

United Nations Expert Group Meeting on  
International Standards for Civil Registration  
and Vital Statistics Systems  
27 – 30 June 2011  
New York

**Proposals for *Principles and Recommendations for a Vital Statistics System, Rev. 3* –  
Part One, Chapter 2**

**The vital statistics system**

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## **Introduction**

(a) *What is covered in this paper?*

1. The paper presents and discusses the structure and key content for Part One, Chapter II of the *Principles and Recommendations for a Vital Statistics System, Rev 3* – the Vital Statistics System. The chapter covers the following sections:

- A. Definition of vital statistics system
- B. Priority in data collection
- C. Principles for the collection and compilation of vital statistics
- D. Designation of responsibilities, organizational structure of a national vital statistics system
- E. Integration and coordination in the vital statistics system
- F. Topics and themes to be investigated in a vital statistics system
- G. Operational principles for compiling and processing vital statistics
- H. Presentation of results and data dissemination

(b) *What are the changes from the last revision?*

2. The last revision (rev. 2), while discussing various aspects of a vital statistics system, considers mostly vital statistics generated from the civil registration system. While it is understood that civil registration is the preferred and best source of vital statistics, this chapter covers all possible sources to generate vital statistics.

3. The proposed chapter II therefore provides guidelines for various aspects of a vital statistics system, relevant for all data sources – civil registration system, population censuses, sample surveys and sample registration system. When it is not possible to provide the same recommendations applied to all data sources, different guidelines are offered for data collected from different sources.

4. More specific changes are outlined below:

- (a) Definition of a vital statistics system is incorporated in Section A.
- (b) Quality control is added as a new principle for the collection and compilation of vital statistics in Section C.
- (c) More elaborated discussion is presented on the advantages and disadvantages of the three major alternatives in administering the vital statistics programmes in Section D.

- (d) Topics and themes that can be collected in censuses and in single-round retrospective surveys to estimate fertility, mortality and nuptiality are incorporated in Section F.
- (e) A new subsection - *protection against disclosures in statistical presentations* – is added while discussing presentation of results and data dissemination in Section H.

#### **A. Definition of vital statistics system and sources of data**

5. A vital statistics system is defined as the total process of (a) collecting information by civil registration or enumeration on the frequency of occurrence of specified and defined vital events, as well as relevant characteristics of the events themselves and of the person or persons concerned, and (b) compiling, processing, analyzing, evaluating, presenting and disseminating these data in statistical form. The vital events of interest are: live births, adoptions, legitimations, recognitions; deaths and foetal deaths; and marriages, divorces, separations and annulments of marriage.<sup>2</sup>

6. The main source of vital statistics is records of vital events from civil registration, which involves the continuous gathering of information on all relevant vital events occurring within the boundaries of a country.<sup>3</sup> For the calculation of vital rates, civil registration data are usually complemented by census information, which also has national coverage. However, when civil registration data either do not exist or are deficient, countries have had to recourse to data sources other than civil registration to estimate the necessary vital statistics. The use of complementary data sources has also been made to enrich and evaluate civil registration data or to gather information on demographic or epidemiological processes in a way that complements the information obtained through civil registration.<sup>4</sup>

7. Additional sources in a vital statistics system include specific questions on fertility and mortality added to population censuses, household sample surveys, vital records from sample registration and health records. For some countries, the uses of these sources of data together with the application of indirect techniques of demographic estimation have been supplying some of the statistical indicators needed for planning purposes, mainly at the national level. But there is no substitute for the availability of continuous information on vital events as obtained from registration of vital events in civil registration. This new revision therefore focuses mostly on the principles and recommendations related to improving the management, operation and maintenance of vital statistics systems, together with activities related to civil registration and the vital statistics data derived therefrom. Accuracy, timeliness and completeness are essential

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<sup>2</sup> *Principles and Recommendations for a Vital Statistics System*, Rev 2, United Nations Publication, Sales No. E.01.XVII.10, United Nations, New York, 2001, Para. 13

<sup>3</sup> Detailed elaboration of civil registration is presented in the proposed Chapter III.

<sup>4</sup> *Principles and Recommendations for a Vital Statistics System*, Rev 2, United Nations Publication, Sales No. E.01.XVII.10, United Nations, New York, 2001, Para. 14

elements that countries should strive to attain in their systems. Allowance is made, as appropriate, for the use of other sources of complementary or alternative data.<sup>5</sup>

## **B. Priority in data collection<sup>6</sup>**

8. As a country develops and strengthens its vital statistics system, it can be guided by a recommended priority of vital events:

9. In establishing or improving a vital statistics system, first priority should be given to setting up procedures for the registration of (a) live births and (b) deaths, followed closely by (c) foetal deaths, because it is these events that are basic to the measurement of population growth rates and directly related to the measurement of key health indicators, such as infant and childhood mortality and life expectancy. The increasing importance given to the registration of foetal deaths is in recognition of their importance in measuring perinatal mortality and pregnancy outcomes.

10. Lower priority is given to collection of marriage statistics through civil registration because many marriages constituted by religious or tribal ceremonies and extra-legal consensual unions and temporary marriages often go unregistered.

