

DEM 2110

Civil Registration and Vital Statistics

---

The University of Zambia

# Resources

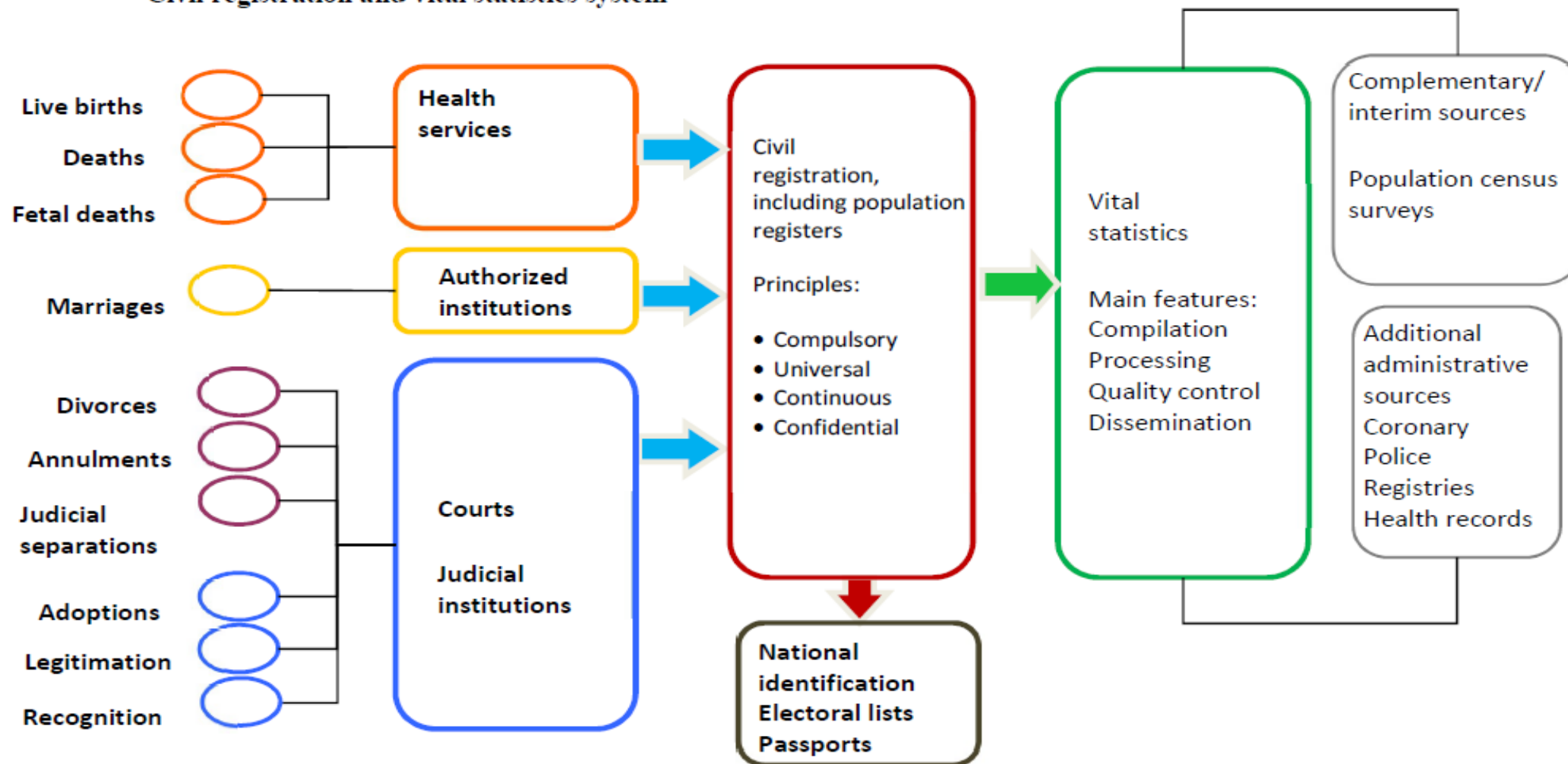
---

- Handbook on Civil Registration and Vital Statistics Systems: Management, Operation and Maintenance 2018 @

<https://unstats.un.org/unsd/demographic-social/Standards-and-Methods/files/Handbooks/crvs/crvs-mgt-E.pdf>

- International Statistics Program – CRVS 2015 Training manual
- CDC and Vital Strategies Improvement
- Zamstat website/DNRPC (Ministry of Home Affairs)

## Civil registration and vital statistics system



Source: *Principles and Recommendations for a Vital Statistics System*, Rev. 3, para. 26.

