

Chapter

09

Production of Vital Statistics

Why it is important: Vital statistics inform governments and their external partners, as well as the public, about the patterns and trends of diseases, mortality, fertility, and migration in a given country's population. The collection, analysis, and dissemination of vital statistics are essential for informed public policy and decision-making to improve health and socioeconomic outcomes.

Introduction

Vital statistics constitute the collection of statistics on vital events in a lifetime of a person as well as relevant characteristics of the events themselves and of the person and persons concerned.¹ These vital events include, at a minimum, birth, death, foetal death (or stillbirth), marriage, and divorce; and may also include other vital events such as adoption, recognition, legitimation, annulment and judicial separation (depending on the concepts recognized in a country's legal system). Vital statistics provide a timely and current measure of the occurrence of these vital events to members of the country's population during a specified period.² Vital statistics provide critical information on the population and should be used by policymakers and the public to make informed policy decisions, in conjunction with other demographic and social statistics. Because civil registration is continuous, permanent, compulsory and universal, information collected from a well-functioning civil registration system is the ideal source for generating vital statistics.

This chapter covers the following topics:

1. Agency Responsible for Vital Statistics
2. Vital Statistics Derived from Civil Registration System
3. Information Sharing
4. Compilation
5. Regular Publication of Recent Data
6. Information Collected
7. Minimum List of Tabulations

1. Agency Responsible for Vital Statistics

Best Practice: Vital statistics constitute the collection of statistics on vital events in a lifetime of a person as well as relevant characteristics of the events themselves and of the person and persons concerned.³ Clear authority and responsibility for the production and dissemination of vital statistics should improve availability of information to decision-makers. In most countries, there is a national agency - e.g., the national statistics agency - responsible for compiling national data and establishing uniform national standards and guidelines for statistics.⁴ Some countries designate specific government agencies or departments to carry out different vital statistics functions related to their respective areas of work. For example, the health service agency might collect and process data on births, deaths, foetal deaths, and cause of death, while the general statistical service or the court system might compile marriage and divorce statistics.⁵ However, even in this case, there should be a central agency that sets uniform national standards for statistics.

Guidance: Describe the entity or entities responsible for producing and publishing vital statistics. If more than one entity is responsible for the production of vital statistics, state whether and what entity is

¹ *Principles and Recommendations for a Vital Statistics System, Revision 3*, United Nations Publication, Sales No.E.13.XVII.10, United Nations, 2014, paragraph 1.

² *Principles and Recommendations for a Vital Statistics System, Revision 3*, United Nations Publication, Sales No.E.13.XVII.10, United Nations, 2014, paragraph 281.

³ United Nations, *Principles and Recommendations for a Vital Statistics System, Revision 3*, New York, 2014, Para. 1.

⁴ United Nations, *Principles and Recommendations for a Vital Statistics System, Revision 3*, New York, 2014. Para. 42.

⁵ United Nations, *Guidelines for the Legislative Framework for Civil Registration, Vital Statistics and Identity Management Systems*, New York, 2019, Para. 241.

responsible for setting national standards. In the comments section, describe whether the law aligns with best practice and note any recommendations for regulatory reform.

a. Describe the entity or entities responsible for compiling and producing vital statistics.

Citation:

Comments:

b. If more than one entity produces vital statistics, state the entity responsible for setting national standards.

Citation:

Comments:

2. Vital Statistics Derived from Civil Registration System

Best Practice: Vital statistics provide crucial information on the population of a country,⁶ which is a prerequisite to socioeconomic planning and informed decision-making. A well-functioning civil registration system is the ideal source from which to derive accurate, complete, timely and continuous information on vital events, including at the national and sub-national levels. Therefore vital statistics should be derived from civil registration data. Complementary data sources, such as population censuses and in-depth household surveys, may be used to evaluate and enrich civil registration data and to gather information on demographic and epidemiological processes that complements the information obtained through civil registration.^{7, 8}

Guidance: Indicate whether there is a requirement to derive vital statistics from civil registration records and whether other data sources are considered valid sources for vital statistics compilation. In the comments section, describe whether the law aligns with best practice and note any recommendations for regulatory reform.

a. Are vital statistics derived from civil registration?

Citation:

Comments:

b. Are vital statistics supplemented from population censuses, household sample surveys, health records, or other demographic estimates?

⁶ United Nations, Principles and Recommendations for a Vital Statistics System, Revision 3, New York, 2014. Para. 1.