11. Arrangements for the registration of annulments, judicial separations, adoptions, legitimations and recognitions should have an even lower priority than births, deaths, foetal deaths, marriages and divorces, although these, too, are an ultimate registration goal.<sup>7</sup>

12. When a field sample survey or population census is used as a supplementary means of collection, the events to be investigated can be any of the vital events, e.g., live births, deaths, foetal deaths, marriages and divorces. However, first priority is given to live births and deaths, followed by marriages. The collection of information on foetal death is not recommended because of the problems of accurately reporting the event.

## **C. Principles for the collection and compilation of vital statistics**

13. The section describes five main principles of the vital statistics system: universal coverage, continuity, confidentiality, regular dissemination and quality control.

### *(a) Universal coverage<sup>8</sup>*

14. A vital statistics system should include all vital events occurring in every geographic area and in every population group comprising the national area.

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<sup>5</sup> *Principles and Recommendations for a Vital Statistics System*, Rev 2, United Nations Publication, Sales No. E.01.XVII.10, United Nations, New York, 2001, Para. 15

<sup>6</sup> *Principles and Recommendations for a Vital Statistics System*, Rev 2, United Nations Publication, Sales No. E.01.XVII.10, United Nations, New York, 2001, Paras. 48 - 55

<sup>7</sup> *Principles and Recommendations for a Vital Statistics System*, Rev 2, United Nations Publication, Sales No. E.01.XVII.10, United Nations, New York, 2001, Para. 53

<sup>8</sup> *Principles and Recommendations for a Vital Statistics System*, Rev 2, United Nations Publication, Sales No. E.01.XVII.10, United Nations, New York, 2001, Para. 58-59

15. If a sample registration system is employed rather than a complete civil registration process, the sample should be so designed as to be representative of every population group and of the national area and each subnational area which may be of interest.

(b) *Continuity*<sup>9</sup>

16. The principle of continuity is critical in the collection and compilation of vital statistics as data need to reflect short-term fluctuations, including seasonal movements, as well as longer-term movements. Continuity is most easily achieved when civil registration is fully established, because monthly (or quarterly) and annual reporting usually become a routine part of the system. Where supplements to civil registration, such as sample surveys, are employed to obtain estimates of vital rates, special efforts may need to be made to ensure that data become available on a frequent and regular basis.

(c) *Confidentiality*<sup>10</sup>

17. Confidentiality of personal information in vital statistics microdata and any associated statistical reports should be safeguarded insofar as consistent with the intended uses of these records for specific administrative and statistical purposes. Statistical reports based on vital events, whether derived from a registration system or obtained by any other means, such as a sample survey, should be opened to the widest possible legitimate use consistent with appropriate concerns for the provision of confidentiality for the individuals whose data contribute to the statistics. Similarly, access to the individual records themselves should be restricted to legally authorized individuals for specified permitted purposes. The confidentiality principle is based on the right of the individual to expect that information given in confidence to the registrar or interviewer will be used only for authorized statistical or administrative purposes. In turn, the national authority which collects vital event data with a promise of confidentiality should expect full and accurate data to be reported by individuals, regardless of the sensitivity of the information.

(d) *Regular dissemination*<sup>11</sup>

18. The compilation of vital statistics should have as its ultimate minimum goal (a) the provision of total monthly or quarterly summary counts of vital events on a time schedule prompt enough to provide information for health intervention and population estimation programmes, administrative uses or other needs, and (b) the production of detailed annual tabulations of each type of vital event cross classified by its demographic and socioeconomic characteristics. In planning the detailed tabulation programme, it is

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<sup>9</sup> *Principles and Recommendations for a Vital Statistics System*, Rev 2, United Nations Publication, Sales No. E.01.XVII.10, United Nations, New York, 2001, Para. 60

<sup>10</sup> *Principles and Recommendations for a Vital Statistics System*, Rev 2, United Nations Publication, Sales No. E.01.XVII.10, United Nations, New York, 2001, Para. 61

<sup>11</sup> *Principles and Recommendations for a Vital Statistics System*, Rev 2, United Nations Publication, Sales No. E.01.XVII.10, United Nations, New York, 2001, Para. 62

important to ensure that resources are available to complete it on a regularly established basis and on a time schedule that will ensure the effective use of the analysis of the interrelationship between demographic, economic and social factors to plan, operate and evaluate public health programmes, and for the purposes of the formulation and evaluation of economic and social plans. In so far as possible, such statistics should be comparable within the country, across demographic data sources and on an international basis to permit international analysis. Where particular circumstances within a country require departures from international standards, publication of the data should be accompanied by an explanation of these departures and an indication of how the national presentation can be converted to meet or approximate international standards.

(e) *Quality control*

19. Quality control, as a principle of a functioning vital statistics system, refers to developing strategies and procedures for ensuring the quality of vital statistics in terms of completeness, correctness, availability and timeliness. Those procedures need to be set up as regular and routine activities including field activities at the collection stage - recording of vital events through civil registration or collecting statistics through population censuses and sample surveys; query practices at the time of data collection to ensure that omissions and errors are caught early enough so that the solutions can be incorporated in the original records; following up with statistical reports transfer to ensure complete and accurate data transfer; checking and querying at the statistics editing, coding and tabulation stage.

