

NOV 08 1979



Technical Papers

Number 2
August 1979

Vital Statistics System of Japan

International Institute for Vital Registration and Statistics

9650 Rockville Pike

Bethesda, Maryland 20014

U.S.A.

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FOREWORD

The strength of the Japanese vital statistics system is derived from its relationship to the KOSEKI or family registration system. The declarations of births, deaths and marriages serve to update the family composition in conformance with the family registration law. Because the value of the KOSEKI system is universally recognized in Japan, and used widely for the authentication of the relationship between the various members of the registered family, the registration of vital events is virtually complete.

Although the family register was established for social and legal purposes, it has been found to be an invaluable source of information for scientific studies. In particular, the family register provides a unique opportunity for positive identification of deaths occurring in cohorts selected for epidemiologic studies.

Operationally, the vital statistics system of Japan is probably one of the better registration mechanisms in the world.

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Vital Statistics System of Japan

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DEVELOPMENT OF VITAL STATISTICS IN JAPAN¹

History of counting vital events

The history of counting people and vital events in Japan goes back as early as 86 B.C. when an attempt was made to enumerate inhabitants in a census. The historical record shows also that in 645 A.D., during Emperor Kotoku's reign, a system of residents' registration was established, and births, deaths and marriages were reported regularly under the system.

These historical attempts were made to meet some administrative needs, such as taxation, manpower requisition, military conscription, etc. It is believed that the population coverage in these historical attempts was rather limited in that they excluded certain segments of the population, and the information collected was very fragmentary in most instances.

There are other records of similar attempts at population counts in the medieval ages. But in many instances, the area coverage was restricted, and the population covered was somewhat biased due to the discriminatory social system prevailing in those days in Japan. The ancient documentary materials are presently being used by scholars for the study of historical demography.

Emergence of modern data gathering system

With the changing social and economic systems, the usefulness of statistical data on vital events became more widely recognized by many governments. More specifically, from the early 19th century, many European countries keenly felt it necessary to gather statistical data needed for various administrative purposes.

Needs for statistical information, as such, in a modern nation, cover a wide variety of statistical data on numerous aspects of social and economic life of the people. Many governments conducted population censuses for the first time, in the modern sense of the term, to collect accurate data on the size and structural characteristics of the people.

For vital statistics, covering birth, death, marriage and divorce, a permanent arrangement of data gathering on a compulsory or legal basis was needed with a complete network covering the entire territory of the country. In many countries, the civil registration system was established to register vital events exclusively or in conjunction with the residents' registration. The civil registration system of this kind, in most cases, is operated on a mandatory basis through a permanent administrative set up covering the whole country.

The modern Meiji Government was established in Japan following the Meiji Restoration of 1868, and a thorough administrative reorganization took place throughout the country. In 1872, the family registration system was established to function as a permanent source of vital statistics in Japan.

As will be described in more detail in the chapter to follow, the family registration system (KOSEKI) is conducted by local administrative offices in charge of minor administrative subdivisions (cities, wards, towns and villages) to register a married couple and their unmarried child or children, and any change in family relationship among them, including the vital events of birth, death, marriage and divorce.

On the basis of the declarations of vital events made by notifiers, the local registrar is requested to prepare vital statistics schedules to be transmitted eventually to the central statistical organization for the compilation of vital statistics. This hierarchical channel of reporting vital events has been in effect without substantial change since the establishment of the family registration system in Japan.

Efforts of improving vital statistics

At the earliest period, vital statistics were limited only to birth and death statistics. Until 1882, only the total number of births and deaths by sex were derived from the records kept for the KOSEKI registers. In 1883, the Home Affairs Ministry Ordinance revised the statistical report forms to include marriages and divorces to be reported in addition to births and deaths.

Starting in 1876, the Public Health Bureau, Home Affairs Ministry, prepared and published the statistics on causes of deaths on the basis of death certificates completed by medical doctors. The Public

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¹ Based on Ryozauro Minami and associates (ed.): *Population Encyclopedia*, Heibonsha, 1957, Tokyo (in Japanese).

Health Bureau, Home Affairs Ministry, requested in 1880 that the statistical reports on birth, stillbirth (fetal death), marriage and divorce be prepared and submitted as a rule by the prefectural governors. This decentralized means of data collection characterized the early stages of development of vital statistics in Japan, although there were some minor organizational changes from time to time during this period.

In June 1898, the management of the family registration system was transferred to the Ministry of Justice, and in July of the same year, the Bureau of Statistics, Imperial Cabinet, took charge of compiling vital statistics on a full scale. The Bureau of Statistics established uniform "procedures on handling statistical forms pertaining to the data on vital statistics." The vital statistics schedule for births, stillbirths, deaths, marriages and divorces was formalized and stipulations were made to forward the completed schedule forms to the Bureau of Statistics every three months.

It should be noted that, since 1898, the operation of the family registration system for legal purposes was clearly separated from the preparation of statistics even in structural terms. At the same time, the tabulation of vital statistics was centralized, and the compilation of vital statistics at the prefectural level was abolished. In 1922, major revisions were made in the vital statistics system to improve the method applied.

