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**DEM 2110**

**Civil Registration and Vital Statistics**

**The University of Zambia**

# Outline

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- Definition and purpose of Civil Registration System
- Definition and purpose of Vital Statistics system
- Types of Vital Records
- Uses of Vital Records

# Readings

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- 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)
- SI No. 44 of 2016 – Birth and Death Registration Rules
- National Strategic Action Plan for reforming and Improving Civil Registration and Vital Statistics 2015-2019
- Vital Statistics Report 2016, 2017

# Civil Registration System

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- 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.

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## 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

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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 (CRS).

In cases where the CRS 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 CRS.

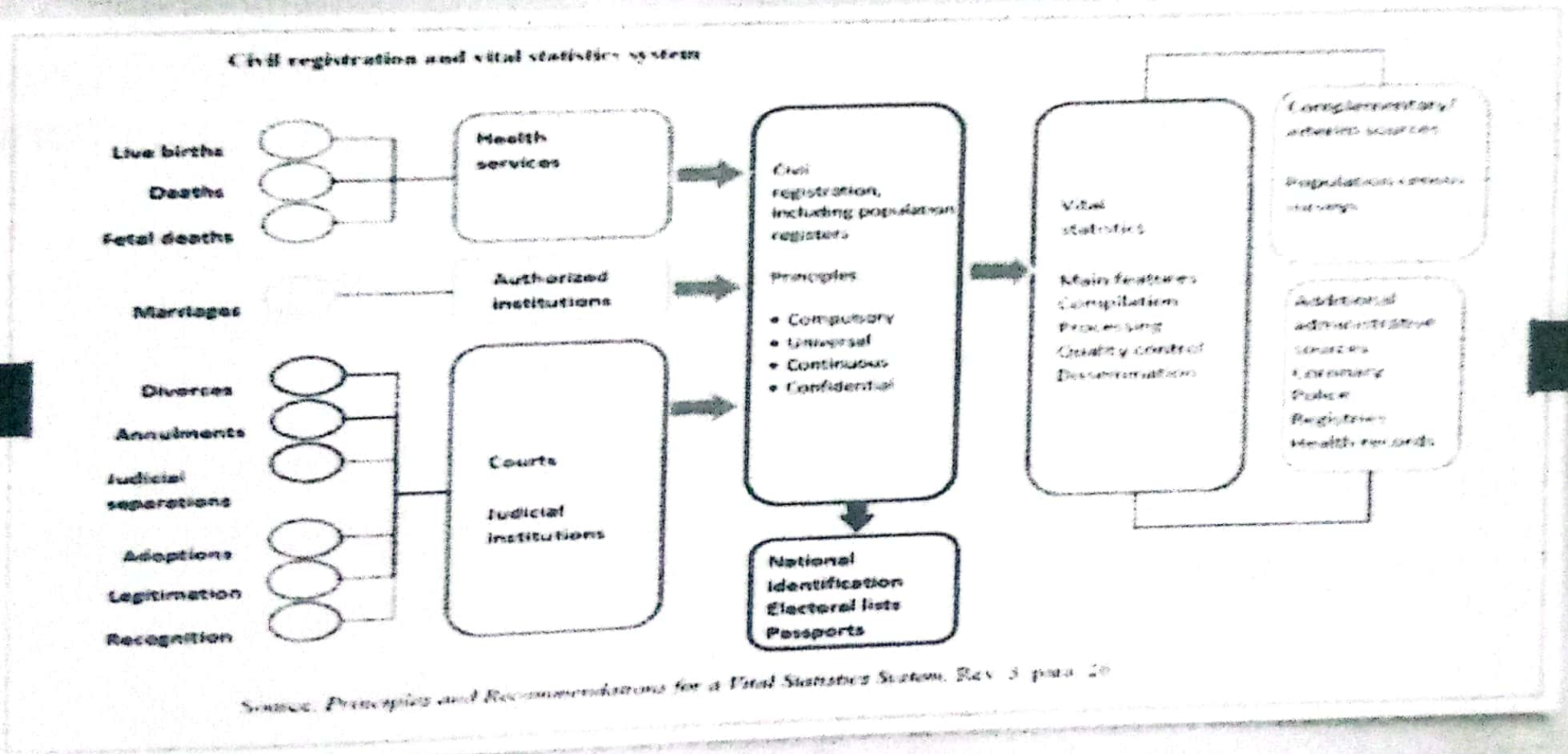
## What are vital statistics?

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In simple terms, "***vital statistics***," refers to the statistical information that can be extracted from the civil registration system, such as the numbers and rates of births and deaths, causes of death, and other measures.