**D. Designation of responsibilities, organizational structures of a national vital statistics system**<sup>12</sup>

20. The section outlines the need to designate, within the law of the country, the responsibility for collecting, compiling, processing and disseminating vital statistics. It recommends that the design and conduct of the various operations by which vital statistics are collected, compiled, processed, published and disseminated be assign to a central government agency or agencies. However no matter where the agency responsible for the vital statistics system is located within the government structure, comprehensive coordination must be achieved among the civil registration system, the vital statistics system, the general statistical service, population and migration statistical services, health statistics services and other government institutions.

21. In turn, the civil registration law must include provisions for the collection of data on registered vital events for statistical purposes. The civil registration law should also spell out the means for cooperation and coordination with the vital statistics system. In this way, the legislation will support the continuity and permanence necessary to operate each system. Legislation also ensures government commitment to each system. Both system functions and the channels for coordination and cooperation have to be clearly

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<sup>12</sup> Paragraphs 20 – 23 in this Section are extracted from *Principles and Recommendations for a Vital Statistics System*, Rev 2, United Nations Publication, Sales No. E.01.XVII.10, United Nations, New York, 2001, Paras. 63 – 66.

stated since the vital statistics system depends on the civil registration system to collect the data necessary for the production of vital statistics. The legislation needs to give a clear designation of duties and responsibilities covering how the vital statistics system obtains the necessary data from the civil registration system; how it accurately records the information for statistical purposes; what the reporting, compilation, processing, tabulation, analysis, presentation and dissemination procedures are; and how monitoring and evaluation of the system is to take place. It is recommended that if the existing vital statistics law does not specify the functions, responsibilities and procedures for vital statistics, then the law should be amended to do so.

22. The vital statistics law should likewise clearly delineate the duties, responsibilities and arrangements for coordination of needs and services between the vital statistics system and the civil registration system. It should also provide for cooperation with other government agencies that compile demographic and health statistics, and those who use these data for administrative and analytic purposes in economic and social matters, or to plan, operate and evaluate public health programmes at the communal, regional or national levels. The vital statistics law should provide for coordination of coverage, definitions, concepts, coding systems, classification schemes and tabulation programmes with the authorities responsible for population censuses and sample surveys, and with agencies involved in migration, public health and other related social and economic statistics. The coordinating mechanism established to achieve these objectives should have a direct relationship with the agency responsible for the overall coordination of the national system of statistics.

23. In addition to being either centralized or decentralized organization, there are three major alternatives one can consider in administering vital statistics programmes. The vital statistics administration can be placed under the national statistical agency or within the civil registration administration, or different vital statistics functions can be designated to one or more government agencies whose work relates to those functions.

24. Placing the vital statistics programme under the national statistical agency has the advantage of focusing attention on the statistical aspects of the vital statistics system. The collection of vital statistics data under such an arrangement may be more extensive and exhaustive than it would be under the civil registration or health ministry auspices. In addition, each type of vital event may receive the same treatment in the tabulation and dissemination programmes. Furthermore, in some countries, the resources necessary for long-range planning and programme development for vital statistics may be available only in a national statistics agency.

25. There are some potential disadvantages to placing a vital statistics administration in a national statistical agency. First, the statistical agency may have no control over the basic collection process, which is carried out by local civil registrars. Therefore, data collection instructions issued by the statistical authorities to local registrars may be ignored, queries for omitted or incomplete data may not be carefully attended to, and reporting to the statistical agency may not be timely. Second, the statistical agency may not be aware of important legal problems and/or limitations that affect the interpretation of vital statistics data. Third, the vital statistics program may not receive the priority

attention it deserves, particularly during the population census or major survey time, if the national statistics agency is also responsible for conducting population censuses and surveys and its resources are limited. Consequently, the series of vital statistics it produces may suffer in respect of timeliness and quality.

26. Placing specific vital statistics programs under relevant government agencies will provide the attention the programs need and therefore will produce quality data. For example, entrusting the production of health statistics to the health authorities can respond very well to changing needs in public health. However, such disadvantages, arising from lack of control over data collection, as are noted for the national statistics office may also apply to the health agency.

27. Placing the vital statistics administration under the civil registration administration has the advantage of direct control over the collection of, as well as full and ready access to, the original data. However, when the system is designed primarily to provide for the civil registration function the statistical component of the programme may be neglected.

28. Other arrangements are possible, but in any case, it is essential that the vital statistics programme be clearly defined and its administration have strong, permanent, governmental support. In most countries, the agency responsible for the production of vital statistics has no responsibility for carrying out actual registration of events. Because of the separate administration of these functions, coordination among the responsible agencies is particularly important.

### **E. Integration and coordination in the vital statistics system <sup>13</sup>**

29. The section presents various coordination mechanisms that the vital statistics system needs to adopt to ensure that the vital statistics system runs smoothly. The mechanisms include adopting uniform legislation on a nationwide basis for national statistical programme; using consistent concepts, definitions and classifications within the vital statistics system and also in data collection systems such as the civil registration system; ensuring centralized coordination of statistical activities; creating an inter-agency coordination committee comprised of knowledgeable staff of the involved agencies; and adopting uniform processes and practices at every level of the vital statistics system.