Starting July 1926, the schedule for collection of the vital statistics forms was changed from a quarterly to a monthly basis. This time schedule was continued until the end of World War II. However, in 1944 intensive air raids all over the country hampered the operation of the vital statistics system. A good many records were destroyed, and vital statistics of Japan for the period 1944 to 1946 like the statistics in other subject matter fields is practically blank. In August of 1945, an Imperial Ordinance was promulgated to simplify reporting of vital statistics by requiring, for example, only a monthly prefectural summary report on the number of births, stillbirths and deaths by sex.

Recent development of vital statistics system

After the war, starting in July 1946, the heads of local administrative offices (city, ward, town and village offices) were requested to prepare daily reports on the occurrence of vital events in each locality, and to provide monthly reports based on these daily figures. The monthly reports were forwarded to the Bureau of Statistics through the prefectural governments. The monthly reports con-

tained the numbers of births, deaths, infant deaths, stillbirths, marriages and divorces. The tabulation of vital statistics data was decentralized again and simplified. Another important change brought about by the provisions of the new statute was that the declarations of births and deaths which were formerly made to the local administrative office of the individual's permanent domicile were now to be made to the administrative office of the place of occurrence of the event.

In September 1946, an Imperial Ordinance was enacted to provide a new legal basis for civil registration and vital statistics. In conformance with this Ordinance, the Ministry of Health and Welfare issued regulations for the reporting of stillbirths. New registration documents and statistical forms for the recording of information on vital events and procedures for making entries on these forms were prescribed. The items to be recorded were expanded, thus making more detailed data available. Also, the declaration form for family registration was revised to conform with the provisions of the new statute. With all these changes, the vital statistics system not only recovered from the effects of wartime deterioration, but emerged as a much stronger system. In June 1947, vital statistics was recognized as Designated Statistics No. 5 under the Statistics Law of Japan.

In September 1947, the responsibility for the vital statistics function was transferred from the Bureau of Statistics, Prime Minister's Office, to the Ministry of Health and Welfare, with the primary aim of furnishing vital statistics promptly as indices for health administration. With this transfer, a series of relevant revisions were made in the legislation regarding the vital statistics system. For example, the vital statistics schedules, which were formerly submitted by the local administrative offices to the Bureau of Statistics, were now to be forwarded to the Ministry of Health and Welfare through the health centers and prefectural health administrations. Also, the schedule, which was submitted formerly as a single copy, was now to be prepared in duplicate, one copy to be forwarded to the Ministry and the other to be kept at the health center for use in connection with its public health activities.

In December 1949, the vital statistics schedules were revised to bring them into conformity with the declaration forms under the Family Registration Law. The wording was unified in order to make it easier to complete the schedules. The forms were again modified when the Family Registration Law and declaration forms were revised in July 1952. This time, the items on the vital registration and certificate forms

underwent considerable change in an attempt to minimize the number of items and simplify the format.

The method of processing of vital statistics schedules collected by the Ministry of Health and Welfare improved gradually in the course of time. The tabulation of vital statistics was essentially a manual operation until April 1950, when it was mechanized for the first time by the introduction of the punch card system. The installation of the electronic computer system in 1967 made possible a high-speed processing of the data and production of more complex tables. The optical mark reading method was adopted in 1968 for processing vital statistics data. Consequently, it was necessary to modify the vital statistics forms from descriptive schedules to machine-readable form.

FAMILY REGISTRATION (KOSEKI) SYSTEM

Purposes of family registration and legal base

The objective of the family registration system in Japan is to register a family unit consisting of a husband and his wife and their unmarried child or children with the same family name, and to authenticate their relationship whenever necessary. This notarial system, known as the KOSEKI, puts on record in the public register any major change in family composition and relationship from birth to death for each person in the family. The registration record is legally valid as an authentication and anybody may request an extract or a full copy of the record. However, the mayor of the city or headman of the town or village may refuse the request for good reason, *e.g.*, to protect the privacy of the individual concerned. This restriction was provided by the revision of relevant provisions of the KOSEKI Law in May 1976.

The KOSEKI system is widely relied on by the public in general and is popularly utilized for exemplification of general family status. The KOSEKI system was uniformly established in all parts of the country by the KOSEKI Law which was promulgated in 1871 and put in force in 1872 for the purpose of registering factual information about the family. In 1898, the provisions of the KOSEKI Law were amended to put a greater stress on legal certification of the relationship between the various members of the registered family. The registration forms and declaration procedures were revised in 1915.

A drastic change in the KOSEKI system was made in 1947 in accordance with the provisions of the new Civil Law following the adoption of the new Constitution of Japan after World War II. The present

KOSEKI system is based on this revision of the KOSEKI Law which was enacted in 1948.

Under the new KOSEKI system, respect for the dignity of the individual and the essential equality of the sexes are stressed in contrast to the old system which placed emphasis on the family, its head and family kinship in a large family system. The unit of registration was changed from a "family" to a "couple" consisting of a husband and his wife and their unmarried child or children, and provided a new register for a newly married couple.