⁷ United Nations, Principles and Recommendations for a Vital Statistics System, Revision 3, New York, 2014. Para. 28.

⁸ United Nations, Guidelines for the Legislative Framework for Civil Registration, Vital Statistics and Identity Management Systems, New York, 2019, Para. 484-487.

Citation:

Comments:

3. Information Sharing

Best practice: The civil registration agency must submit information collected during registration to the national statistics agency in order for the statistics agency to compile and publish vital statistics based on civil registration records. Sharing of data should be regular and timely. For example, if the systems are computerized and integrated, submission may be automated and happen continuously, or daily, weekly, or monthly. In paper-based systems, submission might be less frequent, such as monthly or quarterly.

The privacy of individuals must be sufficiently protected when data is shared with the statistics agency. Generally, vital event information should be submitted from the civil registration agency to the statistics agency with identifying information – such as name and any unique identification number - removed. However, in some countries, all identifying data is removed except for the unique identification number, in order to allow for data verification, deduplication and quality control. If this is the case, procedures must be put in place to ensure that statisticians do not have access to personally identifying information.

Guidance: Describe the procedure for sharing of information between the civil registration agency and the statistics agency, including frequency of data sharing and procedures for personal privacy protection. In the comments section, describe whether the law aligns with best practice and note any recommendations for regulatory reform.

a. Describe procedures and timeframe for information sharing between the civil registration agency and national statistics agency.

Citation:

Comments:

b. Describe procedures for privacy protection.

Citation:

Comments:

4. Compilation

Best practice: The compilation of vital statistics data is the process of condensing and summarizing information on vital events by classifying and tabulating the data within categories or groups in order to produce vital statistics according to a predetermined tabulation programme. Vital statistics should be compiled for the total geographical area of the country, for each of the major or minor civil divisions, and for each principal town and city. Vital statistics should distinguish between urban and rural for at least the

country as a whole and for each major or other civil division.⁹ National vital statistics should be compiled uniformly for the country, using common definitions, classifications, coding, querying, data entry and editing procedures throughout. During compilation, the statistics agency should conduct an internal review to validate the data and ensure there is no missing, duplicative, improbable or erroneous data.¹⁰

Guidance: Describe how vital statistics are compiled, including: 1) geographic coverage and subdivisions; 2) whether compiled centrally or sub-nationally; 3) if sub-nationally, whether compiled uniformly across the country; 4) whether internal validation reviews are conducted. In the comments section, describe whether the law aligns with best practice and note any recommendations for regulatory reform.

- a. Describe the geographic coverage of vital statistic.** Note whether the entire country is covered, and whether statistics are disaggregated major and minor subdivisions, principal towns cities, and urban/rural.

Citation:

Comments:

- b. Are vital statistics compiled centrally?** If not, are vital statics compiled according to uniform standards across the country?

Citation:

Comments:

- c. Describe any processes for internal validation, if known.**

Citation:

Comments:

5. Regular Publication of Recent Data

Best practice: It is important that vital statistics are current when published to ensure up-to-date information is available for decision-making. Detailed tabulations of each type of vital event, cross-classified by its demographic and socioeconomic characteristics, should be published at least annually.¹¹ In addition, total monthly or quarterly summary counts of vital events should be made available on a time schedule prompt enough to provide information for decision-making.¹² Even if civil registration is not complete, tabulations should be prepared and users should be provided with the information available,

⁹ United Nations, Principles and Recommendations for a Vital Statistics System, Revision 3, New York, 2014, paragraph 213.

¹⁰ United Nations, Guidelines for the Legislative Framework for Civil Registration, Vital Statistics and Identity Management Systems, New York, 2019, Para. 490-492.

¹¹ United Nations, Handbook of Vital Statistics Systems and Methods Volume I: Legal, Organizational, and Technical Aspects, New York, 1991. P. 46, para. 333.

¹² United Nations, Principles and Recommendations for a Vital Statistics System, Revision 3, New York, 2014. Para. 38.

along with the level of completeness of registration.¹³ Although important, timeliness should not supersede completeness and accuracy.¹⁴

The data used to derive vital statistics must be timely. Therefore, late or delayed registrations should not be included in vital statistics for a specified time period if the event did not occur in that time period. For example, if a birth occurred in 2015 but was not registered until 2016, the birth should not be included in vital statistics for 2016.

Guidance: Answer the questions below. In the comments section, describe whether the law aligns with best practice and note any recommendations for regulatory reform.

a. Describe the frequency of vital statistics publication (e.g., yearly, quarterly, monthly).