30. The section also suggests several techniques that work well to improve the communication between local offices and the central vital statistics office and between staff in civil registration and staff in vital statistics, hence increase the chance of maintaining uniform processes and practices at all level of the vital statistics system. They are (1) issuing handbooks to maintain consistency in operations between central office and local offices, and among the various local offices; (2) producing newsletters, jointly by the civil registration and vital statistics agencies can communicate items of interest and importance for the staff of each agency and keep staffs informed concerning

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<sup>13</sup> *Principles and Recommendations for a Vital Statistics System*, Rev 2, United Nations Publication, Sales No. E.01.XVII.10, United Nations, New York, Paras. 67 - 73



changes taking place in other agency; and (3) conducting trainings and checking quality and completeness of the statistical reports by traveling field consultants at subnational and local vital statistics offices.

## F. Topics and themes to be covered in a vital statistics system

31. This section looks at a list of topics and themes and their definitions to be investigated in the registration process for vital statistics purposes. If the source is civil registration, the list presented in this module will need to be supplemented with identification information, such as registration number, place of registration, identification of the registrar, given names and surnames of the registrant, characteristics of the informant etc.

### (a) *Selection of topics and themes*<sup>14</sup>

32. There is a need to meet both national needs and international standards when selecting the topics and themes to be included in a vital statistics system. Since the international standards are derived from a review of national experiences, a country may need to collect data in more detail than necessary to meet international comparison objectives. In such a case, the data can be collected in a way that permits it to be collapsed into categories appropriate to the international standards.

### (b) *Topics and themes to be covered for vital statistics purposes through the civil registration system*<sup>15</sup>

33. The section considers topics to be investigated for vital statistics purposes through the civil registration system, for live birth, death, foetal death, marriage and divorce. Both core and non-core topics are presented, with core topics highlighted in bold. Definitions and specifications for each topic will be provided in the revision.

**Table 1. Topics and themes to be investigated for vital statistics purposes through the civil registration system**

(1) LIVE BIRTH	
Direct topics	Derived topics
(i) Characteristic of the event - Dates (time reference)	
<b>Date of occurrence</b> (of birth)	
<b>Date of registration</b>	
Geographic characteristics	
<b>Place of occurrence</b>	<b>Locality of occurrence</b> <b>Urban/rural occurrence</b>
<b>Place of registration</b>	
Other characteristics	

<sup>14</sup> *Principles and Recommendations for a Vital Statistics System*, Rev 2, United Nations Publication, Sales No. E.01.XVII.10, United Nations, New York, Paras. 74 - 76

<sup>15</sup> *Principles and Recommendations for a Vital Statistics System*, Rev 2, United Nations Publication, Sales No. E.01.XVII.10, United Nations, New York, Para. 86

<b>Type of birth</b> (i.e. single, twin, triplet, quadruplet, or higher multiple delivery)	
<b>Attendant at birth</b>	
Type of place of occurrence (hospital, home, etc)	
(ii) Characteristics of the child and of the parents (ii.a) Characteristics of the child	
<b>Sex</b>	
<b>Birth weight</b>	
(ii.b) Characteristics of the mother	
<b>Date of birth or Age</b>	<b>Age</b>
<b>Marital status</b>	Child born in wedlock (legitimacy status)
<b>Educational attainment</b>	
Literacy status	
Ethnic and/or national group	
Citizenship/nationality	
Economic activity status	Socio-economic status
Usual occupation	
<b>Place of usual residence</b>	<b>Locality of residence Urban/rural residence</b>
Duration of residence in usual place	Migrant status
Place of residence at a specified time in the past	
Place of birth	
Date of last menstrual period of the mother or gestational age	Gestational age
Number of prenatal visits	
Month of pregnancy prenatal care began	
<b>Children born alive to mother during her entire life time</b>	<b>Birth order or parity</b>
<b>Children born alive to mother during her entire life and still living</b>	
<b>Foetal deaths to mother during her entire life</b>	
<b>Date of last previous life birth</b>	Interval since last previous life birth
<b>Date of marriage</b>	<b>Duration of marriage</b>
(ii.c) Characteristics of the father	
<b>Date of birth or Age</b>	<b>Age</b>
<b>Marital status</b>	Child born in wedlock (legitimacy status)
<b>Educational attainment</b>	Socio-economic status
Literacy status	
Ethnic and/or national group	
Citizenship/nationality	
Economic activity status	Socio-economic status
Usual occupation	
<b>Place of usual residence</b>	<b>Locality of residence Urban/rural residence</b>
Duration of residence in usual place	Migrant status
Place of residence at a specified time in the	