There is no longer registration of 2 or more couples or 3-stage generation (father-son-grandchild) in the present family registration book.

Outline of family registration system

The kind of declarations. The entry to a KOSEKI register is mostly made by a declaration. The kinds of declaration are: a) a "reporting" declaration which is based on the occurrence of a factual event, b) a "creative" declaration by which a new declared status becomes legally valid, and c) a declaration which has features of both reporting and creative types.

The reporting kind of declaration includes the declaration of births, deaths, annulment of marriage, divorce, disappearance of persons, naturalization, etc. The creative kind of declaration covers marriages, divorce-by-consent, voluntary recognition of paternity, etc. The kind of declarations having dual features is represented by the birth declaration pending the determination of nationality of the baby, the birth declaration of a legitimate child with the legal validity of recognition under Article 62 of the KOSEKI Law, etc.

The method of declaration. A declaration for the KOSEKI registration may be made orally or in writing. Official documentary formats are stipulated for the declaration of births, deaths, marriages and divorces. A declaration form can be submitted to local administrative offices, *viz.*, city, ward, town or village office, either by the notifier in person or by mail, or by an agent.

Notifier. For the reporting kind of declaration, the KOSEKI Law designates as the obligatory notifier for each event a person who is in a position to know about the occurrence of an event quickly and accurately, and who has a direct interest in declaring the event as a legal obligation. The creative kind of declaration, by its nature, depends on the good will of the person concerned. For this kind of declaration, therefore, the KOSEKI Law designates a concerned

person as a notifier or specifies another person, if necessary, depending on the specific event.

Place of declaration. A declaration may be made at the place of occurrence of the event, the place of permanent domicile of the person involved in the event, or at the place of usual or temporary residence of the notifier.

The duration of declaration. The time limit for the declaration is fixed for each event. For example, the birth declaration is to be made within 14 days from the date of birth, and the death declaration within a week from the date when the event is known. If the declaration is made without good reason after the termination of such a specified duration, the obligated notifier is subject to a fine. There is no fixed period of reporting creative kinds of declarations. However, thorough administrative guidance is provided so that the date of an event can be accurately reflected in the entry for the KOSEKI register. For example, a marriage declaration is to be made on the date of wedding, etc.

Items to be mentioned in a declaration. The items on the declaration forms include some general items common to all declaration forms, and some items specific to the kind of event. The information recorded in the declaration form is transcribed and eventually recorded in the KOSEKI register. The entries are required to be accurate and clear, and, as a rule, signed and sealed by the notifier.

Documents to be attached. In some instances, written evidence is required to be attached to the declaration form to support the legality of the entry to be made. The birth or death certificate must be completed by a qualified person. A written consent of parents is needed for the marriage of persons under age 18 years for males and 16 for females. There are some instances where a written consent of the individual concerned is required when that person is to be legally recognized as a child of his or her parent.

Scrutiny and acceptance of a declaration form. The declaration of an event for the KOSEKI registration becomes legally valid only when it is accepted by the head of a local administrative office. The entry to the KOSEKI register is made, as a rule, on the basis of what is mentioned on the declaration form. A strict scrutiny is made at the local administrative office prior to the acceptance of a declaration form.

Operation of family registration system

The responsibility for the family registration system under the KOSEKI Law is in the hands of the

head of a local administrative office under the supervision of the Director of the Regional Legal Affairs Bureau or of the Director of the District Legal Affairs Bureau which exercises jurisdiction over the region or the district concerned. The number of local administrative offices in charge of family registration was 6474 (consisting of 3370 major offices, 1573 branch offices and 1531 subbranch offices), and 30,059 officials were working in these offices throughout the country as of April 1, 1977. The number of events, such as births, deaths, marriages, divorces, etc., registered in the KOSEKI totaled approximately 4,400,000 cases during the fiscal year 1976. Besides the registered cases, there were about 15,410,000 extracts or full transcripts of original records issued during the year.

The Director of the Regional Legal Affairs Bureau or of the District Legal Affairs Bureau has the task of guiding and supervising appropriate and timely operations of the KOSEKI registration administered by the heads of local administrative offices in the competent region. To assume this task of guidance and supervision, a director may issue instructions and notifications on the KOSEKI operations in the local administrative offices. These functions are prescribed in the KOSEKI Law and Regulations, including the following:

- a) By virtue of the legal authority given to the head of the local administrative office, he may approve the correction of an erroneous entry, or the addition of an entry omitted initially in the KOSEKI register;
- b) To receive written reports of those instances where the KOSEKI registers were removed for safekeeping in the event of a fire or flood, or where the KOSEKI registers were actually lost, in danger of being lost, or suspected of being lost; and when the KOSEKI registers and related documents were transferred from one office to another; and,
- c) To receive duplicates of the KOSEKI registers and declaration forms after transcription to the KOSEKI registers.

There were 8 Regional Legal Affairs Bureaus, 42 District Legal Affairs Bureaus and 253 Subbranch offices throughout Japan as of April 1, 1978.

General use of family registers (KOSEKI)

The certification of a Japanese nationality can be made by the KOSEKI register. For instance, Japanese citizenship is given to a child whose father is a Japanese national under the provision of the Nationality Law. The KOSEKI register can be used to

certify the nationality of the parent by which the nationality of the child is determined.