# Relationship



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 CRSs. 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.

CRS 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 CRS is different from a sample survey 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

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- 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

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- It is backed by well structured legal grounds.
- 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?

# Permanent and continuous

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- Requires the existence of a civil registration agency.
- This has to be supported by the enactment of a civil registration law.
- Permanence of the system is a requirement for continuity of registration and vital statistics data, a necessary characteristic for producing meaningful understanding of both current levels as well as trends in vital statistics measures.

# Confidentiality

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- A variety of information about individuals within the population is collected.
- Confidentiality of the information must be protected.
  - Informants should be assured that information **provided will be used only for the purposes described by law and**
  - **in aggregated form where individuals are not identifiable.**

# Types of Vital Events

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- **Other records for legal purposes**
  - 6) Annulment of Marriage
  - 7) Judicial Separation of Marriage
  - 8) Adoption
  - 9) Legitimation
  - 10) Recognition

# Definitions of Vital Events

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- Brief definitions of the other types of vital events are 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.
  - **Annulment of Marriage** -- invalidation or voiding of marriage.

# Definitions

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- **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.

# Definitions

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- The ten types of events given here are those defined by the United Nations.
- Countries may have other types of events recorded in their CRSs 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.

# Birth Records

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## Outline

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

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.

# Definition

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- 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

# Definition

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- All live births should be registered
  - Does not depend on gestational age
  - Does not matter if infant is 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

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

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

- |   |  |
|---|--|
| <ul style="list-style-type: none"><li>• Date of birth</li><li>• Time of birth</li><li>• Place of birth</li><li>• Full name of child</li><li>• Sex of child</li><li>• Type of birth</li><li>• Mother's name</li><li>• Father's name</li><li>• Marital status of mother</li><li>• Other information about mother<ul style="list-style-type: none"><li>– Date of birth or age</li><li>– Place of birth or nationality</li><li>– Names of mother's parents</li><li>– Identification number</li></ul></li><li>• Other information about father<ul style="list-style-type: none"><li>– Date of birth or age</li><li>– Place of birth or nationality</li><li>– Names of father's parents</li><li>– Identification number</li></ul></li></ul> | <ul style="list-style-type: none"><li>• Place of residence of mother or family</li><li>• Duration at residence</li><li>• Type of place of birth</li><li>• Attendant at birth<ul style="list-style-type: none"><li>– Name</li><li>– Type (physician, midwife, nurse, etc.)</li><li>– Address</li><li>– License number</li></ul></li><li>• Date of registration</li><li>• Place of registration</li><li>• Name and relationship of informant</li><li>• Attestation statement with signature of attendant, informant or registrar</li><li>• Birth registration number</li></ul> |
|---|--|

## 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: *Principles and Recommendations for a Vital Statistics System, Revision 2*, United Nations, New York, 2001, Chapter II

# Fetal Deaths

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- 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.”

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

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- 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

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

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- 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
  - Measuring perinatal mortality and pregnancy outcomes.

# Fetal Deaths

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- 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

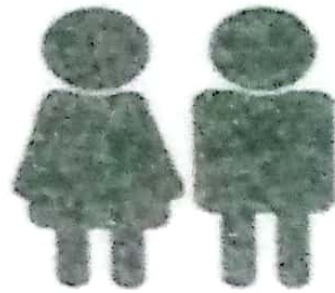
# Uses of CR Records and Vital Statistics

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## Questions

- What are the uses of CR records?
- What are the anticipated problems obtaining or using the records?

## Civil registration



Vital statistics



Legal documents

## **Some possible examples of uses:**

Birth records & certificate, death record & certificate,  
marriage or divorce certificate etc.

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

Marriage records – for women, change surname (if  
appropriate to country); changing nationality on the basis of  
marriage

## **Problems could be specific to situations or areas**

- 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

# 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

	Individual	Administrative	Vital Statistics	Public Health Programs/ Research
Birth	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
Death	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
Marriage /Divorce	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

# Summary

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- CR is concerned with the recording of key life cycle or vital events.
- Vital events are events concerning life and death of individuals, as well as their family and civil status.
- Ten vital events recommended to be recorded; top priority are live births, deaths, fetal deaths, then marriages and divorces.
- CR is the main source of vital statistics.
- Vital statistics refers to the statistical information that can be extracted from the CRS, such as the numbers and rates of births and deaths, causes of death, and other measures.

# Summary

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- CR is continuous, permanent, compulsory, universal.
- Permanent government agency need to be in charge of CR.
- CR have dual purpose - administrative & legal; and statistical, demographic and epidemiological.
- What do you know about CR in Zambia?

