

# About Sweden Data on Causes of Deaths

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## Part 1 – Vital statistics and population censuses

### 1. Death Count Data

#### Source of data

Cause-of-death statistics are published and distributed by the National Board of Health and Welfare (NBHW) which is part of the national statistics office of Sweden. A single electronic file of aggregated death counts by calendar year of occurrence, sex, age, and medical cause for all years from 1952 to 2012 was provided to the HMD by the National Board (see Appendix 1 for details). Updated data for years 2011-2012 and new data for 2013-2020 were downloaded from the World Health Organization Mortality Database (<https://www.who.int/data/data-collection-tools/who-mortality-database>).

#### Specific Details

Before WHO introduced a specific category for HIV-AIDS in ICD-10, Statistics Sweden allocated all deaths from this disease to ICD-9 category 279.5 (AIDS) and 279.6 (Other HIV-related conditions).

#### Raw data treatment

While applying age-specific quality test one inconsistency was detected. Consequently, one cause Q00.2 (iniencephaly) in 2005 and one cause Q00.0 (anencephaly) in 2010 were recoded into Q89.9 (congenital malformation, unspecified) since this disorder is particular for newborn and cannot be attributed to older ages (see appendix 3).

Finally, the number of non-UCD (underlined causes of death) were recorded into target cause as shown in appendix 4 since these causes may not be considered as principal cause of death.

#### Comparison with the all-cause death counts

The source of statistical information for the all-cause mortality series in the HMD, that is the National Central Bureau of Statistics (or Statistics Sweden) is not the same as that for the cause-specific information, that is currently the National Board of Health and Welfare. There are some relatively small discrepancies between the two sources due to delays in registering the cause of death for a sizeable number of deaths (usually less than 100 a year but up to 500 in 2004 for instance – see appendix 2 for the exact numbers by year). Those are typically

deaths requiring an autopsy or legal investigation before an official cause of death can be determined.

## Part II –information on CoD coding

Sweden was not only a pioneer in the continuous and national collection of vital statistics (starting in 1749) but, from the very beginning, deaths were classified by medical cause, in addition to sex and age (Rogers, 1999). Initially, cause-of-death statistics were compiled by the clergy from their parish registers but, when the National Central Bureau of Statistics was established, in 1859, the statistics were to be based on individual death certificates filled by a physician in all towns and cities. This requirement was only very slowly extended to the whole country, a process not completed before 1971 (Ibidem). Starting well before all other countries, Sweden had to build its own cause-of-death classification scheme and, though well informed about international developments, the country did not adopt the International Classification of Diseases (ICD) as published by the World Health Organization until 1949.

Since then, and starting with the 6th Revision of the ICD, Sweden has implemented all successive ICD revisions up to the 10th one, currently in use. Table 1 presents the periods of implementation of each ICD revision in the country. Death statistics are published by the underlying cause of death defined as the disease that directly lead to death. The exact definition adopted by the Swedish vital statistic system follows international recommendations. It is « (a) the disease or injury which initiated the train of events leading directly to death, or (b) the circumstances of the accident or violence which produced the fatal injury » (World Health Organization, 1975).

**Table 1. Periods of implementation of each ICD revision in Sweden**

ICD Revision	Years Covered
6 <sup>th</sup>	1949-1957
7 <sup>th</sup>	1958-1968
8 <sup>th</sup>	1969-1986
9 <sup>th</sup>	1987-1996
10 <sup>th</sup>	1997-present

Implementation of the ICD was a major advance in the comparison of mortality trends by cause across countries. However, the ICD is periodically revised to account for the identification of new diseases (HIV/AIDS, SIDS, or Alzheimer to mention just a few recent

examples), improved diagnosis and scientific accuracy of disease classification, and progress in medical knowledge. Though undoubtedly necessary, these revisions introduce disruptions in the series of mortality rates by cause, which are at times very significant. An automatic report illustrating such disruptions for each HMD cause-of-death category in Norway is available for review by the user at [www.mortality.org/hmd/NOR/SWE/CODdiagnosticsMain.pdf](http://www.mortality.org/hmd/NOR/SWE/CODdiagnosticsMain.pdf).

## **REFERENCES**

Rogers, John. (1999). "Reporting Causes of Death in Sweden, 1750-1950", *Journal of the History of Medicine and Allied Sciences*, 52(2): 190-209.

