

Reconstructed data published on the site is preliminary and might be slightly modified.

About Japan Data on Causes of Deaths

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Part 1 – vital statistics and population censuses

1. Death Count Data

Source of data

The successive organizations in charge of processing and distributing cause-of-death data in Japan have been the Cabinet Bureau of Statistics (from 1899 to 1943), the Department of Health Statistics at the Ministry of Welfare (1946-1949), the Division of Health Welfare Statistics at the Welfare Ministry (1950-1978), and the Statistics and Information Department at the Ministry of Health and Welfare (since 1979).

A single electronic file of aggregated death counts by calendar year of occurrence, sex, age, and medical cause for all years from 1950 to 2013 was provided to the HMD by the Statistics and Information Department via the National Institute of Population and Social Security Research. Updated data for years 1995-2013 and new data for 2014-2020 were downloaded from the World Health Organization Mortality Database (<https://www.who.int/data/data-collection-tools/who-mortality-database>).

It should be noted that, though the HCD all-cause series for Japan is based on statistics which include late-registered deaths, this is not the case for the cause-of-death series, hence some discrepancies between the original death counts in the two series. More specifically, deaths considered unexpected, accidental or suspicious are referred to a coroner who may order a post mortem or carry out a full inquest to ascertain the reasons for the death and rule out foul play. In most countries, the coroner can only register the death once an investigation has concluded as to the exact cause and circumstances of the death. It is not uncommon, at least for a small proportion of all deaths, for such registration delays to extend into several years. For Japan, however, there is a deficit of deaths in the all-cause datafile compared to the World Health Organization data files for all years 2001-2007 and an excess thereafter (see Appendix II for the exact numbers). For the sake of consistency, the death counts and death rates by cause are provided after adjustment for these late-registered deaths so that the series published on the website are in exact agreement.

Part II –information on CoD coding

Though vital statistics have been compiled since 1872 and vital registration has been required by law since 1898, the first standard death certificate was introduced in Japan in 1900. It included questions about the cause(s) of death and immediately follow the International Classification of Disease scheme in its First Revision. The ICD was further retrospectively applied to the classification of deaths from 1899. Throughout the 20th century, Japan has implemented each ICD revision in a timely manner, as indicated in Table 1. However, no mortality statistics (whether by cause or for all causes combined) were published in 1944-1945 because of the administrative disruption resulting from World War II and, for the same reason, data for 1946, though available, are incomplete and unreliable.

Death statistics are published by the underlying cause of death defined as the disease that directly leads to death. The exact definition adopted by the Japanese 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 Japan

ICD Revision	Years Covered
1 st	1899-1908
2 nd	1909-1922
3 rd	1923-1932
4 th	1933-1943
5 th	1946-1949
6 th	1950-1957
7 th	1958-1967
8 th	1968-1978
9 th	1979-1994
10 th	1995-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. The most accurate method to overcome the issue of classification change is to adjust the series using the results of bridge-coding studies, also called dual-coding studies.

Bridge-coding studies

Bridge-coding studies are regarded as the gold standard for the construction of consistent cause-of-death series. These studies consist into processing, coding, and classifying independently all, or only a representative sample, of the deaths for a given year in both the new revision of an ICD and the previous one. Their main purpose is to quantitatively assess the effects of ICD revisions on time series of mortality statistics.

Japan conducted bridge-coding studies to document the transition from the 7th to the 8th Revision of the ICD, from the 8th to the 9th Revision, and again from the 9th to the 10th Revision. However, because these studies were based on the statistics office condensed list of cause-of-death categories, the results are too rudimentary to be used to adjust the HMD series. Furthermore, the fairly substantial adaptation of the 10th Revision introduced in Japan in 2003 has not been documented by such a study.

Special case of the Japanese cause-of-death classification

As previously mentioned, Japan has implemented the International Classification of Diseases (ICD) from the very first Revision in 1899. The classification system was automated starting in 1989 and further improved in 1995, when a new death certificate was introduced. These changes led to some disruption in cardiovascular mortality trends as they came with a strong warning to discourage the physicians filling out death certificates to use non-specific cardiovascular condition as causes of death. More specifically, a footnote on the new death certificate bear the following mention: “Please do not write heart failure, respiratory failure, etc... as patients’ terminal condition.” Because this new request was widely advertised in advance of the 1995 change, it also affected death counts from heart disease in 1994.

