstance of the accident or violence which caused such injury.

The basic cause of death is/are:

- the illness or injury which caused the sequence of events which led directly to death,
- the circumstances of the accident or violence which caused the fatal injury.

External cause of death are circumstances or violence which caused the fatal injury.

Violent death is death which is a result of an accident (all kinds of traffic accidents, accidental falls, drowning, fire accidents, firearms accidents, etc.), suicide or homicide.

Educational attainment is the highest publicly verified education that a person achieves by successfully finishing a verified educational or study programme. A publicly verified education can also be obtained in other ways, e.g. by successfully finishing a master craftsman, foreman or head clerk exams. Educational attainment is demonstrated by an official document (certificate, diploma, etc.).

Residence is the settlement of permanent or temporary residence of a person at which the person is counted as a resident.

Natural increase is the difference between the number of live births and the number of deaths for a given area in the calendar year.

Deaths per 1,000 population is the ratio between the number of deaths in the calendar year and the same midyear population, multiplied by 1,000.

Infant mortality per 1,000 live-born children is the ratio between the number of infant deaths in the calendar year and the number of live born children in the same year, multiplied by 1,000.

Mean age at death is a weighted arithmetic mean of the age of a given group of population (deceased persons). It is calculated from absolute data. In calculation the means of age classes are taken into consideration as weights.

Age-specific mortality rate is the ratio between the number of deaths of persons of a given age in the calendar year and the midyear population of the same age in the same year, multiplied by 1,000.

Life expectancy is the average number of years to be lived by a person, aged exactly x years, if the mortality by age during his/her lifetime remains the same as the values of the life tables for the observed year.

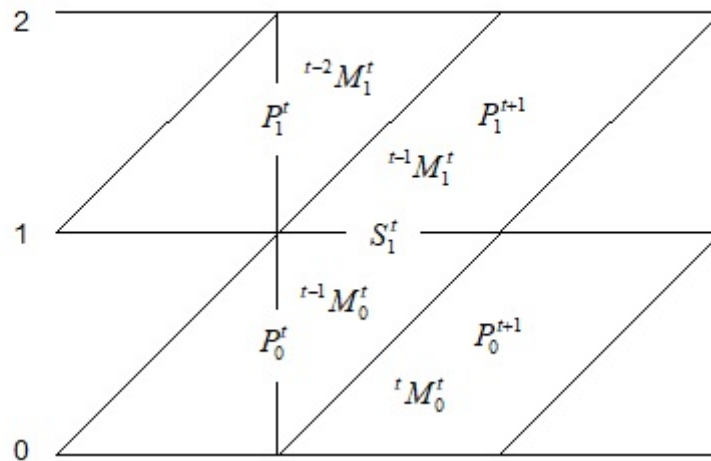
Life table is a tabular presentation of the intensity of dying and its distribution by age. The calculated values are comparable in time and space.

The probability of dying is the ratio between the number of the dead aged between x and $x+1$ and the number of the living aged x . It represents the basic quantity of the life table from which other quantities are derived. The crude probability of dying (${}_nq_x$) is the ratio between the observed number of the dead aged between x and $x+1$ and the observed number of the living aged x .

Excess mortality is the excess number of deaths compared to the average number of deaths between 2015-2019.

Lexis diagram

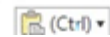
Chart 1: Lexis diagram with the data about newborns and deaths by age, calendar year and the year of birth



${}^tM_x^{t+1}$ = number of deaths at age x , died in the year $t+1$, being born in the year t .

P_x^t = number of people aged x to $x+1$ at the beginning of the calendar year t .

S_x^t = number of surviving people aged exactly x years in the calendar year t (the number of people that have in the calendar year t their x -th birthday).



The method of the age-period probabilities of dying is the method used for the construction 2007 life table for population of Slovenia. It builds upon the data from one calendar year only.

In general, ${}_nq_x$ is calculated as:

$${}_nq_x = f_x + f'_x - f_x \cdot f'_x; \text{ whereby } f_x \text{ and } f'_x \text{ are defined as: } f_x = \frac{{}^tM_x}{P_x^{t+1} + {}^tM_x} \text{ in } f'_x = \frac{{}^{t-1}M_x}{P_x^t}.$$

The same formula was used also for the age 0.

The probability of surviving (${}_np_x$) is calculated as: ${}_np_x = 1 - {}_nq_x$

The number of persons surviving (l_x) is the number of survivors at each birthday out of 100,000 live births.

The number of deaths (${}_nd_x$) is the difference between two successive values of the quantity l_x , thus ${}_nd_x = l_x - l_{x+1}$.

The number of person-years (${}_nL_x$) is the total number of years lived at individual age. In general, ${}_nL_x = \frac{l_x + l_{x+1}}{2}$. This formula assumes even distribution of deaths between age x and $x+1$. However, this assumption is not acceptable for the age 0. Since infant mortality is much higher in early stages than later on, the 50:50 ratio was replaced with 10:90, which is the ratio valid for developed countries with low infant mortality rates. $L_0 = 0,1 \cdot l_0 + 0,9l_1$

The total number of person-years (T_x) is the total number of years lived from age x to death:

$$T_x = \sum_x L_x.$$

Life expectancy (e_x) is the average number of years a person aged x years can expect to live assuming that mortality rates by age will remain unchanged since the year of observation. Life expectancy is calculated as: $e_x = \frac{T_x}{l_x}$.

