

## Part VIII Lists of causes of death for Japan

### 1 History

Japan has a long history of the list of deaths. The first classification in the country was set forth in 1875 with 11 items categorized anatomically. At the global level, the international list of death was adopted at a conference of the International Statistical Institute in 1893 and the first International congress for revisions in the international list was held in 1900, where the first ICD was adopted and it was agreed that it must be revised every 10 years. In the same year, Japan adopted the first revision of the ICD. Since then, we have been appropriately applying it to Japan's death statistics, with due consideration to the international classification.

The trends in death classification from 1899, when adjustments were made in Vital Statistics due to the establishment of the Family Registration Act, are shown in the table below.

(Reference) Trends in International Classification of Diseases and Death Causes

Conference for the Revision of the International Lists of Diseases and Causes of Death	Competent authority		Year of application in Japan
	International	Japan	
First 1900	International Statistical Institute	Cabinet Bureau of Statistics	( 1899 年 ~ 1908 年 )
Second 1909	International Statistical Institute	Cabinet Bureau of Statistics	( 1909 年 ~ 1922 年 )
Third 1920	International Statistical Institute	Cabinet Bureau of Statistics	( 1923 年 ~ 1932 年 )
Fourth 1929	International Statistical Institute and the League of Nations	Cabinet Bureau of Statistics	( 1933 年 ~ 1943 年 )
Fifth 1938	International Statistical Institute, and the League of Nations	Health Statistics Department, Prevention Bureau, Ministry of Health and Welfare	( 1946 年 ~ 1949 年 )
Sixth 1948	World Health Organization (WHO)	Statistical Survey Department, Ministry of Health and Welfare	( 1950 年 ~ 1957 年 )
Seventh 1955	World Health Organization (WHO)	Statistical Survey Department, Ministry of Health and Welfare	( 1958 年 ~ 1967 年 )
Eighth 1965	World Health Organization (WHO)	Statistical Survey Department, Ministry of Health and Welfare	( 1968 年 ~ 1978 年 )
Ninth 1975	World Health Organization (WHO)	Statistical Survey Department, Ministry of Health and Welfare	( 1979 年 ~ 1994 年 )
Tenth 1989	World Health Organization (WHO)	Statistical Survey Department, Ministry of Health and Welfare	( 1995 年 ~ 2005 年 )
Tenth 2003	World Health Organization (WHO)	tistics and Information Department, Ministry of Health, Labour and Welfare	( 2006 年 ~ 2016 年 )
Tenth 2013	World Health Organization (WHO)	Director-General for Statistics, Information Policy and Policy Evaluation, Ministry of Health, Labour and Welfare	( 2017 年 ~

The list of deaths adopted by Japan from 1995, was adopted in the 43rd World Health Assembly of the World Health Organization (WHO) in 1990. WHO recommended the use of ICD-10 to its member countries from 1993. Based on its International Statistical Classification of Diseases, Injuries and Causes of Death, Japan was using the detailed list of statistical classification of diseases by adding Japan-specific subdivisions to ICD-10 and a List of causes of death aggregating the Japanese classification (General

Affairs Agency Notification No. 75 of October 12, 1994). Japanese classification and list of causes of death based on Japan ICD-10 (Version: 2003) (Ministry of Internal Affairs and Communications Notification No. 1147 of October 7, 2005) was used from 2006 and Japanese classification and list of causes of death based on Japan ICD-10 (Version: 2013) (Ministry of Internal Affairs and Communications Notification No. 35 of February 13, 2015) is being used from 2017.

## **2 Underlying cause of death and rules for selection of cause of death**

Mortality tabulation is based on the Death Certificate. Therefore, to include in the Death Certificate all factors that lead to the death, the 20th World Health Assembly defined the cause of death to be mentioned in the Death Certificate as “The disease or injury which initiated the train of morbid events leading directly to a person’s death or the circumstances of the accident or violence which produced the fatal injury” in 1967. Before this, it was agreed in the Sixth Conference for Revision in 1948 that death causes for primary tabulation must be underlying causes of death.

WHO stated that from the perspective of death prevention, it is important to either break the train of pathological events or cure the disease at some point. The most effective purpose of public health is to prevent the causes through its initiatives. For this purpose, it defined underlying causes of death as follows

- ①The disease or injury which initiated the train of morbid events leading directly to a person’s death
- ②The circumstances of the accident or violence which produced the fatal injury

Furthermore, to select the underlying cause of death, WHO has established and recommends an international format of Death Certificates and a specified procedure for selection of death cause to its member countries. Japan follows these recommendations.