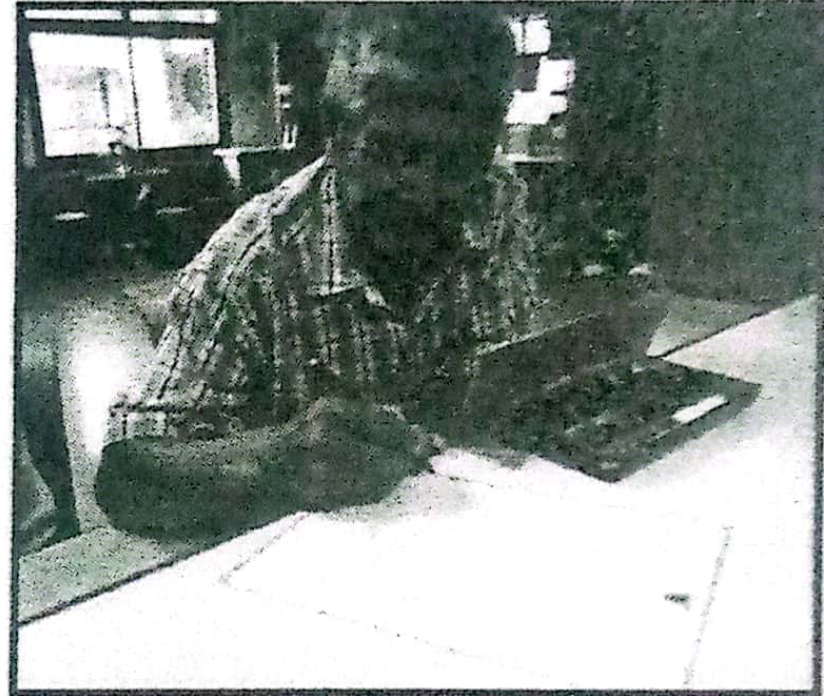
# CR in Zambia

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- CR legislation exist
- The DNRPC is the CR authority and ZamStats as the VS authority.
- For B&D - The **Births and Deaths Registration Act Chapter 51 of the Laws of Zambia** came into effect on **14 March, 1973**;
  - it is an Act that provides for a uniform law for the registration of all births and deaths in Zambia **without distinction of origin or descent.**
  - **Prior to this**, there was no provision for registration of African births except for white, coloured and Asian races.
- Registration > decentralized > districts; BR desks recently established in selected HFs.
- Issuance of birth certificates was for many years centralized.
- SI No. 44 of 2016 – Birth and Death Registration Rules

# Death Records

- Definition
- Information collected
- Cause of death
  - Format for collection
  - Underlying cause of death
  - Coding cause of death
  - Supplemental information in medical certification
  - Verbal autopsy
- Problems with death data



Chaloay Wanathong, 69, signs a certificate registering the death of his father at 95, at Ban Pong District Registration office in Rachaburi Province, Thailand. Photo: WHO/Jerome Ming

Photo from WHO Health Metrics Network publication *Framework and Standards for Country Health Information Systems, Second Edition*  
[http://www.who.int/healthmetrics/documents/hmn\\_framework200803.pdf](http://www.who.int/healthmetrics/documents/hmn_framework200803.pdf).

# Definition

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- **Death is having no signs of life after a live birth has occurred.**

**Statistical definition of death:**

**“the permanent disappearance of all evidence of life at any time after a live birth has taken place”**

SOURCES: *Principles and Recommendations for a Vital Statistics System, Revision 2*, United Nations, New York, 2001, Chapter II. C.

# Definition

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- For legal purposes, deaths may be reported by:
  - Family member or head of household
  - Funeral director or mortician who handled disposition of body
    - Obtains information from next of kin
- If required, cause of death obtained from
  - Physician in attendance
  - Medical examiner or coroner in some cases

SOURCES: *Principles and Recommendations for a Vital Statistics System, Revision 2*, United Nations, New York, 2001, Chapter III.