past	
Place of birth	
(iii) characteristics of population-at-risk To be obtained independently from population censuses, population registers, sample surveys and inter-censal estimation procedures	
<b>(2) DEATH</b>	
Direct topics	Derived topics
(i) Characteristics of the event - Dates (time reference)	
<b>Date of occurrence</b>	
<b>Date of registration</b>	
Geographic characteristic	
<b>Place of occurrence</b>	<b>Locality of occurrence</b> <b>Urban/rural occurrence</b>
<b>Place of registration</b>	
Other characteristics	
<b>Cause of death</b>	
Manner of death	
Whether autopsy findings were used to establish cause of death	
Pregnancy-related death (for females 15-49 years of age)	
<b>Certifier</b>	<b>Type of certification</b>
Attendant at birth (for deaths under one year of age)	
Type of place of occurrence (hospital, home, etc)	
(ii) Characteristics of the decedent Personal characteristics	
<b>Date of birth or Age</b>	<b>Age</b>
<b>Sex</b>	
<b>Marital status</b>	
Date of marriage	Duration of marriage
Children born alive to mother during her entire life time (for females of child-bearing age and over)	
Children born to mother during her lifetime and still living (for females of child-bearing age and over)	
Education attainment	Socio-economic status
Literacy status	
Ethnic and/or national group	
Citizenship/nationality	
Whether birth was registered (for deaths under one year of age)	
Born in wedlock (for deaths under one year of age)	Legitimacy status (for deaths under one year of age)
Economic activity status	Socio-economic status
Usual occupation	

Geographic characteristics	
<b>Place of usual residence</b> <b>Place of usual residence of the mother</b> (for deaths under one year of age)	<b>Locality of residence</b> <b>Urban/rural residence</b>
Place of previous residence	Migrant status
Place of residence at specified time in the past	
Place of birth	
(iii) Characteristics of population at risk To be obtained independently from population censuses, population registers, sample surveys, and intercensal estimation procedures.	

<b>(3) FOETAL DEATH</b>	
Direct topics	Derived topics
(i) Characteristics of the event- Dates (time reference)	
<b>Date of occurrence</b> (of foetal delivery)	
<b>Date of registration</b>	
Geographic characteristics	
<b>Place of occurrence</b>	<b>Locality of occurrence</b> <b>Urban/rural occurrence</b>
<b>Place of registration</b>	
Other characteristics	
Type of birth (i.e., single, twin, triplet, quadruplet, or higher multiple delivery)	
Attendant at birth	
Certifier	Type of certification
Cause of foetal death	
Type of place of occurrence (hospital, home etc.)	
(ii) Characteristics of the foetus and of the parents (ii.a) Characteristics of the foetu	
<b>Sex</b>	
Born in wedlock	Legitimacy status
Weight at delivery	
Date of last menstrual period of the mother Gestational age	Gestational age (derived only if date of last menstrual period is collected)
(ii.b) Characteristics of the mother	
<b>Date of birth or Age</b>	<b>Age</b>
Number of prenatal visits	
Month of pregnancy prenatal care began	
<b>Children born alive to mother during her entire lifetime</b>	Birth order or parity
<b>Children born to mother during her entire lifetime and still living</b>	
<b>Foetal deaths to mother during her entire lifetime</b>	
<b>Date of last previous live birth</b>	Interval since previous live birth
<b>Date of marriage or Duration of marriage</b>	<b>Duration of marriage</b>
Educational attainment	Socio-economic status

Literacy status	
Ethnic (and/or national) group	
Citizenship/nationality	
Economic activity status	Socio-economic status
Usual occupation	
Geographic characteristics	
<b>Place of usual residence</b>	<b>Locality of residence Urban/rural residence</b>
Place of birth	Migrant status
(ii.c) Characteristics of the father Personal characteristics	
<b>Date of birth or Age</b>	<b>Age</b>
Educational attainment	Socio-economic status
Literacy status	
Ethnic (and/or national) group	
Citizenship/nationality	
Economic activity status	Socio-economic status
Usual occupation	
Geographic characteristics	
<b>Place of usual residence</b>	<b>Locality of residence Urban/rural residence</b>
Place of birth	Migrant status
(iii) Characteristics of denominator (live births) Information is obtained from the civil registration system	

<b>(4) MARRIAGE</b>	
Direct topics	Derived topics
(i) Characteristics of the event - Dates (time reference)	
<b>Date of occurrence (of marriage)</b>	
<b>Date of registration</b>	
Geographic characteristics	
<b>Place of occurrence</b>	<b>Locality of occurrence Urban/rural occurrence</b>
<b>Place of registration</b>	
Other characteristics	
Type of marriage	
(ii) Characteristics of bride and groom (separately) Personal characteristics	
<b>Date of birth or Age</b>	<b>Age</b>
Marital status (previous)	
Number of previous marriage	Marriage order
Educational attainment	Socio-economic status
Literacy status	
Ethnic (and/or national) group	
Citizenship/nationality	
Economic activity status	
Usual Occupation	Socio-economic status
Other characteristics	

<b>Place of usual residence</b>	<b>Locality of residence Urban/rural residence</b>
Duration of residence in usual (present) place	Migrant status
Place of previous residence	
Place of residence at a specified time in the past	
Place of birth	
(iii) Characteristics of population at risk (54) To be obtained independently from population censuses, population registers, sample surveys, and inter-censal estimation procedures.	