The procedure for selection of underlying death cause sets forth complicated rules for selecting the underlying cause of death. However, Japan applies these procedures in accordance to the circumstances noted in each death certificate prepared by the doctors and finally selects and decides the underlying cause of death for tabulation.

The format of the death certificate divides the column for noting the cause of death into columns I and II. Column I is meant for noting the train of pathological events that led to death, including the direct cause. Column II is meant for noting other major pathological events that gave rise to death.

If only one disease name is mentioned as the death cause in the death certificate, then the category which that disease belongs to may be considered the underlying cause of death. However, even if the disease name is same, the category may change depending on many conditions, such as age, gender, congenital or non-congenital conditions and details written in the surgery and anatomy column.

Therefore, the underlying cause of death is determined after grasping all the information noted in the death certificate.

If two or more disease names are mentioned in the death certificate, then only one underlying death cause must be selected for tabulation. If the name of the disease that directly caused death is noted at the top in column I of the death certificate and other diseases are noted correctly in the order of the causal relationship, then the category of the disease or injury mentioned at the bottom of column I is considered the underlying cause of death. However, details stated in the death certificates vary widely because the circumstances of death are different for each deceased person. Therefore, the final decision on the underlying cause of death is taken after confirming all information on a combination of disease names, place and column in which it is mentioned, complications, surgery or anatomy as well as place and circumstances of death, and judging or applying the procedure for selection of underlying death cause suited to the circumstances of each.

Apart from defining terminologies, format of death certificate and standards for selecting death cause for perinatal deaths, WHO also recommends preparing cross-tables for analyzing major diseases or conditions affecting children and mothers. Although Japan has not adopted the death certificate format recommended by WHO, we have added many of the items in the format into our death certificate and stillbirth certificate to create a cross-table as recommended.

For determining the cause for stillbirth, we decided to select the underlying cause by considering the child's and month's conditions as one from the time of the adoption of ICD-10. We also have prepared cross-tables for both child and mother by selecting the underlying death cause from their respective conditions.

Please refer to Japan ICD-10 (Version: 2013) Volume 1, 2 and 3 for detailed information on selection of underlying death cause and list of deaths.

### **3 Lists**

Based on the detailed list of statistical classification of diseases, injuries and causes of death for Vital Statistics (the detailed list of statistical classification of diseases, injuries and causes of death), the following lists are available for various purposes. These lists have been revised to incorporate Japan ICD-10 (Version: 2013) (January 2017). There are changes in classification codes and methods of selecting death cause in these revisions and it is important to note that a simple comparison with the lists used before 2016 is not possible.

#### **(1) The detailed list of statistical classification of diseases, injuries and causes of death**

The detailed list of statistical classification of diseases, injuries and causes of death used for Vital Statistics is based on further subdivisions added to the Japanese classification for the purpose of the Vital Statistics.

The subdivisions added to the international classification as Japanese classification

are represented by a small letter in the 5th digit place. The subdivisions added for Vital Statistics have a numerical in the 4th digit place and capital letter in the 5th digit place.

Detailed information about the classification is available in Final Data on e-Stat “Classification table” .

## **(2) List of death causes (Condensed list of causes of death ) for Japan**

To gain an overview of the composition of death causes in Japan, we have created lists based on the detailed list of statistical classification of diseases, injuries and causes of death while referring to WHO’ s list for death tabulation.

The classification of the causes of death includes causes that have led to deaths over a certain number or causes that interest the people of the country and researchers even though the number of deaths is small, while also paying due consideration to continuity and other factors. A 5-digit classification code has been set for the items. The first 2 digits follow the chapter structure of ICD-10, the third digit represents an intermediate classification integrating some items and the last 2 digits represent reference numbers.

Detailed information about the classification is available in Final Data on e-Stat “Classification table” .

Moreover, previous yearly trends are available under “Classification table” for 2017 (Note) (Volume 1 “Reference Table” of the Reports until 2016) in Final Data on e-Stat.

(Note) Refer to “1 Condensed list of causes of death for Japan” (p. 90).

## **(3) Selected list of selected causes of death for Japan**

For death causes in which there is high social interest, selections were made from the condensed list of causes of death and continuity with ICD-9 was also considered.

The selection of classification items is based on the top 15 diseases by number of deaths in the condensed list of causes of death. Moreover, malignant neoplasm, heart diseases, cerebrovascular diseases and accidents by external causes are further classified into subdivisions because of their social significance. The subdivisions for malignant neoplasm are based on the top 10 reasons of death by site and the sites for which cancer screening is conducted under Health Promotion Services. The subdivisions for heart diseases, cerebrovascular diseases and accidents by external causes were selected by considering causes that led to deaths more than a certain number.