Citation:

Comments:

b. Describe the timeliness of data in reports. Note how long after the close of the year annual statistics are published (e.g., statistics for 2020 are published in June 2021).

Citation:

Comments:

c. If known, describe procedures to separate data from delayed registration from timely registrations.

Citation:

Comments:

6. Information Collected

Best Practice: In addition to the legal information necessary for registering a vital event (i.e., the information entered into the register), the UN recommends information that should be collected for statistical purposes, broken down into high-priority information, which every country should strive to collect at registration, and lower-priority information, which can gradually be added to the registration process as resources and technology permit.¹⁵ It is necessary to collect this information in order to generate the UN recommended tabulations, discussed below in Section 7.

Guidance: To complete the worksheets below, review the laws and civil registration forms to determine what information is collected during registration of birth, death, foetal death/stillbirth, marriage and divorce. Fill in the "Actual Practice" column for each vital event based on current practice in your country.

¹³ United Nations, Principles and Recommendations for a Vital Statistics System, Revision 3, New York, 2014. Para. 240.

¹⁴ United Nations, Principles and Recommendations for a Vital Statistics System, Revision 3, New York, 2014. Para. 576.

¹⁵ U.N. Principles and Recommendations for a Vital Statistics System, Revision 3, para. 66, Table III.1

Place an "X" in the box if the information is collected. Note that high priority topics are indicated by a solid shape (e.g., ●) and low priority topics are indicated by a non-solid shape (e.g., ○). In the comments section below each worksheet, note any UN high priority topics that are not collected during registration.

Information Collected at Birth Registration

	Best Practice: Live Birth	Actual Practice: Live Birth
Characteristic of Event [● = High Priority, ○ = Lower Priority]		
Date and Place of Registration	●	
Date and Place of Occurrence	●	
Attendant at birth	●	
Type of place of occurrence (hospital, home, etc.)	○	
Type of Birth (twin, triplet, etc.)	●	
Characteristics of Newborn [● = High Priority, ○ = Lower Priority]		
Sex	●	
Weight at birth	●	
Characteristics of Mother/Father [Mother / Father = high priority, <i>mother / father</i> = Lower Priority]		
Date of birth	Mother / Father	
Marital Status	Mother / Father	
Educational Attainment	Mother / Father	
Literacy status	<i>mother / father</i>	
Ethnic and/or national group	<i>mother / father</i>	
Citizenship	<i>mother / father</i>	
Economic activity status	<i>mother / father</i>	
Usual occupation	<i>mother / father</i>	
Place of usual residence	Mother / Father	
Duration of residence in usual place	Mother / father	
Place of previous residence	<i>mother / father</i>	
Place/country of birth	Mother / father	
Date of last menstrual period	<i>mother</i>	
Number of prenatal visits	<i>mother</i>	
Month of pregnancy prenatal care began	<i>mother</i>	
Children born alive to mother during her entire lifetime	Mother	
Children born alive to mother during her entire lifetime and still living	<i>mother</i>	
Foetal deaths to mother during her entire lifetime	Mother	
Date of last previous life birth	Mother	
Date of marriage	Mother	

Citations:

Comments:

Information Collected at Death Registration

	Best Practice: Death	Actual Practice: Death
Characteristic of Event [●=High Priority, ○= Lower Priority]		
Date and Place of Registration	●	
Date and Place of Occurrence	●	
Cause of Death*	●	
Manner of Death	○	
Whether autopsy findings used to establish COD	○	
Death occurring during pregnancy, childbirth, puerperium (for females 15-49 years of age)	○	
Certifier	●	
Attendant at birth (for deaths under 1 year of age)	●	
Type of place of occurrence (hospital, home, etc.)	○	
Characteristics of Decedent [●=High Priority, ○= Lower Priority]		
Date of birth	●	
Sex	●	
Marital Status	●	
Educational Attainment	○	
Literacy status	○	
Ethnic and/or national group	○	
Citizenship	○	
Economic activity status	○	
Usual occupation	○	
Whether birth was registered (for deaths under 1 year of age)	○	
Born in wedlock (for deaths under 1 year of age)	○	
Place of usual residence	●	
Place of usual residence of mother (for deaths under 1 year)	●	
Duration of residence in usual place	○	
Place of previous residence	○	
Place/country of birth	○	

* Cause of Death is a high priority topic. However, lack of information on cause of death should not prevent death registration.