## Appendixes

### Appendix 1. Death data used for the cause-of-death database

Period	Type of Data	Age Grouping	Comments	RefCode(s) <sup>†</sup>
1952-2010	Annual number of deaths, by sex, five-year age group and medical cause-of-death.	0, 1-4, 5-9, ..., 90+		30
2011-2018	Annual number of deaths, by sex, age group, and medical cause-of-death coded to the 4 <sup>th</sup> digit of the ICD.	0, 1-4, 5-9, ...,90-94, 95+,unknown		50

† The reference code is used in the raw data files (Input Database) to link data with sources.

### Appendix 2. Differences between the all-cause HMD series and the cause-specific series in the raw data

Year	HMD	COD	HMD-COD
1952	68270	68069	201
1953	69553	69382	171
1954	69030	68910	120
1955	68634	68517	117
1956	70205	70084	121
1957	73132	72919	213
1958	71065	70996	69
1959	70889	70808	81
1960	75093	74754	339
1961	73555	73516	39
1962	76791	76589	202
1963	76460	76376	84
1964	76661	76588	73
1965	78194	78088	106
1966	78440	78338	102
1967	79783	79682	101
1968	82476	82416	60
1969	83352	83303	49
1970	80026	80018	8
1971	82717	82734	-17
1972	84056	84051	5
1973	85640	85632	8
1974	86316	86305	11
1975	88208	88202	6
1976	90677	90671	6
1977	88202	88184	18
1978	89681	89669	12

Year	HMD	COD	HMD-COD
1986	93295	93268	27
1987	93307	93315	-8
1988	96743	96756	-13
1989	92110	92094	16
1990	95161	95141	20
1991	95202	95006	196
1992	94710	94607	103
1993	97008	96741	267
1994	91844	91450	394
1995	93955	93641	314
1996	94133	93815	318
1997	93326	93348	-22
1998	93271	93628	-357
1999	94726	95075	-349
2000	93461	93515	-54
2001	93752	93805	-53
2002	95009	95071	-62
2003	92961	93003	-42
2004	90532	91085	-553
2005	91710	91773	-63
2006	91177	91270	-93
2007	91729	91815	-86
2008	91449	91541	-92
2009	90080	90172	-92
2010	90487	90518	-31
2011	89938	89941	-3
2012	91938	91990	-52

1979	91074	91060	14
1980	91800	91795	5
1981	92034	92030	4
1982	90671	90666	5
1983	90791	90783	8
1984	90483	90467	16
1985	94032	94013	19

2013	90402	90505	-103
2014	88977	89062	-85
2015	90907	91002	-95
2016	90982	91071	-89
2017	91972	92075	-103
2018	92185	92250	-65

### Appendix 3. Recoded age-specific causes.

Year	Sex	Original cause	Target cause	Age 15-20
2005	1	Q002	Q899	1
2010	1	Q000	Q899	1

### Appendix 4. Recorded non-UCD codes.

Original cause	Target cause	Type
A09_	A099	obsolete
A90_	A979	obsolete
C80_	C809	obsolete
C832	C839	obsolete
C834	C839	obsolete
C843	C849	obsolete
C850	C859	obsolete
C912	C919	obsolete
C932	C939	obsolete
C945	C947	obsolete
C961	C969	obsolete
C963	C969	obsolete
C97_	C969	non-UCD
D463	D469	obsolete
D752	D759	obsolete
D760	D763	obsolete
F100	X45_	non-UCD
F110	X42_	non-UCD
F120	X42_	non-UCD
F130	X41_	non-UCD
F150	X41_	non-UCD
F190	X40_	non-UCD
G903	G909	obsolete
I150	I139	non-UCD
I220	I212	non-UCD
I221	I212	non-UCD
I228	I212	non-UCD

I229	I212	non-UCD
I252	I258	non-UCD
I48_	I489	obsolete
I848	K649	obsolete
I849	K649	obsolete
K350	K358	obsolete
K351	K358	obsolete
K359	K358	obsolete
K511	K519	obsolete
K85_	K859	obsolete
L89_	L899	obsolete
M725	M729	obsolete
N180	N189	obsolete
N188	N189	obsolete
O97_	O979	obsolete
P704	P969	non-UCD
R95_	R959	obsolete