Tuberculosis was added because of high social interest.

Detailed information about the classification is available in Final Data on e-Stat “Classification table” .

(Note) Refer to “2 Selected list of causes of death for Japan” (p. 92).

#### **(4) Table of yearly trends in causes of death**

The main purpose of this table is to observe the yearly trends in death cause. It was partially revised to include major causes of death in ICD-9, based on the trends in major death causes since 1899.

Detailed information about the classification is available in Final Data on e-Stat "Classification table" .

(Note) Refer to " 4 The change of the list for trends in main cause of death" (p. 87) and "3 List for trends in causes of death" (p. 93).

#### **(5) List of causes of infant deaths (Condensed list of causes of infant death)**

WHO recommends creating a list of death cause for infant death up to 5 years of age. The proportion of infant mortality up to 5 years of age is high in Japan and importance is being placed on medical and administrative measures to reduce infant deaths. Therefore, the list has been made for infant deaths only.

The selection of classification items is based on the same view as the condensed list of causes of death, but characteristics of infant deaths were also considered. Items such as "Malignant neoplasm" were simplified and "Diseases arising in perinatal period" and "Congenital malformation, deformation and chromosomal abnormality" were classified in detail. Asthma and sudden infant death syndrome were also added.

Detailed information about the classification is available in Final Data on e-Stat "Classification table" .

(Note) Refer to "4 List of causes of infant death" (p. 94).

#### **(6) List of infectious diseases**

Because the proportion of deaths due to infectious diseases kept decreasing, part of the infectious diseases were omitted from WHO' s list for death tabulation in ICD-10 (Version: 1990), which was applied in 1995, to adapt to the times and were similarly omitted from Japan' s condensed list of causes of death as well. However, the category was added again in the same year because there was a need to grasp the conditions related to infectious diseases.

For selecting the classification items, legal notification was made obligatory, and consideration was also given to grasping the trends in diseases requiring health measures and easy comparison with international data.

Moreover, the name of the category was changed to "Act on the Prevention of Infectious Diseases and Medical Care for Patients with Infectious Diseases" (Act No. 114 of 1998) (the Infectious Diseases Control Law) from 1999. The names are based on Enforcement Order for Infectious Diseases Act (Cabinet Order No. 420 of 1998), Regulation for Enforcement of the Infectious Diseases Act (Ordinance No. 99 of 1998 of the Ministry of Health and Welfare) and the Tuberculosis Prevention Act (Act No. 96 of 1951) and do not necessarily correspond with ICD-10. with Infectious Diseases

Act and.

Moreover, the categories were changed in 1999, 2003, 2007, 2008, 2012, 2013, 2015, 2016, 2017 and 2018 due to revisions in the Infectious Diseases Control Law and further revised due to the application of Japan ICD-10 (Version: 2003) in 2006 and Japan ICD-10 (Version: 2013) in 2017.

Detailed information about the classification is available in Final Data on e-Stat "Classification table" .

(Note) Refer to "5 List of infectious diseases" (p. 95).

#### **(7) Classification items used in leading causes of death and leading causes of infant death**

Major death causes were selected from the condensed list of causes of death and condensed list of causes of infant death.

Detailed information about the classification is available in Final Data on e-Stat "Classification table" .

(Note) Refer to "6 Categories for ranking of causes of death" (p. 98).

#### **(8) Classification of perinatal deaths and foetal deaths**

ICD-10 takes cause of both perinatal deaths and foetal deaths as the result of integrated child's condition and mother's one and choose one condition out of two for the decision of cause of deaths. In addition, the most serious condition for causing death is chosen from each side. It also would be possible to analyse the causal relation between two sides and product the cross table of mother-child condition.

Since ICD-9 we have been using the detailed list of statistical classification of diseases to determine cause of death because we do not establish original classification list for that.

Mother's condition: refer to P00-P04 and P99, P99 means nothing has wrong with mother's condition, of the detailed list of statistical classification of diseases, injuries and causes of death.

Child's condition: refer to the detailed list of statistical classification of diseases, injuries and causes of death except the above, though most are included in "Chapter XVI certain conditions originating in the perinatal period", "Chapter XVII congenital malformations, deformations and chromosomal abnormalities".