# Overview of Civil Registration and Vital Statistics Systems

---

# Overview

---

- Purpose of Civil Registration System
- Purpose of Vital Statistics system
- Types of Vital Records
- Uses of Vital Records



Picture from WHO web site; Health Metrics Network  
[http://www.who.int/healthmetrics/documents/Components\\_of\\_a\\_strong\\_HIS.pdf](http://www.who.int/healthmetrics/documents/Components_of_a_strong_HIS.pdf)

# Civil Registration System

---

- A system government uses to record vital events as required by laws or regulations of the country
- Main purpose – To establish the legal documents required by law
- Goal – To record all vital events occurring in the country as they occur

## **United Nations Definition:**

**“the continuous, permanent, compulsory and universal recording of the occurrence and characteristics of vital events pertaining to the population as provided through decree or regulation in accordance with the legal requirements in each country.”**

**The civil registration system is based on laws and regulations.**

# Vital Statistics System

---

The process of collecting, compiling and analyzing information from vital events filed through the civil registration system

- Main purpose – Presentation of vital event data in statistical form
- Goal – To have accurate data from all vital events occurring in the country

**United Nations Definition:**

“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 person concerned, and

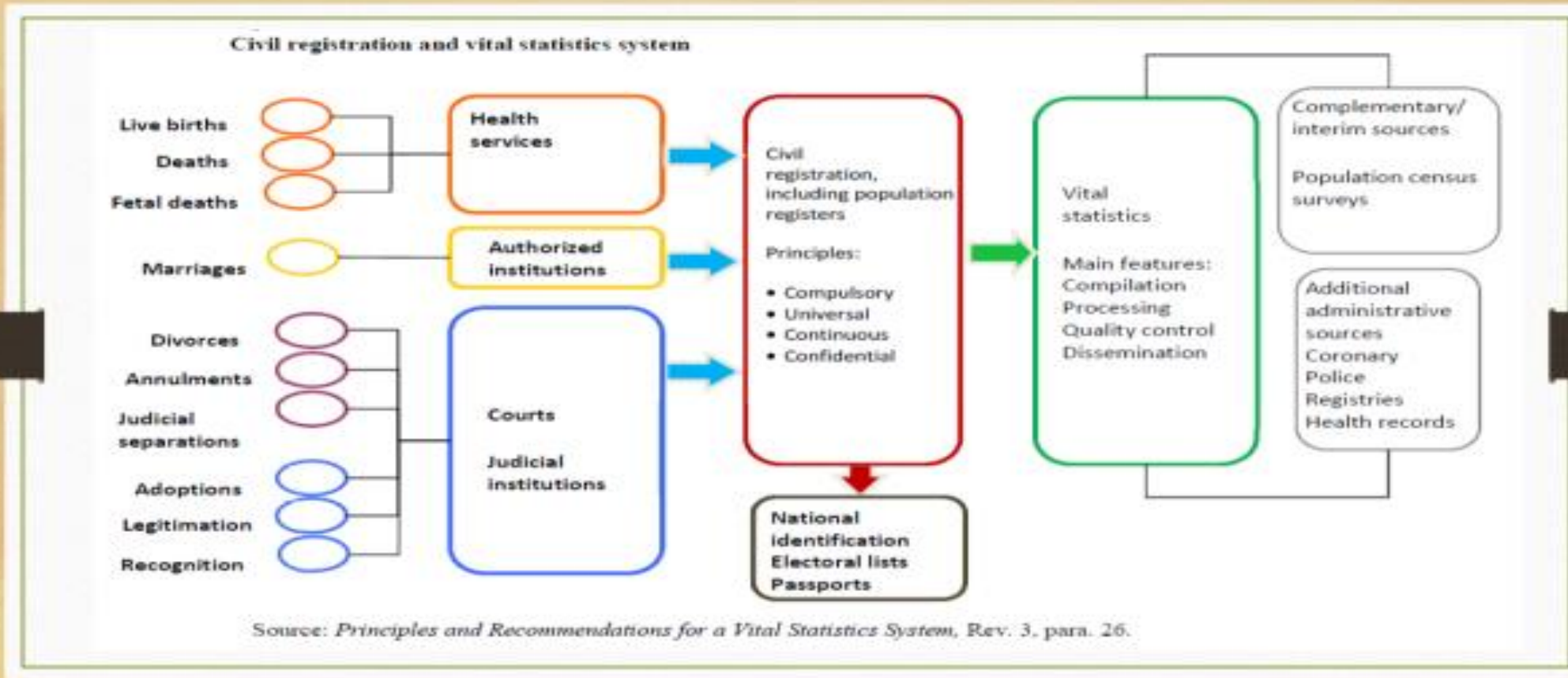
(b) compiling, processing, analyzing, evaluating, presenting and disseminating these data in statistical form.”