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

- Date of death
- Place of death
- Facility or place where death occurred
- Name of decedent
- Decedent's personal identification number
- Decedent's date of birth
- Decedent's sex
- Decedent's place of birth and/or nationality
- Decedent's marital status
- Name of surviving spouse
- Decedent's place of residence Duration at residence
- Names of decedent's parents
- Cause of death
- Certifier of death
  - Name
  - Address
  - Type of certifier
  - License number
- Name and address of funeral director handling disposition of the body
- Type of disposition
- Date of disposition
- Name & relationship of informant
- Attestation statement with signature of attendant at death, informant or registrar
- Date of registration
- Place of registration
- Death registration number

## Death Information that could be Collected for Statistical Purposes

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- Additional detail on age if decedent under 1 year of age (usually months, days, hours, or minutes)
- Educational attainment
- Literacy status
- Usual occupation
- Ethnicity, race or religion
- Additional detail related to the cause of death
  - How injury occurred
  - Place of injury
  - Smoking or other risk factors

SOURCES: This slide, previous, and following: *Principles and Recommendations for a Vital Statistics System, Revision 2*, United Nations, New York, 2001, Chapter II.

## Death Information Collected – Derived Data

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

<u>Derived Data Item</u>	<u>Source on Death Record</u>
<ul style="list-style-type: none"><li>• Socio-economic indicator</li></ul>	<ul style="list-style-type: none"><li>• Education, literacy status 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>• Place of residence</li></ul>
<ul style="list-style-type: none"><li>• Other geographic groupings</li></ul>	<ul style="list-style-type: none"><li>• Place of residence or occurrence</li></ul>
<ul style="list-style-type: none"><li>• Age of decedent</li></ul>	<ul style="list-style-type: none"><li>• Date of birth and date of death</li></ul>
<ul style="list-style-type: none"><li>• Tabulation category for deaths<ul style="list-style-type: none"><li>– Under 1 year of age<ul style="list-style-type: none"><li>▪ Neonatal / Post neonatal</li><li>▪ Under 1 week,</li><li>▪ Under 1 month</li></ul></li><li>– Other age groups</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Date of death, time of death, and date of birth</li></ul>
<ul style="list-style-type: none"><li>• Detail on injury deaths</li></ul>	<ul style="list-style-type: none"><li>• Cause of death</li></ul>
<ul style="list-style-type: none"><li>• Deaths with risk factors</li></ul>	<ul style="list-style-type: none"><li>• Cause of death</li></ul>
<ul style="list-style-type: none"><li>• Cause of death groupings</li></ul>	<ul style="list-style-type: none"><li>• Cause of death</li></ul>

# Cause of Death

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- Collection varies
  - Part of death registration
  - Separate from registration
    - Forwarded to civil registration agency
    - Or forwarded to vital statistics agency
    - Or other method
- If part of registration, cause of death provided by
  - Physician in attendance
  - Coroner or medical examiner under some circumstances

SOURCES: *Principles and Recommendations for a Vital Statistics System, Revision 2*, United Nations, New York, 2001, Chapter II.

# Cause of Death

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In 1967 the World Health Assembly said causes of death to be entered on the death record were

“all those diseases, morbid conditions or injuries which either resulted in or contributed to death and the circumstances of the accident or violence which produced any such injuries.”

- Cause of death - *All diseases, disease conditions or injuries that caused the death or contributed to the death. For injuries, include conditions of the accident or violence that produced the injuries.*

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

# Cause of Death

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- Entering cause of death
  - Include all relevant information
  - Should not select some conditions and reject others
- Analysis of cause of death data
  - For public health, need to prevent condition leading to death
  - World Health Organization (WHO) Family of International Classifications (FIC) Network
    - Works with WHO in the development, dissemination, maintenance, and use of a classification scheme with rules for coding cause of death
    - Classification scheme is adopted by WHO
    - Use allows for consistent comparisons between countries

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

# Cause of Death

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- Underlying Cause of Death

- Main cause of death chosen from all causes in medical certification

- Of public health interest; used for tabulation purposes

- Defined by WHO as:

- “ (a) the disease or injury which initiated the train of morbid events leading directly to death, or

- (b) the circumstances of the accident or violence which produced the fatal injury.”

- Not symptoms or modes of dying (respiratory arrest, heart failure)

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

# Cause of Death

## INTERNATIONAL FORM OF MEDICAL CERTIFICATE OF DEATH

Cause of death		Approximate interval between onset and death
<b>I</b> Disease or condition directly leading to death *)	a)..... due to (or as a consequence of)	.....
	b)..... due to (or as a consequence of)	.....
	c)..... due to (or as a consequence of)	.....
	d).....	.....
<b>Antecedent causes</b> Morbid conditions, if any, giving rise to the above cause, stating the underlying condition last	.....	.....
	.....	.....
<hr/> <b>II</b> Other significant conditions contributing to the death, but not related to the disease or conditions causing it		.....
		.....
*) This does not mean the mode of dying, e.g. heart failure, respiratory failure. It means the disease, injury, or complication that caused death.		