The age of a person can be proved by the date of birth recorded in the KOSEKI register. The proof of age may be needed on various occasions, such as marriage, the application of the Criminal Law, suffrage, employment in specific occupations, and obtaining various licenses, etc.

The formal name of a person is fixed in the KOSEKI register. The formal name currently held by a person can always be found in the KOSEKI register because its entry is updated whenever one changes his or her name.

The relationship between persons can be ascertained by the KOSEKI registration. For example, the commitment of bigamy may be checked by the KOSEKI register.

For inheritance, first priority is given to the last will and testament of the deceased and then to the legal order of law, although the inheritance by a testament is infrequent in Japan. The inheritance by law is stipulated to be one-third share by a spouse and two-thirds by children. The KOSEKI register provides evidence on these family relationships necessary for succession to property. The Inheritance Law provides that a half of the inheritance shall go to the surviving spouse and children of the deceased even if the last will and testament directs that all the inheritance should go to a third party. The right of sharing half of the inheritance can also be ascertained by the KOSEKI register.

Family registration as a source of vital statistics

Ever since the family registration system was established, statistical data on birth, death, marriage and divorce have been compiled consistently on the basis of records registered under the family registration system in Japan. Only the data on stillbirth are derived from a source other than the family registration.

Because the primary objective of the KOSEKI System is to record family relationships of an individual for legal identification, the KOSEKI System is under the jurisdiction of the Ministry of Justice. The information needed to compile vital statistics is transcribed to statistical forms which are forwarded through administrative channels to the Ministry of Health and Welfare for the preparation of vital statistics. For this reason, the production of vital statistics is subject to some limitations peculiar to secondary statistics.

The completeness of coverage and the accuracy of information collected are fairly well ensured by the legal interests and obligations involved in registrations executed under the KOSEKI System. The advantages of a strong legal basis are immeasurable and provide a source of almost complete and highly accurate vital statistics data for Japan, in spite of some handicaps imposed on the Ministry of Health and Welfare which has to depend on the Ministry of Justice for the primary collection of data.

METHOD OF COLLECTING DATA ON VITAL EVENTS

Characteristics of the present method

The essential characteristics of the present vital statistics system of Japan is that it is based on the Family Registration System in which the legal status of an individual and its changes are recorded.

The responsibility for compiling vital statistics is exercised by the Ministry of Health and Welfare. Such a clear distinction between legal and statistical functions has its own merits, particularly with respect to the independence of statistics. On the other hand, the secondary nature of the derived statistics involves some limitations as a means of gathering statistical data.

For about 50 years prior to 1947, the compilation of vital statistics was assigned in the domain of the Bureau of Statistics, the central statistical organization of the national government. This function was then transferred to the Ministry of Health and Welfare, with the view to making full use of the collected data for public health purposes. Since 1947, these data have been transmitted through the channels of the public health administration from the local offices through health centers and prefectural health departments to the Ministry of Health and Welfare.

The establishment of such a special route of statistical reporting, independent of central and local statistical organizations requires continuous efforts to be made to strengthen the statistical functions attached to public health administration. Above all, the training of statistical personnel and the availability of statistical resources at the local level are very essential to ensure efficient statistical operations in the local organizations.

Transcription of information to statistical schedules

According to the provisions of the Family Registration Law, birth, death, marriage and divorce have to be declared to the head of the local administrative office. The declaration of stillbirth (fetal death) is covered by the Regulations Regarding

Reporting of Stillbirth. All of these declarations are usually made on the prescribed declaration forms, or by a certified copy of the navigation log in case the event occurs on the high seas.

The declaration of birth must be accompanied by a birth certificate prepared by the physician or the midwife who attended the birth. The birth should be declared within 14 days after the birth by the father, mother, a person who lives with them, or the attendant.

A death has to be declared with the doctor's death certificate. The death declaration should be made within 7 days after the death or the time when the death was first known by a relative, anyone who lived with the deceased, the landowner, or the caretaker of the land.

The declaration of stillbirth has to be made as a rule with the doctor's or midwife's certificate of stillbirth, and is to be declared within 7 days after the event by the father, mother, a person who lives in the same household, or by the attendant.

A marriage or divorce has to be declared by either the husband or the wife concerned, and there is no regulation as to when the event needs to be declared.

The head of the local administrative office accepts these declarations after due scrutiny, and prepares immediately a copy of the appropriate schedule of the event. The information necessary to complete these statistical schedules is transcribed from the declaration form. The head of the local administrative offices, without delay, transmits the completed statistical schedules to the director of the health center.

Appropriate entries are made in the family register at the office where the register is located, that is, the place of permanent domicile of the family. If the declaration was made in a place other than the permanent domicile, the declaration is transmitted to the head of the local administrative office where the family register is on file.

Channels of data collection

Vital Statistics data are transcribed on to statistical schedules under the direction of the head of the local administrative offices and transmitted to the director of the health center, usually daily. As mentioned before, these statistical schedules are prepared upon acceptance of the declaration regardless of the place of residence of the person concerned. A vital statistics schedule is not made out for a declaration which is being transmitted merely

for entry in the original register kept at the local office of permanent domicile.