Citations:

Comments:

Information collected at Foetal Death (Stillbirth) Registration or Reporting

	Best Practice: Foetal Death	Actual Practice: Foetal Death
Characteristic of Event [●=High Priority, ○= Lower Priority]		
Date and Place of Registration	●	
Date and Place of Occurrence	●	
Attendant at birth	○	
Type of Birth (twin, triplet, etc.)	○	
Type of place of occurrence (hospital, home, etc.)	○	
Cause of Foetal Death	○	
Certifier	○	
Characteristics of Foetus [●= High Priority, ○= Lower Priority]		
Sex	●	
Weight at delivery/stillbirth	○	
Delivered in wedlock	○	
Date of last menstrual period of mother (gestational age is derived from this)*	○	
Characteristics of Mother/Father [Mother / Father = high priority, <i>mother / father</i> = Lower Priority]		
Date of birth	Mother/Father	
Educational Attainment	<i>mother/father</i>	
Literacy status	<i>mother/father</i>	
Ethnic and/or national group	<i>mother/father</i>	
Citizenship	<i>mother/father</i>	
Economic activity status	<i>mother/father</i>	
Usual occupation	<i>mother/father</i>	
Place of usual residence	Mother/Father	
Duration of residence in usual place	<i>mother/father</i>	
Place of previous residence	<i>mother/father</i>	
Ethnic and/or national group	<i>mother/father</i>	
Citizenship	<i>mother/father</i>	
Place of birth	<i>mother/father</i>	
Number of prenatal visits	<i>mother</i>	
Month of pregnancy prenatal care began	<i>mother</i>	
Children born alive to mother during her entire lifetime	Mother	
Children born to mother during her entire lifetime and still living	<i>mother</i>	
Foetal deaths to mother during her entire lifetime	Mother	
Date of last previous life birth	Mother	
Date of marriage	Mother	

*Note: Although the UN designates “date of last menstrual period of mother” as lower priority, in practice this is treated like a high priority topic because stillbirths are reported using gestational age as a threshold criteria (see guidance above).

Information collected at Marriage Registration

	Best Practice: Marriage	Actual Practice: Marriage
Characteristic of Event [● = Higher Priority , ○ = Lower Priority]		
Date of occurrence	●	
Date of registration	●	
Place of occurrence	●	
Place of registration	●	
Type of marriage	○	
Characteristics of Spouses (each separately) [● = High Priority ○ = Lower Priority]		
Date of birth	●	
Marital Status (previous)	○	
Number of previous marriage	○	
Educational attainment	○	
Literacy status	○	
Economic activity status	○	
Usual occupation	○	
Ethnic and/or national group	○	
Citizenship	○	
Place of usual residence	●	
Duration of residence in usual place	○	
Place of previous residence	○	
Place/country of birth	○	

Citations:

Comments:

Information Collected at Divorce Registration

	Best Practice: Divorce	Actual Practice: Divorce
Characteristic of Event [● = High Priority , ○ = Lower Priority]		
Date of occurrence	●	
Date of registration	●	
Place of occurrence	●	
Place of registration	●	
Characteristics of Spouses/Divorces (each separately) [●=High Priority, ○=Lower Priority]		
Date of birth	●	
Number of previous marriage	○	
Type of marriage being dissolved	○	
Number of dependent children of divorced persons	○	
Number of children born alive to the marriage being dissolved	○	
Date of marriage	●	
Mode of dissolution of previous marriage	○	
Educational attainment	○	
Literacy status	○	
Economic activity status	○	
Usual occupation	○	
Ethnic and/or national group	○	
Place of usual residence	●	
Duration of residence in usual place	○	
Place of previous residence	○	
Place/country of birth	○	
Place of occurrence of marriage being dissolved	○	

Citation:

Comments:

7. Minimum List of Tabulations

Best practice: Countries should publish, at least annually, a series of tabulations calculated from vital event data. The UN Principles and Recommendations provides a recommended minimum list of tabulations, which disaggregate vital events by socioeconomic and demographic data.¹⁶ These minimum tabulation tables are set out below.

Guidance: Review recent available vital statistics and describe the tabulations generated for live births, deaths, cause of death, infant death, foetal death, marriage, divorce and summary tables. Compare these vital statistics to the tabulation tables recommended by the UN. In the comments section, analyze whether the UN minimum tabulations are being produced.