**Emphasis: The main source of vital statistics is the Civil Registration System.**

In cases where the Civil Registration System does not provide complete coverage of a country, vital statistics data may be compiled for some cities or other geographic areas where coverage is good.

However, the ultimate goal should be to have complete coverage of all vital events occurring in the country through the Civil Registration System.

# Relationship



# Discuss

---

- What other methods can be used to supplement the data if civil registration does not provide complete coverage of the country?
- How does civil registration differ from a census?
- How does civil registration differ from a sample survey?

Other methods – such as population censuses and sample surveys – may be used to supplement vital statistics data, especially in countries or in parts of countries without complete coverage of their Civil Registration Systems. In some cases administrative records from other government agencies such as those that provide health or social services may be used to supplement data in the vital statistics system.

Civil registration system is different from a census since it is continuous and permanent rather than periodic . However, census estimates of population provide denominators or population-at-risk when calculating vital statistics rates.

An ideal civil registration system is different from a sample in that it is universal and ongoing so it does not have sampling error or recall error. However, there is still variation related to the number of events recorded

# Essential characteristics

---

- The CR method is mainly characterized as:
  - Compulsory
  - Permanent and continuous
  - Universal coverage of the population and
  - Confidentiality of the information pertaining to individuals.

# Compulsory

---

- It is backed by well structured legal grounds (Read the CAPS in the Laws of Zambia)
- Linked to the idea of imposing penalties for those who fail to comply with the registration law
- It is however difficult to sanction this law effectively (why?)

# Types of Vital Records

---

There are 10 types recognized by UN

- **Main records for health analyses**

1. Birth

2. Death

- **Used for health analyses in some countries**

3. Fetal Death

4. Marriage

5. Divorce

The United Nations recognizes 10 types of vital records that are registered in a civil registration system.

Brief definitions of the other types of vital records can be presented here since they will not be covered in detail in this course.

Marriage -- provides legal relationship of husband and wife

Divorce -- legal termination of a marriage with right of parties to remarry

# Types of Vital Records

---

- **Other records for legal purposes**

6. Annulment of Marriage

7. Judicial Separation of Marriage

8. Adoption

9. Legitimation

10. Recognition

Definitions of the other records are as follows:

Annulment of Marriage -- invalidation or voiding of marriage

Judicial Separation of Marriage -- parting of married persons without the right to remarry

Adoption-- legal taking a child of other parents as one's own

Legitimation -- giving a person the rights of a person born in wedlock

Recognition -- legal acknowledgement of paternity of a child born out of wedlock

The ten types of records given here are those defined by the United Nations.

Countries may have other types of records recorded in their civil registration systems in addition to these or they may not include all of these types.

Note also, that different names may be used for some of these records in different countries.

---

# Uses of CR Records and Vital Statistics

## Uses of Vital Records

SOURCES: Handbook on Training in Civil Registration and Vital Statistics Systems, Series F, No. 84, United Nations, New York, 2002, Module 2

	<b>Individual</b>	<b>Administrative</b>	<b>Vital Statistics</b>	<b>Public Health Programs/ Research</b>
<b>Birth</b>	Proof of identity Proof of age & date of birth Proof of place of birth Citizenship Parentage	Population registries Identity card systems Election rolls Social programs National security	Population estimates & predictions Natality rates & trends Maternal & infant health	Sampling frame for research studies Identify population at risk Fertility data for family planning
<b>Death</b>	Evidence of death for heirs Collect insurance Probate estate	Purge population registry & election rolls Genealogical research	Population estimates & predictions Mortality rates & trends Study specific diseases Life tables	Monitor infectious diseases Study chronic disease patterns Infant & maternal mortality studies Accident, suicide & homicide studies
<b>Marriage /Divorce</b>	Legal proof of marriage or divorce & date and place	Administer family benefit programs Genealogical research	Marriage & divorce rates and trends	Demographic studies Study family patterns

# Discuss

---

- Give some examples of how (you have used) vital records (are used) in the past.
- Any anticipated problems obtaining or using the records, and if so, what were/are they?