The vital statistics schedules received from the local offices undergo general scrutiny at the health centers. The health centers then forward to the prefectural government on the 25th of each month schedules of vital events that occurred in the previous month.

On receipt of these vital statistics schedules from the health centers, the items are checked at the health department of each prefectural government as stipulated by the Ministry of Health and Welfare. After the necessary review and corrections, these schedules are rearranged properly and forwarded to the Ministry by the 5th of the following month. The Statistics and Information Department in the Ministry of Health and Welfare then produces national vital statistics.

The channel for collecting vital statistics data may be summarized in the chart as follows:

Channels of Collecting Vital Statistics Data

- Statistics and Information Department, Ministry of Health and Welfare

Supervises and guides the handling of vital statistics. Computes, tabulates and publishes vital statistics reports monthly and annually.

- Section in Charge of Health Statistics, Health Department, Prefectural Government

Transmits the schedules to the Ministry of Health and Welfare to arrive before the 5th of the following month. Examines the entries of schedules.

- Health Statistics Section, Health Center

Transmits the schedules to the Prefectural Government monthly to arrive before the 25th of every month. Examines the entries of schedules.

- Family Registration Section, Local Administrative Office (City, Ward, Town or Village Office)

Forwards the schedules to the health centers as soon as possible. Prepares vital statistics schedules. Accepts declarations after scrutiny.

- Vital events (live births, deaths, stillbirths, marriages and divorces)

Declarations.

Nationwide network of data collection

In dealing with statistical data such as vital statistics, a nationwide network must be firmly established to cover all the territory of a country. Vital events occur at each moment at various places all over the country. On the other hand, these vital events may occur in a very scattered fashion and at a greater time interval. A permanent governmental setup which can be engaged continuously in the lookout for occurrence of vital events is indispensable for the collection of complete and accurate vital statistics.

In many countries, a government unit responsible for administration of a small area, such as a local or district administrative office, assumes responsibility for civil registration. In Japan also, local administrative offices, viz., city, ward, town and village offices, are in charge of operating the family registration system which constitutes the source of vital statistics.

There were some 645 cities (the area of some large cities was further subdivided into wards), 1981 towns and 631 villages as of April 1, 1977. Various kinds of in-service training activities and special training courses are provided to the personnel of these local offices. On the other hand, there is a great public demand for the information in the registers. This is an important factor in keeping these registers complete and accurate in Japan.

An important role is played by the health centers in connection with relevant activities needed for the collection of vital statistics data. There are approximately 960 health centers at present in Japan, each covering on the average about 130,000 population. The staff of the health center includes one or more statisticians on a part-time or full-time basis. The collection and scrutiny of vital statistics schedules constitutes one of their important functions. They also make use of vital statistics preserved in the health center for the various health services performed by the center. A continuing effort is being made to give appropriate training in vital and health statistics to the statistical personnel in the health centers.

Utilization of vital data at local levels

Copies of the schedules on births, deaths and stillbirths are preserved and used by the health centers of the district where the persons concerned usually reside. The place of usual residence is ascertained by the "address of child" for the birth schedule, "address of the deceased" for the death

schedule, and by "address of mother" at the time of occurrence of the stillbirth for the stillbirth schedule. When birth schedules are sent from the local offices to the health centers, a carbon copy of its descriptive portion is removed from the original schedule to be kept in the health center. A summary death transcript is also prepared from the original schedule. The original stillbirth reports which are forwarded monthly from the local administrative offices are also filed in the health center. The preservation of copies of marriage or divorce schedules is not required so record transfers of this kind are not carried out for these schedules.

These transcripts, or forms related to persons whose places of usual residence are in other prefectures, are collected in a batch and sent to the Ministry of Health and Welfare through the prefectural government. Later, copies of these forms are prepared by the Ministry and sent to the appropriate health centers in the districts of the usual place of residence of the persons concerned. There are some 7 to 8 percent of all schedules that are transmitted across prefectural boundaries.

By such arrangement for redistribution, all the relevant transcripts and forms regarding birth, death and stillbirth are to be placed in the health center of the district of usual residence of the concerned persons.

The availability of vital records for the residents of the district make it possible for the health center to utilize them for compilation of statistical data or for identification of individual cases for providing certain health services at the health center. For example, the health center may wish to locate individual cases of premature births for follow-up and possibly provide special care or treatment.

In making use of locally preserved data, specific tables may be generated to meet special local needs. It should be noted, however, that since vital statistics is recognized as a designated statistics under the Statistics Law of Japan, specific permission from the Administrative Management Agency is required to use vital records for statistical tabulations other than those originally specified, and for non-statistical purposes.

EVALUATION OF VITAL STATISTICS

Quality control in data collection process

In any statistical inquiry, it is essential to maintain quality control in data collection and data processing. To this end, steps are taken at various stages of collecting and processing vital statistics data to en-

sure complete coverage of vital events and provision of accurate information on these events.