As regards, Japan-specific cause of death categories, it should be noted that, to serve its own purpose, Japan has added sub-categories to existing ICD-10 categories by introducing a 5th digit.

Raw data treatment

Certain changes were applied to original data in order to insure the quality of the high level.

- First of all, Appendix 3 presents detected total cases of death with no age specification. These deaths have been redistributed randomly across all age intervals.
- There was one age-specific cause modified for 1998. One death detected in age group 15-20 years was reassigned from G20_ (disease of Parkinson) to G219 (secondary parkinsonism).
- 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.

Appendixes

This background information is relative to cause-of-death data for the period 1950-2016. For general information about mortality statistics in Japan, the reader should refer to the general Background and Documentation file [<http://www.mortality.org/hmd/JPN/InputDB/JPNcom.pdf>].

Appendix 1. Data used for the cause-of-death database

Period	Type of Data	Age Grouping	Comments	RefCode(s) [†]
1950-1994	Annual number of deaths, by sex, five-year age group and medical cause-of-death.	0, 1, 2, 3, 4, 5-9, ..., 100+, UNK		30
1995-2018	Annual number of deaths, by sex, age group, and medical cause-of-death coded to the 4 th 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
1950	904876	904876	0
1951	838998	838998	0
1952	765068	765068	0
1953	772547	772547	0
1954	721491	721491	0
1955	693523	693523	0
1956	724460	724460	0
1957	752445	752445	0
1958	684189	684189	0
1959	689932	689932	0
1960	706599	706599	0
1961	695644	695701	-57
1962	710265	710265	0
1963	670770	670770	0
1964	673067	673067	0
1965	700438	700437	1
1966	670342	670342	0
1967	675006	675006	0
1968	686555	686555	0
1969	693787	693787	0
1970	712962	712962	0
1971	684521	684521	0

Year	HMD	COD	HMD-COD
1985	752283	752283	0
1986	750620	750620	0
1987	751172	751172	0
1988	793014	793014	0
1989	788594	788594	0
1990	820305	820305	0
1991	829797	829797	0
1992	856643	856643	0
1993	878532	878532	0
1994	875933	875933	0
1995	922139	922139	0
1996	896211	896211	0
1997	913402	913402	0
1998	936484	936484	0
1999	982031	982031	0
2000	961653	961653	0
2001	969663	970331	-668
2002	981744	982379	-635
2003	1014296	1014951	-655
2004	1028019	1028602	-583
2005	1083236	1083796	-560
2006	1084100	1084450	-350

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1972	683751	683751	0	2007	1108089	1108334	-245
1973	709416	709416	0	2008	1142831	1142407	424
1974	710510	710510	0	2009	1142871	1141865	1006
1975	702275	702275	0	2010	1198014	1197012	1002
1976	703270	703270	0	2011	1254350	1253066	1284
1977	690074	690074	0	2012	1257406	1256359	1047
1978	695821	695821	0	2013	1269391	1268436	955
1979	689664	689664	0	2014	1274017	1273004	1013
1980	722801	722801	0	2015	1291457	1290444	1013
1981	720262	720262	0	2016	1308880	1307748	1132
1982	711883	711883	0	2017	1341543	1340397	1146
1983	740038	740038	0	2018	1363485	1362470	1015
1984	740247	740247	0				

Appendix 3. Detected total cases of death with no age specification

Year	Cause	Sex	Deaths
1995	W656	1	1
1995	X005	2	1
1995	X998	2	1
1995	Y114	2	1
1995	Y335	1	1
1996	Y266	2	1
1997	X806	2	1
1997	X845	1	1
1998	Y298	1	1
1999	X532	1	1
1999	X925	2	1
2000	W128	1	1
2000	X312	2	1
2000	X532	1	1
2000	Y339	2	1

Appendix 4. Recorded non-UCD codes.

Original cause	Target cause	Type
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