(5) DIVORCE	
Direct topics	Derived topics
(i) Characteristics of the event – Dates (time reference)	
<b>Date of occurrence (of divorce)</b>	
<b>Date of registration</b>	
Geographic characteristics	
<b>Place of occurrence</b>	<b>Locality of occurrence Urban/rural occurrence</b>
<b>Place of registration</b>	
(ii) Characteristics of divorces (husband and wife separately)	
Personal characteristics	
<b>Date of birth or Age</b>	<b>Age</b>
Type of marriage being dissolved	
Number of dependent children of divorced persons	
Number of children born alive to the marriage being dissolved	
<b>Date of marriage or Duration of marriage being dissolved</b>	<b>Duration of marriage</b>
Mode of dissolution of previous marriage	
Number of previous marriages	Marriage order
Educational attainment	Socio-economic status
Literacy status	
Ethnic (and/or national) group	
Citizenship/nationality	
Economic activity status	Socio-economic status
Usual Occupation	
Geographic characteristics	
<b>Place of usual residence</b>	<b>Locality of residence Urban/rural residence</b>
Duration of residence in usual (present) place	Migrant status
Place of previous residence	
Place of residence at a specified time in the past	
Place of birth	
Place of occurrence of marriage being dissolved	

(iii) Characteristics of population at risk

To be obtained independently from population censuses, population registers, sample surveys, and inter-censal estimation procedures.

(c) *Topics and themes that can be collected in population censuses and household sample surveys*<sup>16</sup>

34. There is no substitute for a well designed and well maintained civil registration system as a source of data on vital events for the production of vital statistics. In countries where civil registration is lacking, deficient or insufficiently reliable, other sources of demographic statistics can be used to collect information on the incidence of vital events and to estimate or calculate vital rates. These other sources are population censuses, household and demographic sample surveys. Where civil registration is well established and maintained, these other sources of demographic data are useful in providing independent estimates of demographic parameters, which can be used for evaluating the level of completeness of civil registration and vital statistics or as complementary sources of demographic and health data. Moreover, population censuses are essential in providing the necessary denominators to calculate vital rates and ratios in combination with civil registration data (numerators). Civil registration data alone, therefore, does not provide the population-at-risk for the calculation of most vital statistics rates. In particular, the utilization of population census data as denominators is indispensable when the civil registration system is not accompanied by a population register.

35. It must be stressed that even though these sources may provide estimates of the current levels of fertility, mortality, foetal mortality, marriage and divorce, they are not a substitute for a civil registration system since they can not provide such details as estimates of mortality by cause of death, other epidemiological information and a series of annual rates for various administrative divisions. In addition, these sources provide very limited data on vital events themselves since these investigations focus on the household members as a unit, not on individual vital events, and the vital events are just collected as characteristics of household members. A universal and well maintained civil registration system remains the single best source of information on vital events for administrative, demographic and epidemiological purposes.

36. The vital event is a characteristic of selected household members. A few topics on each vital event can be collected. A list of topics and themes that can be obtained from each type of source mentioned above is set out in the Table 2.

Table 2. Topics and themes that can be collected in censuses and in single-round retrospective surveys to estimate fertility, mortality, and nuptiality

I. Information that can be collected for fertility and mortality estimation in population censuses and single-round retrospective sample surveys that use census-type questions

<sup>16</sup> *Handbook on Training in Civil Registration and Vital Statistics System*, United Nations Publication, Sales No. E.02.XVII.10, United Nations, New York, 2002, Paras. 248 - 250

<p>1. For all members of the household</p> <p>In addition to the basic data collected through censuses and surveys, it is useful to include these topics:</p> <ul style="list-style-type: none"> <li>Relationship among the members of the family</li> <li>Identity of the mother, if living in the household (her number in the questionnaire)</li> <li>Date of birth (in addition to the age, optional)</li> <li>Orphanhood from mother/father (or survival of parents)</li> </ul> <p>2. Information that can be collected for selected members of the household</p> <p>For women 15 years of age and over (or the minimum age adopted in the country):</p> <ul style="list-style-type: none"> <li>Total number of children ever born alive, by sex</li> <li>Total number of children ever born alive and still living, by sex</li> <li>Date of birth and sex of the last child born alive</li> <li>Survival of the last child born alive at the time of the survey</li> <li>Date of death of the last child born alive</li> <li>Age at first marriage</li> <li>Age at first child</li> <li>Duration of marriage (or date of first marriage)</li> </ul> <p>3. Information that can be collected for all households in a census and/or a sample retrospective survey</p> <p>Number of deaths in the household during the previous 12 months (recent deaths)</p> <p>For each deceased:</p> <ul style="list-style-type: none"> <li>Name and surname</li> <li>Sex</li> <li>Date of birth (or age)</li> <li>Date of death (day, month, year)</li> </ul> <p>4. Population-at-risk</p> <p>Household members, depending on the census and survey methodology adopted. Usually, censuses and surveys cover population in the households during a specified period or at specific moment in time. In case of censuses, there are two types of approaches for collecting data: de facto and de jure methods. Some countries use a combination of both procedures. The census results give the base line figures for future adjustments and estimates, provided that the net migration has been minimal. Estimates obtained from these figures constitute the population-at-risk for calculating vital rates and ratios in combination with vital statistics from registration data</p>
<p>II. Information that can be collected in individual in-depth single-round retrospective surveys</p> <p>In order to estimate fertility and mortality parameters through in-depth single-round retrospective sample surveys, specific questions may be included in the survey to collect the following information (in addition to the basic topics which are usually investigated):</p>
<p>1. For all members of the household</p> <ul style="list-style-type: none"> <li>Relationship among the members of the family</li> <li>Identity of the mother, if living in the household (her number in the questionnaire)</li> <li>Date of birth</li> </ul>