There is practically no problem at present as to the coverage of vital events in Japan. The people are well aware of the advantages of maintaining their records in the family registers, and of the disadvantages of neglecting their obligation to report vital events. It should be noted, however, that there are some cases of nonreporting or delayed reporting under certain circumstances. The number of such cases is very small and statistically almost negligible.

The major problems of quality control in vital statistics are in obtaining complete transmission of records or transcripts from one office to another, and ensuring accurate transcription from one form to another.

First of all, the entries in the declaration forms are scrutinized very closely at the local administrative office prior to acceptance of these declarations. Special attention is paid to blank items and inconsistencies between related items. A control list is then prepared of all events for which vital statistics schedules should be made. The completed schedules are checked again, especially with regard to the marks in the mark sheet portion of each schedule.

The completed schedules are then sent from the local administrative office to the health center, from the health center to the prefectural government, and from the prefectural government to the Ministry of Health and Welfare. At all stages of such transmission, an appropriate forwarding form is attached to each batch of schedules to ensure complete transmission from one place to another.

The number of the schedules entered in the forwarding form is checked against the number of schedules actually received. The entries in these schedules are also carefully scrutinized schedule by schedule at the receiving office. Detailed checking instructions at each stage of transmission are provided by the Ministry of Health and Welfare.

On receipt of the completed schedules at the Statistics and Information Department, Ministry of Health and Welfare, the number on the forwarding form is checked with the actual number of schedules enclosed in the batch. The schedules are then edited again, some parts manually and others by computer. Detailed editing instructions are provided for this stage.

Completeness of coverage

In the early days of development of the Family Registration System, registration was not very complete and a good number of vital events was missed. For instance, the low birth rate at the beginning of the Meiji era followed by a rapid increase is believed to be attributable mainly to the improvement of registration rather than an actual increase in the birth rate. A similar occurrence may be observed about the death rate.

A direct field test of completeness of registration of births and deaths was conducted by the Ministry of Justice during the 5-year period from July 1947 to July 1952. During the same period, the Ministry of Health and Welfare carried out a similar test of completeness of reporting of stillbirths. For these tests, physicians and midwives who attended births, deaths and stillbirths, were requested to send separate reports on these events using postage-free cards directly to the local offices at the place of occurrence. These reports from physicians and midwives were matched against the corresponding declarations made by the ordinary notifiers to these local offices.

The results of these tests showed that 98.8 to 98.9 percent of birth declarations, 99.7 to 99.8 percent of the death declarations, and 99.4 to 99.5 percent of reported stillbirths matched with the reports from physicians and midwives. The slightly lower ratio for births may be due to the higher mobility of mothers. It should be noted that independence between the registration and the report is not always maintained by this method, since the declarations require the certification of the attending physician or midwife.

There are some cases of delayed birth and death registration. Because there is a cut off date of 31 March of the following year for the inclusion of events on a year-of-occurrence basis, the annual tabulations do not include the declarations that failed to reach the Ministry of Health and Welfare after the cut off date. The number of such cases amount to about 0.5 percent of the births for a specified year and less than 0.1 percent for deaths. It is apparent that there are some coverage errors in the vital statistics for Japan but the errors from incompleteness is small and statistically of little consequence for most analytic purposes.

Accuracy of contents

In a system which requires hand transcription of data from the declaration forms to statistical schedules, there are possibilities of errors over and

above the errors that might occur in the original documents. It is a relatively simple matter to detect certain kinds of errors such as a blank or an impossible entry, or an obvious discrepancy with a related item. There are established procedures to screen out such errors at each step in the transmission of data. If an error is found, an appropriate means of imputation is taken to correct it.

As the schedules are transferred from one stage to another, it generally becomes more difficult to discover errors and more time-consuming to correct them at the later stages of the data gathering hierarchy. It is desirable, therefore, to have a thorough examination of the contents at the initial stages of preparation of the vital statistics schedule. This is especially true of errors which cannot be detected later by the simple means of checking a discrepancy or blank entry, etc.

The Ministry of Health and Welfare conducted a test on the accuracy of entries of vital statistics schedules for the years 1964 to 1966 and for the months of February and August of 1968, selecting a sample of several cities, towns and villages. For this test, each vital statistics schedule was matched with the corresponding declaration form on a case-to-case basis, and the entries checked. As may be seen from Table 1, there were very few schedules containing discrepancies with declaration forms. The drop in percentage recorded for February 1968 was attributed to the fact that the statistical forms had been revised to accommodate a mark sensing sheet.

It should be recognized in this context that the percentage shown here indicates only the accuracy of transcription from the declaration forms to the statistical schedules. Errors in the original documents are not reflected by these results. The existence of such errors may be suspected from the magnitude of "unknown" cases appearing in some of the published tables, although it is statistically insignificant in most instances.

Table 1. Percent of schedules that agreed with declaration forms in their entries

Year	Birth	Death	Stillbirth
1964	99.6	99.4	99.7
1965	99.6	99.2	99.5
1966	99.8	99.6	---
Feb. 1968	98.5	98.3	98.3
Aug. 1968	99.6	99.6	99.9

Source: T. Shiomi; "Post-enumeration Survey of Vital Statistics" in *Indicators of Health and Welfare (Kosei-no-Shihyo)*, October 1969, pp. 43-46 (in Japanese).

