

Session 1

Vital Statistics: Definitions, Concepts and Uses

**SECOND REGIONAL WORKSHOP ON PRODUCTION AND
USE OF VITAL STATISTICS**

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Definitions and concepts

Civil Registration

- Continuous, permanent, compulsory recording of the occurrence and characteristic of vital events, namely, live births, deaths, foetal deaths, marriages, divorces, as well as annulments, judicial separations, adoptions, legitimations and recognitions

Civil Registration System

- Records the occurrence of the events of birth, death, marriage, divorce, annulment, separation, adoption, legitimation and recognition in accordance with the legal requirements of a country. These events are all related to an individual from life to death and all the changes in civil status which may occur during the individual's lifetime

Definitions and concepts

Vital statistics

- 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 concerned
- provide crucial and critical information on the population in a country

Definitions and concepts

Vital statistics

- vital statistics is preferably obtained through a civil registration system as it is the ideal source from which to derive accurate, complete, timely and continuous information on vital events
- vital statistics derived from the civil registration system (and the population registers) can provide annual flow statistics from the smallest civil divisions, a characteristic that no other data collection system can provide

Definitions and concepts

Vital Statistics System

- Collects information by registration or enumeration on the frequency of occurrence of certain vital events, as well as relevant characteristics of the events themselves and of the persons concerned.
- It then compiles, analyses, evaluates, presents and disseminates these data
- The information recorded in the civil registration system is the foundation of a vital statistics system

Definitions and concepts

Vital events

- events concerning life and death of individuals, as well as their family and civil status
- concern life and death and include live births, deaths and fetal deaths
- dual events - those occurring simultaneously to two individuals, which cannot occur again to any of the two individuals without a previous change to their status;
 - include marriage, registered partnerships, separations, divorces, legal dissolutions of registered partnerships and annulment of marriage.

Definitions and concepts

Vital events

- vertical family events – those concerning a descendant and refer to adoptions, legitimation and recognition

Definitions and concepts

Live birth

- complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which after such separation, breathes or shows any other evidence of life, such as beating of the hearth, pulsation of the umbilical cord or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached, each product of such a birth is considered live born

Definitions and concepts

Death

- permanent disappearance of all evidence of life at any time after live birth has taken place (postnatal cessation of vital functions without capability of resuscitation) (this definition excludes foetal deaths)

Foetal death

- death prior to the complete expulsion from its mother womb of a product of conceptions, irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation the foetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles

Definitions and concepts

Marriage

- act, ceremony or process by which the legal relationship of spouses is constituted
- the legality of the union may be established by civil, religious or other means as recognized by the laws of each country
- countries may wish to expand to cover civil unions if they are registered, in that case, registered partnership usually refers to a legal construct, registered with the public authorities according to the laws of each country, that leads to legal conjugal obligations between two persons

Definitions and concepts

Divorce

- final legal dissolution of a marriage, that is, that separation of spouses which confers on the parties the right to remarriage under civil, religious and/or other provisions, according to the laws of each country
- in case a country recognizes registered partnerships, a legal dissolution of a registered partnership refers to the legal final dissolution of such a partnership, according to national laws, conferring the parties the right to re-enter into another partnership or marriage

Definitions and concepts

Annulment

- invalidation or voiding of a marriage by a competent authority, according to the laws of each country, which confers on the parties the status of never having been married to each other

Separation, Judicial

- disunion of married persons, according to the laws of each country, without conferring on the parties the right to remarry

Definitions and concepts

Adoption

- legal and voluntary taking and treating of the child of other parents as one's own, in so far as provided by the laws of each country

Legitimation

- formal investing of a person with the status and rights of a person born in wedlock, according to the laws of each country

Recognition

- legal acknowledgment, either voluntary or compulsory, of the paternity of a child born out of wedlock.

Uses of vital statistics

Demographic uses of vital statistics:

- Preparations of population estimates and projections
- Studies of mortality, fertility and nuptiality
- Construction of life tables

Vital statistics are also invaluable for planning, monitoring and evaluating various programmes such as those dealing with primary health care, social security, family planning, maternal and child health, nutrition, education, public housing, etc.