Age

2. Information that can be collected for selected members of the household

For women in reproductive ages (or any other well defined sub-universe of women, e.g., ever married women of 15 to 54 years of age):

Census-type questions on fertility and mortality (see sect. I above)

A birth history (or a maternity/ pregnancy history) may be completed for each selected woman. The information to be collected for each child born alive (if a birth history is used) and for each outcome of pregnancy (if a pregnancy history is used) should include:

Name

Date of birth (day, month and year)

Sex

Survivorship status and

Age at last birthday, if alive

Age at death, if dead (or date of death: day, month and year)

Gestational age, if foetal death (in completed weeks of gestation)

Date of occurrence, if foetal death (day, month and year)

Information for women:

Age

Age at first marriage

Age at first birth

Duration of marriage (or date of first marriage)

History of marriages

3. Population-at-risk

Household members present

Household members temporarily absent

Household visitors

Geographical location of the household

For the purposes of obtaining information on births and deaths, it is recommended that the household include household members present and household members temporarily absent. Household visitors should be excluded.

III. Information that can be collected in a follow-up (or multi-round) demographic sample survey  
In follow-up surveys, data on fertility, mortality and nuptiality are collected in a prospective approach and the sampled households are interviewed repeatedly within certain periods of time to record changes in the household in each visit (e.g., every six-month interval). The topics and themes set out below can include.

1. Information that can be collected from all members of the household

Name and surname

Relationship to the head of the household

Relationship among the members of the family

Identity of the mother, if living in the household (line number in the questionnaire)

Sex

<p>Date of birth (day, month and year)</p> <p>Age</p> <p>Ethnic (and or national group)</p> <p>Place of birth</p> <p>Place of residence</p> <p>Information that may be collected for selected members of the household</p> <p>For persons 15 years and older:</p> <p>Marital Status (civil status)</p> <p>For women 15 years of age and over:</p> <p>If pregnant at time of interview, number of weeks</p> <p>Topics at each subsequent interview for each person in the household:</p> <p>Name and surname</p> <p>Date of birth, if a new live birth (day, month and year)</p> <p>Sex</p> <p>Survivorship status of each person</p> <p>Age at death, if dead (or date of death: day, month and year)</p> <p>Gestational age, if foetal death ( in completed weeks of gestation)</p> <p>Date of occurrence, if foetal death (day, month and year)</p> <p>Identity of the mother of the live birth (or foetal death) (line number in the questionnaire)</p> <p>Immigrant (day, month and year the household member arrived to live in the household)</p> <p>Emigrant (date, month and year the household member left the household to live elsewhere)</p> <p>3. Population-at-risk</p> <p>Household members present</p> <p>Household members temporarily absent</p> <p>Household visitors</p> <p>Geographical location of the household</p>
<p>IV. Information that can be collected in a sample registration system</p> <p>Topics and themes to be recorded in the sample registration system can be the same as that collected in full registration. Topics/themes to select from are contained in annex IV. Countries may choose, however, a short list of topics to start with, and then gradually expand it as the registration system matures. It is essential that the topics/themes needed for estimating fertility and mortality be included from the start.</p>
<p>V. Information that can be collected in a dual-records system</p> <p>When the sample registration system is combined by a retrospective survey in the same sample registration area, the system is known as a dual-records system. The retrospective survey should be /carried out by independent field workers. Data required in this case include the vital events under investigation as well as the data required for legal purposes.</p> <p>Information selected for collection in the first survey will determine the information to be collected in the retrospective survey for matching the two survey results.</p>

## **G. Operational principles for compiling and processing vital statistics**<sup>17</sup>

37. The section presents operational principles for compiling and processing vital statistics based on a civil registration system. Three areas are covered: (1) advance planning; (2) national centralized compilation from individual statistical reports and (3) tabulation.

38. Advance planning is crucial to the success of any statistical programme. The statistical processing plan needs to ensure that information to be collected and tabulated meets user needs. The advance planning stage should also enforce that vital statistics are compiled, insofar as possible, for the total geographic area of the country, for each major or other minor civil division and for at each principal town and city. They should also distinguish urban and rural. National vital statistics should also refer to the total population of the country. In countries where the social and economic characteristics of large segments of the population vary greatly it is recommended that the identity of each important population sub-group be maintained in the tabulations.

39. For national compilation of vital statistics, various components are examined and recommendations are provided. The components include obtaining statistical reports from data collection agency, editing, querying made to data collection agency for missing or inconsistencies, imputation of missing or inconsistent data items, data coding, converting data into electronic format, tabulation using electronic equipment and quality control.

40. For vital statistics tabulation, principles are reviewed regarding coverage on both geography and time. The basic principle relative to geography is that each vital event occurring within the country must be registered and have a statistical report filed. This allows tabulation of vital statistics for the entire country, intermediate and minor civil divisions, large cities and towns, and sub-population groups. Regarding time reference for vital statistics tabulation, timely reporting of vital events and tabulation of vital statistics are important.