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

# Cause of Death

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- Underlying Cause of Death (continued)
  - Part I of form
    - Diseases related to chain of events leading to death
    - Condition leading directly to death on first line
    - Each step in chain of events leading to direct cause of death on following lines
    - Underlying cause starting chain of events leading to death on lowest line
  - Part II of form
    - Other significant conditions contributing to death but not directly related to the death

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

# Cause of Death

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- Coding Cause of Death - ICD
  - *International Statistical Classification of Diseases and Related Health Problems, 10<sup>th</sup> Revision*
  - Adopted and published by WHO
  - **Standard coding scheme** for converting cause of death literals
  - **Rules for choosing the underlying cause**
  - Used since late nineteenth century
  - Allows for comparisons of mortality data at international level

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

# International Classification of Diseases-10th Rev

Chapter	Blocks	Title
<u>I</u>	<u>A00-B99</u>	Certain infectious and parasitic diseases
<u>II</u>	<u>C00-D48</u>	Neoplasms
<u>III</u>	<u>D50-D89</u>	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism
<u>IV</u>	<u>E00-E90</u>	Endocrine, nutritional and metabolic diseases
<u>V</u>	<u>F00-F99</u>	Mental and behavioural disorders
<u>VI</u>	<u>G00-G99</u>	Diseases of the nervous system
<u>VII</u>	<u>H00-H59</u>	Diseases of the eye and adnexa
<u>VIII</u>	<u>H60-H95</u>	Diseases of the ear and mastoid process
<u>IX</u>	<u>I00-I99</u>	Diseases of the circulatory system
<u>X</u>	<u>J00-J99</u>	Diseases of the respiratory system
<u>XI</u>	<u>K00-K93</u>	Diseases of the digestive system
<u>XII</u>	<u>L00-L99</u>	Diseases of the skin and subcutaneous tissue
<u>XIII</u>	<u>M00-M99</u>	Diseases of the musculoskeletal system and connective tissue
<u>XIV</u>	<u>N00-N99</u>	Diseases of the genitourinary system
<u>XV</u>	<u>O00-O99</u>	Pregnancy, childbirth and the puerperium
<u>XVI</u>	<u>P00-P96</u>	Certain conditions originating in the perinatal period
<u>XVII</u>	<u>Q00-Q99</u>	Congenital malformations, deformations and chromosomal abnormalities
<u>XVIII</u>	<u>R00-R99</u>	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified
<u>XIX</u>	<u>S00-T98</u>	Injury, poisoning and certain other consequences of external causes
<u>XX</u>	<u>V01-Y98</u>	External causes of morbidity and mortality
<u>XXI</u>	<u>Z00-Z99</u>	Factors influencing health status and contact with health services
<u>XXII</u>	<u>U00-U99</u>	Codes for special purposes

# Cause of Death

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- Verbal autopsy
  - Used in areas lacking civil registration system or medical certification of cause of death
  - Obtain **probable cause of death**
  - Method
    - Interview with family members or caregivers of deceased
    - Use **questionnaire** to obtain details on signs, symptoms, complaints, and medical history or events of deceased in period before death

SOURCES: *Verbal Autopsy Standards, Ascertaining and Attributing Cause of Death*, World Health Organization, Geneva, 2007.

# Problems with Death Data

Problem	Examples
Source and Accuracy of Information	<p>Informant does not know correct information</p> <p>Medical certifier did not recently attend to the deceased</p> <p>Sensitive information not given correctly</p>
Missing Records	<p>Death records not registered in some geographic areas or for some population groups</p> <p>Late records not included in statistical files</p> <p>Records for infants or children are poorly registered</p> <p>Deaths occurring at home are not registered</p>
Missing Information	<p>Medical certification not complete</p> <p>Data skewed due to missing items for some population groups</p>
Errors in Preparation and Processing	<p>Transcription errors when data entered in record</p> <p>Coding errors and keying errors</p> <p>Errors in computer software programs</p> <p>Medical certification not correctly linked to legal data when separate collection systems used</p> <p>ICD rules not correctly applied for underlying cause of death</p>

SOURCES: *Principles and Recommendations for a Vital Statistics System, Revision 2*, United Nations, New York, 2001, Chapter II.

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**Why is death registration low in Zambia?**

# References

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- Principles and Recommendations for a Vital Statistics System, Revision 2, United Nations, New York, 2001.
- Verbal Autopsy Standards, Ascertaining and Attributing Cause of Death, World Health Organization, Geneva, 2007.
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- Vital Statistics Report 2017 & 2018