Uses of vital statistics

- essential for setting targets and evaluating social and economic plans, including the monitoring of health and population intervention programmes, and the measurement of important demographic indicators of levels of living or quality of life, such as the expectation of life at birth and the infant mortality rate
- for planning, monitoring and evaluating various programmes such as those dealing with primary health care, social security, family planning, maternal and child health, nutrition, education, public housing, etc.

Uses of vital statistics

- when civil registration input does not exist or is deficient, some countries may have to recourse to population census or a household sample survey to estimate the necessary vital statistics through retrospective questions on fertility, mortality and nuptiality
- fertility, mortality and nuptiality statistics may also be collected by instituting sample registration areas
- in some countries, vital statistics needed for planning purposes rely on these other sources of data, together with the application of indirect techniques of demographic estimation

Uses of vital statistics

- even though population censuses, sample surveys, sample registration may provide estimates of the levels of fertility, mortality, foetal mortality, marriage and divorce, and, in the case of sample registration, event estimates on mortality by cause of death, they are not a substitute for a civil registration system since they cannot provide such details in regular, annual intervals with universal coverage

Uses in estimating the size and growth of a population

- statistics on births and deaths are essential to prepare population estimates and projection for the entire country as well as for different levels of geographic areas within a country
- because a population increases by the addition of live birth and decreases by the subtraction of deaths, and is impacted by migration, information about the number of live births and deaths occurring in a population is crucial for estimating the natural increase (or decrease) and the annual change in population size and structure for that population

Uses in estimating the size and growth of a population

- knowledge of the size and growth of a population is prerequisite for national and regional planning and allocating resources
- information on the annual population estimates is also indispensable for the calculation of a majority of indicators
- one of the advantages of vital statistics generated from civil registration is the geographical and small population group coverage

Uses in estimating the size and growth of a population

- adequate civil registration data that achieve a high level of coverage at the national level also have the potential of allowing the estimation of differentials at the regional level, thus providing invaluable information for regional planning and the appropriate allocation of resources in such areas as education, health care and social security at the appropriate administrative level

Uses in implementing and evaluating public health, maternal and child health, other government programs

- provide evidence to plan, monitor and evaluate government programmes on public health, on improvement of maternal and child health and on other government programmes
- for the assessment and monitoring of the health status of a population and for the planning of adequate health interventions
- timely recording of deaths by cause can provide early insights into trends in disease prevalence, thus helping to design prevention or intervention strategies

Uses in implementing and evaluating public health, maternal and child health, other government programs

- reliable and timely cause of death data also make it possible to provide real-time public health alert on deaths caused by rare diseases
- information on unusual patterns of deaths and deaths by causes may suggest the need for intervention to public health officials
- maternal care and child health programmes can be carried out effectively by the availability of statistics on births, foetal deaths, maternal and infant deaths

Uses in implementing and evaluating public health, maternal and child health, other government programs

- data on births, foetal deaths, maternal and infant deaths, classified by place of occurrence (hospital, home and urban/rural places), birth weight, gestation age, parity, age of mother and the like, will provide useful information for planning, operating and evaluating services to prevent maternal and infant deaths
- live births classified by weight at birth and other topics such as the delivery method, place of occurrence, prenatal care and maternal characteristics can be used to study the impact of delivery method, experience of physicians, level of prenatal care and maternal characteristics on malformations and birth injuries

Uses in implementing and evaluating public health, maternal and child health, other government programs

- follow-up interventions can be made in terms of providing training to physicians and pregnant women
- the increasing importance given to the registration of foetal deaths is in recognition of their value in measuring perinatal mortality and pregnancy outcomes
- the matching of birth to infant death records will provide additional characteristics of the would-be-mother, such as age, marital status and socio-economic status, for intensive studies of pregnancy and birth outcomes

Uses in implementing and evaluating public health, maternal and child health, other government programs

- family planning services require fertility data by age of mother and parity for the planning, implementation, monitoring and evaluation of family planning programmes
- marriage rates and age at first marriage are also useful data for an understanding of the dynamics of fertility
- data on marriages and divorces allow analysis on the impact of divorces on mother and children

Uses in implementing and evaluating public health, maternal and child health, other government programs