7 EXPLANATIONS

7.1 CLASSIFICATIONS

Data at lower territorial levels are published in accordance with the Nomenclature of Territorial Units for Statistics NUTS (to the NUTS 3 level) and the Standard Classification of Territorial Units SKTE (to the SKTE 7 level)

<http://www.stat.si/statweb/Methods/Classifications>

Data on educational attainment are published in accordance with the Classification of types of educational activities/qualifications KLASIUS-SRV (to the level of sublevels

<http://www.stat.si/StatWeb/en/Methods/Classifications>

7.2 DATA PROCESSING

DATA EDITING

Data were edited with the combination of systematic corrections, individual corrections and imputation procedures. The following imputation methods were used: **logical imputations and hot-deck imputations**

For more, see the general methodological explanations [Statistical data editing](#).

WEIGHTING

Weighting was not performed.

SEASONAL ADJUSTMENT

Seasonal adjustment is not applicable.

7.3 INDICES

Indices are not published.

7.4 PRECISION

The precision is not calculated.

7.5 OTHER EXPLANATIONS

The NIJZ receives data on deaths from the administrative units on the forms Medical certificate of death filled in by a doctor (coroner). The observation unit is a deceased person.

In accordance with the technical protocol, SURS receives from the NIJZ the final annual database of deaths with all variables no later than 31 May of the current year for the previous year (for the observed year) and it combines them with ECRP data.

The data from the "Deaths" survey refer to the population of Slovenia according to the current statistical definition.

Demographic indicators per 1,000 population (natural increase / net migration / total increase) are calculated from absolute data and are due to rounding not always equal to the sum/difference of corresponding indicators.

8 PUBLISHING

- SiStat Database: Population – Births and deaths – [Mortality](#); absolute data and indicators are published at different territorial levels (NUTS, SKTE). KLASIUS-SRV classification is used for education.
- SiStat Database: Population – Births and deaths – [Causes of death](#); absolute data and indicators are published at different territorial levels (NUTS).
- SiStat Database: Population – Births and deaths – Mortality – [Life expectancy](#); absolute data and indicators are published at different territorial levels (NUTS).
- SiStat Database: Population – Births and deaths – [Natural change and total increase of population](#); absolute data and indicators are published at different territorial levels (NUTS, SKTE).
- SiStat Database: Population – Population number and structure – [Basic population data](#); absolute data and indicators are published at national level.
- First Release (Population, Births and deaths): “Deaths, Slovenia, annually”
- First Release (Population, Births and deaths): “Deaths, Slovenia, monthly”
- Electronic Release (Population, Births and deaths): “Deaths, detailed data, Slovenia, annually”
- First Release (Population, Births and deaths): “Demographic events, Slovenia, quarterly”
- Electronic Release (Population, Births and deaths): “Births and deaths, Slovenia, monthly”
- [Statobook](#)
- EUROSTAT (Statistical Office of the European Union)
- United Nations (UN)
- The Organisation for Economic Co-operation and Development (OECD)

9 REVISION OF THE DATA

9.1 PUBLISHING OF PRELIMINARY AND FINAL DATA

Data on deaths are published monthly and quarterly. They are provisional for all observation periods in the reference year until final data for the previous year are published.

Data for months and quarters are provisional because a small number of events that are the data source for demographic statistics are recorded in

administrative records later than they are for each quarter taken over from the data source by SURS.

Final data on deaths are published six months after the reference year. Changes between provisional and final data are usually small.

Publishing of provisional and final data is planned. Due to the needs of users for timely information, provisional data are published that meet the criteria of the quality of official statistical data but do not meet the quality that can be met with complete coverage. Data are revised when recent, more complete and better data can significantly contribute to the quality of data-based decision-making.

9.2 FACTORS INFLUENCING COMPARABILITY OVER TIME

Data on deaths from 2008 onward are prepared according to the new, internationally comparable statistical definition of population. According to this definition, the population of Slovenia consists of persons with registered permanent and/or temporary residence in Slovenia who live or intend to live in Slovenia for one year or more and are not temporarily absent from Slovenia for a year or more.

Methodological explanation on revision of statistical data is available on

<http://www.stat.si/dokument/5299/RevisionOfStatisticalDataMEgeneral.pdf>.

10 OTHER METHODOLOGICAL MATERIALS

Methodological materials on SURSs website are available at <https://www.stat.si/statweb/en/Methods/QuestionnairesMethodologicalExplanationsQualityReports>.

- Questionnaire:
 - SURS does not collect data for this survey by using a questionnaire.
- Methodological explanations:

<http://www.stat.si/statweb/en/Methods/QuestionnairesMethodologicalExplanationsQualityReports>