## **H. Presentation of results and data dissemination**<sup>18</sup>

41. The tabulation programme of the national vital statistics system should provide data in regular intervals (quarterly, semi-annually and annually) and in classifications as required for the study of the frequency distributions of vital events, time trends and geographical differentials for the most important characteristics of vital events. These data must be made available on a timely basis through publication or other means of dissemination, such as ad hoc tabulations, on-line or via other electronic media, as appropriate.

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<sup>17</sup> *Principles and Recommendations for a Vital Statistics System*, Rev 2, United Nations Publication, Sales No. E.01.XVII.10, United Nations, New York, 2001, Paras. 233 - 278

<sup>18</sup> Subsections (a) – (f) are extracted from *Principles and Recommendations for a Vital Statistics System*, Rev 2, United Nations Publication, Sales No. E.01.XVII.10, United Nations, New York, 2001 Paras. 279 - 289

42. The section presents principles and guidelines for most effectively disseminating vital statistics data. It examines different methods of presentation appropriate to different target audiences. It considers data dissemination both with and without accompanying analyses.

(a) *Annual publication*

43. Annual publications offer the user a regular and dependable source for vital statistics data. Such publications offer the vital statistics agency visibility for its national need and purpose and for its importance to society. The annual publication provides yearly information to local, municipal and county-level administrations that allows them to update their population data base by sex and age in interaction with the population census database. Geographic information systems are becoming more and more critical enhancement in the dissemination of vital statistics.

44. Timeliness is an important factor in availability of vital statistics data. An attractively printed report, complete with data tables, graphs, charts, maps and analyses, is a worthy goal for the vital statistics system. Annual data should also be made available in other downloadable formats that are more immediately or more conveniently useful to those needing the vital statistics data.

45. The annual report should also include appendices that offer copies of the statistical collection forms for each type event, technical notes concerning coding and classification schemes, definitions of vital statistics items, an explanation of formulas used in generating vital statistics rates contained in the report, and notes on the strengths and limitations of the published data. In addition, the annual publications should include delayed and late registration, by year of occurrence, to assist users and researchers in reconstructing the time series of vital events.

(b) *Monthly and quarterly bulletins*

46. Speed in the release of monthly and quarterly data can be gained if the information is generated by place of occurrence rather than refining the data to place of usual residence. The quick release of vital statistics data through the use of monthly and quarterly bulletins meets several needs additional to the needs served by the annual publication of the data. This quick release data can alert officials to unusual changes in the numbers or patterns of vital events. Such reports are of great importance for epidemiologic surveillance. They also serve as a quality control tool to allow the early detection of missing data or data that is being seriously miscoded.

(c) *Electronic media for dissemination*

47. Vital statistics agencies may consider offering individual vital statistics records (microdata) in electronic format. The vital statistics agency needs to develop strict procedures for microdata dissemination including protocols for removing personal identifiers in the data.

(d) *Special tabulations*

48. There are occasions when neither the annual publication, the monthly and quarterly bulletins nor the data available on electronic media completely answer the needs of the user. It is advantageous in such cases for the vital statistics agency to be able to offer special tabulations to meet the user's specific needs. It is of further advantage, in the case of special tabulations, if the agency can offer analytic consultation to the customer. This can help to ensure that the specially tabulated vital statistics data are interpreted correctly. Studies involving small area data analysis, sample data analysis or analysis of vital statistics data matched to data from another source are some examples of special tabulations that might be done.

(e) *Technical meetings*

49. Good communication between the staff of the vital statistics agency and potential users of vital statistics data is essential. This becomes even more urgent when the agency releases data in electronic formats or offers the preparation of special tabulations. Both these services tend to generate numerous questions on the part of users. It is also true that frequent users of the printed publications that the statistical agency produces will develop questions about ways to use the data. For all these reasons, it is recommended that the statistical agency periodically hold group meetings to discuss the availability and proper use of the data. Such group meetings can efficiently respond to questions on a one-time basis, as opposed to answering the same question posed by multiple users contacting the office separately. The meetings can also serve as a forum to obtain direct user input concerning how well the agency is meeting user needs.

(f) *Directory of users*

50. There are many commercially available software packages—or one can have a package developed in-house—to efficiently track users of the various publication and dissemination activities of the vital statistics agency. Efficiency requires making the various services available only to those who need and use them. A frequently updated directory of users is the key to attaining such efficiency.

(g) *Protection against disclosures in statistical presentations*

51. While choosing ways of data dissemination, one should prevent inadvertent disclosure of facts about one or more individuals. This may occur when providing data to answer a specific request for statistical information, or it may occur through the routine publication of vital statistics in tabular form. Statistical reports based on vital events, whether derived from a registration system or obtained by any other means, such as a sample survey, should be opened to the widest possible legitimate use consistent with appropriate concerns for the provision of confidentiality for the individuals whose data contribute to the statistics. Such practice should follow strictly the Fundamental Principles of Official Statistics regarding the use of individual data collected by statistical

agencies.<sup>19</sup> General guidelines will be provided on how to prevent inadvertent disclosure from tabulated data.

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<sup>19</sup> *Fundamental Principles of Official Statistics*, Principle 6 - Individual data collected by statistical agencies for statistical compilation, whether they refer to natural or legal persons, are to be strictly confidential and used exclusively for statistical purposes.