Describe the tabulations contained in recent vital statistics publications. Note the socioeconomic and demographic topics that are cross tabulated with each of the vital events below.

- a. Live birth:
- b. Death:
- c. Cause of death:
- d. Infant death:
- e. Foetal death:
- f. Marriage:
- g. Divorce:
- h. Summary:

Citation:

Comments:

Minimum list of tabulations:

Live births by...	
	place of occurrence & sex of child
	place of occurrence & place of usual residence of mother
	place of registration, month of occurrence, & month of registration
	month, place of occurrence & place of usual residence of mother
	age, place of usual residence, & marital status of mother
	age of father
	place of usual residence, age, & educational attainment of mother
	educational attainment & age of mother & live-birth order
	place of usual residence & age of mother, sex of child & live-birth order
	live-birth order & interval between last & previous live births to mother
	place of birth, place of usual residence, & age of mother
	place of usual residence & age of mother & legitimacy status
	place of occurrence, site of delivery, & attendant at birth
	site of delivery, attendant at birth, & birth weight
	birth weight & place of usual residence & educational attainment of mother

¹⁶ United Nations, Principles and Recommendations for a Vital Statistics System, Revision 3, New York, 2014. Pp. 157-159.

	gestational age, place of usual residence of mother & birth weight
	birth weight, place of usual residence of mother & month in which prenatal care began
	age & place of usual residence of mother & month in which prenatal care began
	live-birth order, place of usual residence of mother, & month in which prenatal care began
	place of usual residence of mother & duration of residence at the current usual residence

Deaths by...	
	place of usual residence & sex of decedent
	place of occurrence & place of usual residence & sex of decedent
	month & place of occurrence & place of usual residence of decedent
	place of registration, month of occurrence, & month of registration
	place of occurrence & site of occurrence
	place of usual residence, age & sex of decedent
	age, sex, place of usual residence & marital status of decedent
	place of usual residence, age, sex, & educational attainment of decedent
	sex, cause of death, place of usual residence, & age of decedent
	month of occurrence & cause of death
	Place of occurrence, sex of decedent, & type of certification
	age & type of usual activity of decedent
	Maternal deaths by cause of death & age of woman

Cause of Death by...	
	sex (standard is to list at least 10 leading causes of death)
	age group (standard is to list at least 10 leading causes of death)
	communicable disease, non-communicable disease or external cause (presented by age group and sex)
	manner of death: disease, accident, intentional self-harm, assault, legal intervention, war, pending investigation, unknown or manner undetermined (presented by age group and sex)

Infant deaths by...	
	place of occurrence & place of usual residence of mother
	month of occurrence & sex & age of child
	place of usual residence of mother & age & sex of child
	cause of death, place of usual residence of mother & sex & age of child

Live births & foetal deaths	
	Confinements by type of birth & status of issue (live-born or born dead)
	Confinements by birth order & birth weight, for each type of birth
	Confinements by type of birth & age of mother, for each sex

Foetal deaths by...	
	age & place of usual residence of mother & sex of foetus
	sex & legitimacy status of foetus
	age of mother & legitimacy status & sex of foetus
	place of usual residence of mother, sex, & birth weight

	place of usual residence of the mother & gestational age & birth weight
	age & place of usual residence of mother & birth weight
	sex & gestational age
	age of the mother & total birth order (live births plus foetal deaths)
	month of pregnancy in which prenatal care began & number of visits & place of usual residence of the mother
	place of occurrence & type of certification

Marriages by...	
	place of usual residence of groom and month of occurrence
	place of usual residence of groom and age of bride and of groom
	age and previous marital status of bride and of groom
	educational attainment of bride and of groom
	occupation of bride and of groom

Divorces by...	
	place of usual residence husband
	age of husband and wife
	duration of marriage and age of husband and wife
	duration of marriage and number of dependent children
	educational attainment of husband and wife
	occupation of husband and wife
	number of previous marriages of husband and wife

Summary Tables	
	Live births, deaths, infant deaths, foetal deaths, marriages, & divorces by place of usual residence
	Crude birth rate, crude death rate, infant mortality rate by sex, foetal mortality rate, crude marriage rate, & crude divorce rate, by place of usual residence
	Time series of live births by place of usual residence of mother (past 10 years)
	Time series of deaths by place of usual residence of decedent (past 10 years)
	Time series of infant deaths by place of usual residence of mother (past 10 years)
	Time series of foetal deaths by place of usual residence of mother (past 10 years)
	Time series of vital events in the country (past 10 years)