Consistency with population census data

Some analytical observations on population census data in relation to vital statistics data are useful for the assessment of these data. If these data are complete and accurate, a population as of the previous census can be brought to the population as of the present census by applying a "demographic balancing equation" and taking the effect of migration into account. In fact, this is the way vital statistics data are being used in practice to estimate the population for post-censal years. The population figures are carried over from year to year to the following census year by adding births, subtracting deaths, and adjusting net migration effects. Frequently, these estimates have agreed closely with the population actually enumerated in the census.

A drawback of such means of evaluation is that discrepancies may result from errors in either or both census data or vital statistics data. The magnitude of the separate effects cannot always be determined easily, especially when these inconsistencies are small. When these inconsistencies are sizable, basic differences in the population covered should be first suspected.

If there is a conceptual difference between the census population and the population covered for vital statistics, this will affect the calculation of vital rates or other analytical measure, unless proper adjustments are made. For example, in Japan, the vital registration is compulsory only for Japanese nationals, and hence the vital statistics of Japan include vital events which occurred to Japanese nationals within the country. For the calculation of vital rates, the population of Japanese is required to be tabulated separately out of censuses and other relevant estimates of the population.

The census population of Japan is usually presented as of October 1. On the other hand, the annual vital statistics data usually refer to a calendar year from January to December. It is necessary, therefore, to obtain estimates of the midyear population or to reconstitute vital statistics data from April of one year to March of the following year, when very exact results are required. Considerations on the consistency of the reference period of time are important to ensure precise analytical observations of statistical results.

Problems of perinatal mortality data

Vital statistics derived from registration data in Japan are generally believed to be virtually complete and accurate in many respects, and to be one of the

most adequate vital statistics in the world. This can be demonstrated from various points of view. There are still some problems which need further improvement. An example of this is the accuracy of perinatal mortality and infant mortality data.

In recent years, the infant mortality rate of Japan reached very low levels between 10 to 13 per 1000 live births, one of the lowest rates in the world. However, a disputable point is that some neonatal deaths might be registered as fetal deaths, instead of being registered as a death after live birth. If those babies who were born alive but died soon after birth are registered as stillbirths, it will cause an under registration of both deaths and births. It will especially affect the number and rate of infant mortality, even more than those of neonatal mortality.

Table 2 shows the perinatal mortality rates, late fetal death (of 28 completed weeks of gestation or over) rates, early neonatal mortality (within 1 week of age) rates, and the infant mortality rates per 1000 live births in 1970 for selected countries.

Table 2. Infant and perinatal mortality indices in 1970 for selected countries
(per 1000 live births)

Country	Perinatal mortality rates	Late fetal death rates	Early neonatal mortality rates	Infant mortality rates
Sweden	16.5	8.4	8.1	11.0
Denmark	18.0	8.5	9.4	14.2
Netherlands	18.8	10.8	8.0	12.7
New Zealand	19.8	10.8	9.0	16.7
France	20.7	13.5	7.1	18.2
Australia	21.5	9.8	11.7	17.9
Japan	21.7	15.0	6.8	13.1
England & Wales	23.8	13.2	10.6	18.1
U.S.A.	27.8	14.2	13.6	20.0

Source: United Nations: Demographic Yearbook, 1975; and World Health Organization: World Health Statistics, 1975.

Among these selected countries, a combination of remarkably high late fetal death rate (15.0 and notably low early neonatal mortality rate (6.8) is a feature of the perinatal mortality rates of Japan. This could happen if some neonatal deaths are reported as fetal deaths, if not all. The infant mortality rate would also be affected, but not to the same degree as in the case of the neonatal mortality rate.

Since the infant mortality rate is generally regarded as one of the important indicators of health conditions of a country, it should reflect the actual

status as accurately as possible. Every effort should be made to avoid these errors. This example suggests that there is always room for improvement even when the statistical development of a country reaches a relatively high level.

PROCESSING AND PUBLICATIONS OF VITAL STATISTICS

Method of processing at national level

Prior to 1940, the tabulation of vital statistics was done by hand. In 1940, some tabulating equipment, which was installed primarily for the tabulation of population census data, was made available for vital statistics. Since then, the tabulation of vital statistics at the national level has been conducted by machines except for the wartime period of a few years around 1945.

In 1949, the Ministry of Health and Welfare brought together the tabulating machines then available and used them to tabulate mortality

statistics for 1949. This was the first step taken towards mechanical tabulation for vital statistics after World War II. In 1950, a set of automatic punches, sorters, tabulators and other machines were installed in the Ministry of Health and Welfare. Full-scale mechanical tabulation of vital statistics began in April 1950.

The optical mark reading method was introduced in 1968 for processing vital statistics data. For this purpose, the vital statistics schedules have been modified to include the descriptive portion on

the right hand side and the mark sheet portion on the left side. All items of inquiry in the descriptive portion are filled in at the local administrative office. Most of these items are marked on the mark sheet portion according to the preprinted code numbers. However, some of the more complex items, such as usual residence (address), occupation, cause of death, etc., are coded at the Ministry of Health and Welfare.