- single mothers and their children constitute a particularly vulnerable group in most populations; such information may be useful to make legal provisions to protect the rights of mother and children at divorces and also to allocate resource accordingly
- linking of fertility data with other administrative data such as education statistics provides opportunity to study the impact of maternal characteristics on early childhood development

Uses in implementing and evaluating public health, maternal and child health, other government programs

- by linking vital statistics with health service provision, one can assess the quality of service provision provided; for example, analysis can be done on the impact of different types of health service such as public versus private practices on birth outcomes
- significance in other societal areas of interest, especially with regard to the study of the establishment and maintenance of families as units of society

Uses in implementing and evaluating public health, maternal and child health, other government programs

- the registration of births, marriages and divorces, as well as other family events – adoptions and so forth, for instance, provides tangible proof of the official recognition of the family formation process, and can yield valuable insights about the evolution of that process through time.
- assessment of the incidence of out-of-wedlock births

Uses in understanding the economic and social aspects of a population

- information on the number of live births occurring over a time period, classified by various characteristics of the women giving birth, constitutes the basis for analysis of the dynamics of reproduction
- information on deaths, classified by various characteristics of the deceased, especially age and sex, is necessary for calculating life-tables and estimating the probability of dying at various ages

Uses in understanding the economic and social aspects of a population

- the fertility and mortality estimates derived are essential for a variety of purposes including
 - an understanding of the growth dynamics of the population concerned
 - an assessment of the human aspects of socioeconomic development
 - measurement of the risks of dying for males and females at specific ages for insurance and social security purposes

Uses in producing development indicators

- continuity in the availability of good quality vital statistics and their subsequent analysis and interpretation are essential for setting targets and evaluating social and economic plans, including
 - monitoring of health and population intervention programmes
 - measurement of important demographic and social indicators of levels of living or quality of life

Uses in producing development indicators

- vital statistics are the basic data for the calculation of various indicators of fertility and mortality which are important indicators to measure development progress
 - total fertility rate
 - infant mortality rate
 - under-five mortality rate
 - maternal mortality ratio
 - life expectancy at birth
 - crude death rate
- produce annual population estimates with additional information on migration

Uses in producing development indicators

- population estimates are the denominators for compiling most of the indicators, not only fertility and mortality indicators; for example, total population figure is needed to calculate the proportion of population below \$1 (PPP) per day - an indicator which may measure against progress made in eradicating extreme poverty and hunger
- vital statistics based population estimates are required for calculation of some of the social and health indicators such as
 - literacy rate of 15 to 24 year olds
 - HIV prevalence among population aged 15 to 24
 - proportion of population using an improved drinking water source

Other uses

- Birth, death and marriage rates and data on family size and composition are important information in planning for public housing
- trends of the birth and marriage rates are indicators of the future house needs, size of school population and are essential in planning and providing school facilities, as well as in the training of teachers

Other uses

- useful in planning for future markets of consumer goods such as medicine, food, clothing and furniture; if the birth rate remains high, it may be expected that
 - demand for maternity clothing will remain high
 - medicine, food, clothing, equipment and furniture will continue to be in demand
 - housing and house furnishings will be at a premium price
- statistics on births and projections are useful for commercial firms and enterprises to plan for stocks of clothing, toys and play equipment and the like, for growing children

Other uses

- the number of marriages has importance for the construction industry and the trend in marriage rate will influence the business prospects of clothing and furniture manufacturers