Some possible examples:

Birth records – obtain ID documents, passport, other travel, driver's license

Death records – settle family estate, use insurance policy, close bank accounts

Marriage records – for women, change surname (if appropriate to country)

Problems could be specific to situations or areas

for example:

- having to travel to a place of birth, death, or marriage to obtain copy

- having to wait a long time

- errors on the record that may need to be corrected

# Birth Records

These materials have been developed by the National Center for Health Statistics, International Statistics Program, Hyattsville, Md., as part of the CDC Global Program for Civil Registration and Vital Statistics Improvement.

# Outline

---

- Definition
- Information Collected
  - Legal & administrative purposes
  - Statistical purposes
  - Derived data
- Problems with data
- Fetal deaths

# Definition

---

- A live birth is the *delivery of a child that breathes or shows signs of life regardless of the length of pregnancy.*

## Statistical definition of Live Birth

“the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life such as beating of the heart, 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.”

From *International Statistical Classification of Diseases and Related Health Problems*, 10th Revision, Volume 2, Instruction Manual, World Health Organization, Geneva, 1993

SOURCES: *International Statistical Classification of Diseases and Related Health Problems, 10<sup>th</sup> Revision, Volume 2, Instruction Manual*, World Health Organization, Geneva, 1993

# Definition

---

- All live births should be registered
  - Does not depend on gestational age
  - Does not matter if is infant alive or dead at time of registration
- If an infant is born alive and then dies
  - Live birth should be registered
  - Death should be registered
  - An infant born alive that dies within first year is counted as an infant death (not a fetal death) for statistical purposes

SOURCES: *International Statistical Classification of Diseases and Related Health Problems, 10<sup>th</sup> Revision, Volume 2, Instruction Manual*, World Health Organization, Geneva, 1993

# Definition

---

- If multiple pregnancy
  - Each member born alive registered separately as live birth
  - Members not born alive registered as fetal deaths

## Birth Information that could be Collected for Legal and Administrative Use

- Date of birth
- Time of birth
- Place of birth
- Full name of child
- Sex of child
- Type of birth
- Mother's name
- Father's name
- Marital status of mother
- Other information about mother
  - Date of birth or age
  - Place of birth or nationality
  - Names of mother's parents
  - Identification number
- Other information about father
  - Date of birth or age
  - Place of birth or nationality
  - Names of father's parents
  - Identification number
- Place of residence of mother or family
- Duration at residence
- Type of place of birth
- Attendant at birth
  - Name
  - Type (physician, midwife, nurse, etc.)
  - Address
  - License number
- Date of registration
- Place of registration
- Name and relationship of informant
- Attestation statement with signature of attendant, informant or registrar
- Birth registration number

## Birth Information that could be Collected for Statistical Purposes

- **Characteristics of the father**
  - Educational level
  - Occupation
  - Ethnicity, race or religion
- **Characteristics of the mother**
  - Educational level
  - Occupation
  - Ethnicity, race or religion
- **Medical information related to birth**
  - Birth weight of child
  - Length of gestation
  - Number of previous children born alive to mother
  - Number of fetal deaths (or stillborn children) of mother
  - When medical care began
  - Number of prenatal visits
- **Other medical information on mother**
  - Date of last previous live birth (or interval since last live birth)
  - Weight prior to pregnancy and weight at delivery
  - Medical conditions that may cause problems during pregnancy
  - Method of delivery
  - Other complications of delivery or pregnancy
  - Crown-heel length of infant at delivery
  - Abnormal conditions of the infant
  - Congenital anomalies

SOURCES: *Principles and Recommendations for a Vital Statistics System, Revision 2*, United Nations, New York, 2001, Chapter II (also following slide, “Birth Information Collected – Derived Data”)

## Birth Information Collected – Derived Data

(Items for statistical purposes not collected directly on birth record but derived from those items and added to computer files for tabulation)