The adoption of this optical mark reading method greatly increased the efficiency of vital statistics data processing. Since the raw data prepared in the field can be fed almost directly into the computer, with a few additions at the central office, the errors of transcription are minimized.

Periodical publications of vital statistics

Vital statistics are published by the Statistics and Information Department, Ministry of Health and Welfare on a periodical basis in the following publications:

Monthly Prompt Report of Vital Statistics.

This Monthly Prompt Report covers total figures of live births, deaths, stillbirths, marriages and divorces by prefecture. It should be noted that the figures included in this report represent merely the number of schedules for each type of vital events forwarded from the prefectural government and received by the Ministry of Health and Welfare. As the title indicates, these figures are of a preliminary nature and subject to adjustment. These figures include those events that occurred to the non-Japanese population in Japan as well as to those Japanese nationals residing outside of Japan. These figures are not arranged according to the usual residence of the person concerned. This report is normally published two months after the month of occurrence.

Monthly Report of Vital Statistics. In contrast to the Monthly Prompt Report which is based on the number of schedules received by the Ministry, this Monthly Report contains the figures derived from the processed data. Therefore, this report covers a wider variety of detailed tables of results as compared with the Prompt Report which is characterized by its preliminary feature. The data in the Monthly Report represent the results of vital statistics tabulated by time of occurrence of the event and the usual place of residence of the person involved in the event. For example, those events that occurred to the alien population or to Japanese national abroad are excluded, and the figures refer only to the vital events of Japanese in Japan. Any geographical subdivision is by the usual residence of the person involved in the event. This Monthly Report is published 5 to 6 months

after the month of occurrence. The annual figures are summed up from the Monthly Reports and published as "annual totals." However, these annual totals of Monthly Reports should be clearly distinguished from figures contained in the Annual Report of Vital Statistics.

Being final tabulations, these annual figures are tabulated in a wide variety of detailed tables. The Annual Report of Vital Statistics normally consists of two volumes; the first volume containing various tables on births, deaths, fetal deaths, marriages and divorces, and the second volume covering those tables relating to mortality by cause of death. In the second volume, the cause of death data are presented by the detailed list as well as the B list (Abbreviated List of 50 Causes for Tabulation of Mortality) and other classifications.

In the Appendix of the Annual Report, there are tables on vital events which were not included in the annual figures because of technical or conceptual reasons. Some tables present, for example, data on events which occurred in preceding years but registered after much delay. Other tables show events that occurred to the non-Japanese population in Japan and events that occurred to Japanese abroad.

Other publications of vital statistics

In addition to the periodic publications, there are other publications of data derived basically from vital statistics. Typically, a series of life tables represent this kind of publication. Every year, an abridged life table is constructed and published by the Ministry of Health and Welfare. This report usually contains the basic life table functions including past trends of these values, and comparison of figures with selected countries.

A complete life table is constructed every census year and published by the Ministry of Health and Welfare. The detailed life table functions are based on the enumerated population and the annual mortality data for the census year. This publication usually includes analytical results of selected life table functions, such as an international comparison of life expectancy at birth, analysis of major causes of deaths and their effects upon mortality trends, etc.

Analytical data on issues of current importance are occasionally compiled and published. For example, for every census year, sex and age adjusted death rates are presented for the major causes of deaths and published with some subnational breakdowns of geographical areas. Also vital

statistics by occupation and industry have been published.

As a current topic of importance, a mortality analysis was conducted by the Ministry of Health and Welfare on deaths from malignant neoplasms. The results of this analysis have been published as a monograph.

Since 1962, the Ministry of Health and Welfare has carried out sample surveys each year on some social and economic aspect of vital events to supplement the data derived from the vital registration system. The survey topics are changed each year as may be seen from the following:

1962 Fertility	published in March 1964
1963 Mortality	March 1965
1964 Natality and fetal mortality	May 1967
1965 Infant mortality	August 1968
1966 Marriage	September 1968
1967 Spontaneous fetal mortality	February 1970
1968 Divorce	March 1971
1969 Mortality at old ages	May 1971
1970 Fertility	March 1972
1971 Old ages	January 1973
1972 Cirrhosis of the liver	not published
1973 Marriage	July 1974
1974 Mortality	March 1977
1975 Fertility	March 1977
1976 Fertility	August 1977
1977 Mortality	
1978 Divorce	

There are also manuals on the compilation of vital statistics which are published by the Ministry of Health and Welfare. In particular, the instruction manual for filling out the death certificate, stillbirth certificate and birth certificate is important for the dissemination of the correct method of entry to physicians and midwives. Similarly, the International Classification of Diseases, which has been translated into Japanese, is essential for the diagnostic classification for morbidity and mortality data.

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PREVIOUS PUBLICATION OF THE IIVRS TECHNICAL PAPERS

1. *A Programme for Measurement of Life and Death in Ghana*,
D. C. Mehta and J. B. Assie, June 1979