## Statistical classification systems of diseases and related health problems

- Systemic disorders
- I Certain infectious and parasitic diseases (A00-B99)
    - Intestinal infectious diseases (A00-A09)
    - Bacterial infection (A15-A49)
    - Infections with a predominantly sexual mode of transmission (A50-A64)
    - Other infections caused by spirochetes, chlamydia or rickettsia (A65-A79)
    - Viral infections (A80-B34)
    - Mycoses (B35-B49)
    - Protozoal and Helminthiases and other infestations diseases (B50-B89)
    - Sequelae of infectious and parasitic diseases (B90-B94)
    - Bacterial, viral and other infectious agents (B95-B98)
    - Other infectious diseases (B99)
  - II Neoplasms (C00-D48)
    - Malignant neoplasms (C00-C97)
      - Primary (C00-C75)
      - Secondary and unspecified sites (C76-C80)
      - lymphoid, haematopoietic tissue (Primary) (C81-C96)
      - Multiple sites (C97)
    - In situ neoplasms (D00-D09)
    - Benign neoplasms (D10-D36)
    - Neoplasms of uncertain or unknown behaviour (D37-D48)
  - III Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism (D50-D89)
    - Anaemias (D50-D64)
    - Coagulation defects, purpura and other haemorrhagic conditions (D65-D69)
    - Other diseases of blood and blood-forming organs (D70-D77)
    - Certain disorders involving the immune mechanism (D80-D89)
  - IV Endocrine, nutritional and metabolic diseases (E00-E90)
    - Disorders of thyroid gland, Diabetes mellitus and Disorders of other endocrine glands (E00-E35)
    - Malnutrition, Other nutritional deficiencies, Obesity and other hyperalimentation (E40-E68)
    - Metabolic disorders (E70-E90)
- Diseases by anatomical systems
- V Mental and behavioural disorders (F00-F99)
  - VI Diseases of the nervous system (G00-G99)
  - VII Diseases of the eye and adnexa (H00-H59)
  - VIII Diseases of the ear and mastoid process (H60-H95)
  - IX Diseases of the circulatory system (I00-I99)
  - X Diseases of the respiratory system (J00-J99)
  - XI Diseases of the digestive system (K00-K93)
  - XII Diseases of the skin and subcutaneous tissue (L00-L99)
  - XIII Diseases of the musculoskeletal system and connective tissue (M00-M99)
  - XIV Diseases of the genitourinary system (N00-N99)
- Childbirth, malformation, newborn diseases
- XV Pregnancy, childbirth and the puerperium (O00-O99)
    - Pregnancy with abortive outcome (O00-O08)
    - Complications of pregnancy predominantly in the antenatal period (O10-O48)
    - Complication codes related to labour, delivery and puerperium (O60-O92)
    - Other obstetric conditions, not elsewhere classified (O94-O99)
  - XVI Certain conditions originating in the perinatal period (P00-P96)
  - XVII Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)
- XVIII Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)
- Symptom and sign (R00-R69)
  - Abnormal results of studies (R70-R94)
  - Ill-defined and unknown causes of mortality (R95-R99)
- XIX Injury, poisoning and certain other consequences of external causes (S00-T98)
- Injuries to the different part of the body (S00-S99)
  - Injuries involving multiple body regions or to unspecified part of trunk, limb or body region (T00-T14)
  - Effects of foreign body entering through natural orifice (T15-T19)
  - Burns and corrosions (T20-T32)
  - Frostbite (T33-T35)
  - Poisoning by drugs, medicaments and biological substances and toxic effects of substances chiefly nonmedicinal as to source (T36-T65)
  - Other and unspecified effects of external causes (T66-T78)
  - Certain early complications of trauma (T79-T79)
  - Complications of surgical and medical care, not elsewhere classified (T80-T88)
  - Sequelae of injuries, of poisoning and of other consequences of external causes (T90-T98)
- XX External causes of morbidity and mortality (V01-Y98)
- Transport accidents (V01-V99)
  - Other external causes of accidental injury (W00-X59)
  - Intentional self-harm (X60-X84)
  - Assault (X85-Y09)
  - Event of undetermined intent (Y10-Y34)
  - Legal intervention and operations of war (Y35-Y36)
  - Complications of medical and surgical care (Y40-Y84)
  - Sequelae of external causes of morbidity and mortality (Y85-Y89)
  - Supplementary factors related to causes of morbidity and mortality classified elsewhere (Y90-Y98)
- XXI Factors influencing health status and contact with health services
- XXII Codes for special purposes

Note: Chapter XXI is not used in Vital Statistics.