Uses of vital statistics

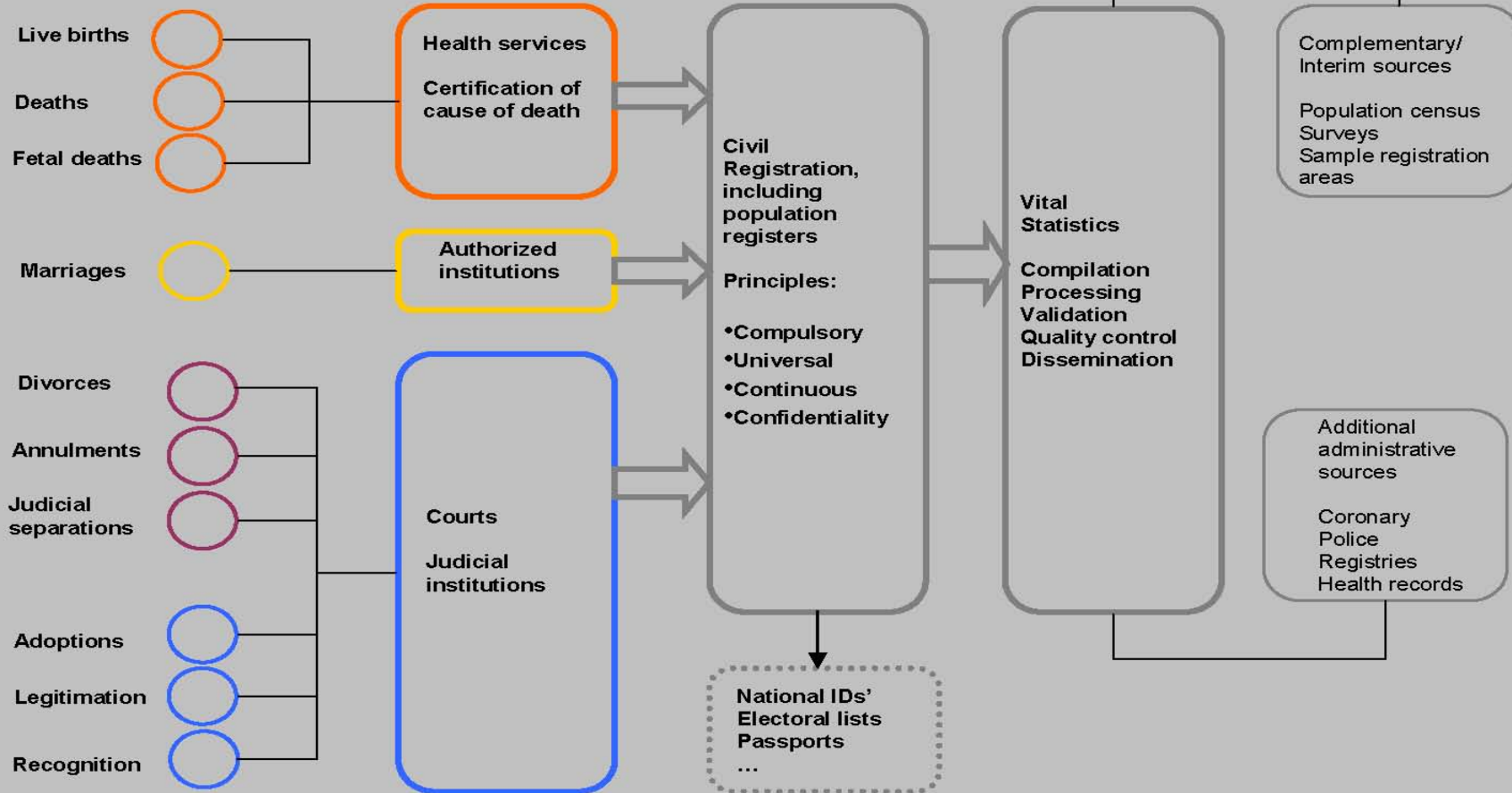
- CONCLUSION
 - vital statistics from different sources need to be of highest quality to serve as better information for better decisions
 - any vital statistics produced should be aiming for highest quality in terms of completeness, correctness, availability and timeliness.
 - real time alert on mortality that can be provided to public health officials requires that death data are timely and accurate
 - different sources of vital statistics should employ the same concept and definitions of vital events to enhance complementarities of the different sources and to ensure national and international comparability

Vital statistics system

- components of vital statistics system
 - legal registration
 - statistical reporting
 - collection, compilation and dissemination of statistics pertaining to vital events
- vital events of interest are
 - live births
 - adoptions
 - legitimations
 - recognitions
 - deaths and foetal deaths
 - marriages
 - divorces, separations and annulments of marriage

Vital statistics system

Vital Statistics System



Principles for the collection and compilation of Vital statistics

- Universal coverage
- Continuity
- Confidentiality
- Regular dissemination