Derived Data Item	Source on Birth Record
<ul style="list-style-type: none"><li>• Age of mother and father</li></ul>	<ul style="list-style-type: none"><li>• Date of birth for mother and father</li></ul>
<ul style="list-style-type: none"><li>• Live birth order</li></ul>	<ul style="list-style-type: none"><li>• Previous births plus this birth</li></ul>
<ul style="list-style-type: none"><li>• Socio-economic indicator</li></ul>	<ul style="list-style-type: none"><li>• Education and/or occupation</li></ul>
<ul style="list-style-type: none"><li>• Detail on residence such as urban, rural, regional, etc.</li></ul>	<ul style="list-style-type: none"><li>• City, town or address of mother's residence</li></ul>
<ul style="list-style-type: none"><li>• Other geographic groupings</li></ul>	<ul style="list-style-type: none"><li>• Residence of mother or place of birth</li></ul>
<ul style="list-style-type: none"><li>• Weight gained by mother during pregnancy</li></ul>	<ul style="list-style-type: none"><li>• Weight prior to birth and weight at delivery</li></ul>
<ul style="list-style-type: none"><li>• Trimester care began</li></ul>	<ul style="list-style-type: none"><li>• Month care began or date of first visit</li></ul>
<ul style="list-style-type: none"><li>• Adequacy of prenatal care</li></ul>	<ul style="list-style-type: none"><li>• Number of visits and date of first visit</li></ul>
<ul style="list-style-type: none"><li>• Birth weight categories<ul style="list-style-type: none"><li>– Low birth weight</li><li>– Very low birth weight</li><li>– Extremely low birth weight</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Birth weight<ul style="list-style-type: none"><li>– Weight less than 2500 grams</li><li>– Weight less than 1500 grams</li><li>– Weight less than 1000 grams</li></ul></li></ul>

# Problems with Birth Data

Problem	Examples
Source and Accuracy of Information	<ul style="list-style-type: none"><li>• Informant does not know correct information</li><li>• Mother does not recall her medical care information</li><li>• Sensitive information not given correctly</li></ul>
Missing Records	<ul style="list-style-type: none"><li>• Birth records not registered in some geographic areas or for some population groups</li><li>• Late records not included in statistical files</li><li>• Records for low weight infants or those who die are known to be poorly registered</li></ul>
Missing Information	<ul style="list-style-type: none"><li>• Medical items often left blank</li><li>• Data skewed due to missing items for some population groups</li></ul>
Errors in Preparation and Processing	<ul style="list-style-type: none"><li>• Transcription errors when data entered in record</li><li>• Coding errors</li><li>• Keying errors</li><li>• Errors in computer software programs</li><li>• Statistical information not correctly linked to legal information when separate collection systems used</li></ul>

SOURCES: *International Statistical Classification of Diseases and Related Health Problems, 10<sup>th</sup> Revision, Volume 2, Instruction Manual*, World Health Organization, Geneva, 1993

# Fetal Deaths

---

- A fetal death is the *delivery of a fetus that does not breathe or show any signs of life regardless of the length of pregnancy.*

## Statistical definition of Fetal Death

“the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation the fetus 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.”

# Fetal Deaths

SOURCES: *International Statistical Classification of Diseases and Related Health Problems, 10<sup>th</sup> Revision, Volume 2, Instruction Manual*, World Health Organization, Geneva, 1993

---

- Registration requirements
  - Not required in all countries
  - Usually only late fetal deaths
  - WHO recommendations for reporting
    - Fetuses weighing at least 500 grams at delivery
    - If weight not available
      - 22 completed weeks of gestational age
      - Or crown-heel length of 25 centimeters

# Fetal Deaths

---

- Information collected
  - Usually same as birth information where appropriate
  - Possibly cause of fetal death
    - Not well reported even in developed countries
- Data
  - Usually combined with birth information
  - Study conditions related to pregnancy
  - Fertility patterns

# Fetal Deaths

---

- Accuracy of fetal/infant death reporting
  - Challenging part of a CR/VS system, particularly for deaths close to birth
  - Infant deaths may be reported as fetal deaths
    - Easier to process emotionally
    - Funeral expenses reduced

# Review

---

- A fetal death is the delivery of a fetus that does not breathe or show any signs of life regardless of the length of the pregnancy.
- WHO recommends reporting of fetal deaths weighing 500 grams or more
- All fetal deaths meeting minimum reporting requirements should be registered
- Any members of a multiple pregnancy not born alive should be registered as fetal deaths
- Data from fetal deaths are usually combined with data from birth records to study conditions of pregnancy