

# *Identification & Principles of death Certification*



*Done by:*

*Forensic Team*

*Recourses:*

- *Simpson's Forensic Medicine By Richard Shepherd -12th edition*
- *Doctor's slide*
- *Lecture notes*
- *424 lecture notes*

## Identification:

- Identification is recognition of a person through certain features which differentiate him from all other persons; it may be complete or partial.
- It is searching a sample against a database of templates ( i.e. verification).
- It can be:
  - Complete: absolute fixation of the individuality of a person
  - Partial: ascertainment of only some facts about the identity, e.g. race, sex, stature, while others remains still unknown.

## Types of Identification:

### **1. Legal Identification:**

- Complete description of unknown dead body in order to know the identity of this person later on.
- Required in cases of:
  - Fire, explosion, travel accidents.
  - Unknown dead body found on the road, in the fields, railway compartment or in water.
  - Decomposed bodies, mutilated bodies or in skeletal remains.

### **2. Personal Identification:**

- Recognition of a dead body by his relatives, friends.

### **3. Civil identification:**

- Recognition of living person by a witness in front of civil courts, e.g. in inheritance, missing persons, disputed parenting.

### **4. Criminal Identification:**

- The job of the police. It comprises dactylography, photography, lip and foot prints, and DNA.
- Required in cases of murder, rape, impersonation, interchange of new born.

## Methods of Identification:

### **▪ Anthropometry (Bertillon System):**

#### **It include:**

- Stature, sitting height, and the span of outstretched arms.
- Length and breadth of head, bizygomatic diameter, and the length of the right ear.
- Length of the ear, left middle and little fingers and left foot.

- **Drawbacks:**

- It necessitates delicate instruments.
- Always open to human error.
- Only applicable to adults after 21 years of age.

- **Portrait Parle:**

Include description of the features ( e.g. color of skin, nature and color of hair, color of the eye, voice, language, scars, moles, tattoos), and any abnormality if present.

## Other Recent Prints:

### **I. Voice Prints :**

- Most systems have audio hardware.
- Work over the telephones, and can be done in secret.
- Disadvantages:
  - Background noises.
  - No large data base of voice samples.

### **II. Iris Prints :**

- Have more than 300 characteristics; 200 are required for match.
- Disadvantages:
  - Fear and discomfort.
  - Less availability of devices, and the lack of large databases.
- Can be attacked by surgical manipulation.

### **III. DNA Prints :**

- The most recent prints that are good positive prints.
- The sequence of amino acids bases on DNA molecules are specific for each person.
- Samples needed are nucleated blood cells (i.e the red blood cells are insignificant), saliva, semen, nails, hair, or internal organs in dead.
- They are of great value in cases of disputed paternity.
- Widely accepted for crime scenes.

#### **IV. Teeth Prints :**

**The medicolegal expert's reports on unknown body must include description of:**

- **Clothes :**
  - The pattern of clothes may give clue for the job of the person, his socioeconomic status.
  - The contents of clothes, e.g : identity card, letter.
  - Tears and contamination in relation to special crimes.
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- **Features :**
  - Color of skin, eye, hair, shape of mouth, nose, ear, the shape of the eyebrows, beard and mustache.
  - Any irregularities of teeth. e.g : artificial teeth.
- **Other Characters :**
  - Age.
  - Sex.
  - Stature.
  - Social occupation.
  - Cause of death.
  - The time passes since death.

#### **Age Identification :**

- **Estimation of age is important for :**
  - Civil cases; e.g marriage, full civil rights, elections, ..etc.
  - Criminal cases; e.g for criminal responsibility as well as age of contest in rape.

#### **Sex Identification :**

**Evidences of Sex are divided into :**

- The most certain evidences are the presence of ovaries in females and testes in males.
- The highly probably evidences are the presences of external sexual structures:

- **Female** : Developed breasts, female distribution of hair, distribution of subcutaneous fat, and the presence of vagina.
  - **Male** : absent breast tissues, male distribution of hair, appropriate physical development, and the presence of penis.
- The presumptive evidence are based on the outward appearance of the individual, e.g clothes, voice, and distribution of hair.

### Intersex States :

- Conditions in which male and female characters coexist in varying proportions in the same individual.
- These are :
  - Gonad agenesis.
  - Gonad dysgenesis.
  - Hermaphrodite :
    - **True hermaphrodite** : The same individual posses both non-functional testicles and ovaries.
    - **False (pseudo) hermaphrodite**, which is either :
      - ✓ Male masculine or testicular hermaphrodite : The person has a testicle the external genital organs resemble those of the female but not well develop; e.g cul-de sac vagina without uterus.
      - ✓ Femle, famine, or ovarian hermaphrodite : The gonad is the ovary, but the external configuration genital oragns resemble those of a male.

### Sex Chromatin :

- A Sex specific structure within the nuclei of normal female's cells in various tissues of the body, including blood.
- It is a small dense basophilic mass of chromatin, which seen in nuclei of somatic cells and take a drum stick appearance.
- Buccal mucosal cells and root sheath cells of hair are of special interest in cell sexing since they resist putrefaction and the sex chromatin can be demonstrated in them.

- In clinical practice, sex chromatin test is used for differentiation between female and male pseudohermaphrodite.

### Trans-Sexuality :

- The condition of being in a state of conflict between gender and physical sex.
  - A trans-sexual is a person in which the sex related structures of the brain the define gender identify are exactly opposite the physical sex organs of the body.
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### Principles of death Certification:

- Most of Us are very anxious when we supposed to write an official, accurate and complete report.
- As doctors, we may all find ourselves in one of curt or committee on another, at some stage in our careers.

### Death:

#### **Definitions:**

- Irreversible loss of brainstem functions ( BRAIN DEATH ).
- Permanent Station of circulation or respiration.
- Stoppage of all vital functions.

### Cause Of Death - COD:

That disease, poison, or any injury which initiates the chain of medical events that resulted in the patient's death, e.g. atherosclerosis causes hypertension, which leads to cerebral hemorrhage and death.

### Importance Of The Cause Of Death:

- Documentation for family of the dead, giving them needed explanations regarding the causes of death.

- The cause of death information on death certificates plays important role as the source of data about the national health, e.g. If there is any outbreak or public diseases.

### **Mechanism Of Death ( the direct cause of death ):**

- The medical chain of events that resulted in the patient's death, i.e. the complications of the cause which lead to death, e.g. cardio respiratory arrest, congestive heart failure, cardiac arrhythmia's, septicemia, DIC, Hepatic Failure.
- They are major participating factors, which lead to death.

### **Manner of Death:**

A one- word summary for death certification purposes of the circumstances of death.

**Natural:** due to disease

- Accident.
- Suicide.
- Homicide.
- Undetermined: almost only 5% of national Forensic centers take it.

**Non Natural** deaths must be referred either to medical examiner or a forensic pathologist, depending on Authority.

### **Cases Of Death are Used By government to:**

- Monitor public rates of both MORBIDITY AND MORTALITY.
- Assist in scientific studies and/or researches.
- Implement public health strategies.
- Plan of health policies.
- Provide a base for lawmaking changes.
- Prioritize health funding.

### **DEATH CERTIFICATE:**

The Upper Part of the certificate:

- In ARABIC, English of BOTH
- Ensure that the writing is accurate and easily readable.
- Name should be given in full ( As long As more specific ).

- The age, sex, and residence are made clear. These details are checked with an informant, i.e a close relative, who the signs that they are accurate in the space provided.

The Last clinical state, which leads to death	السبب المباشر للوفاة
Other relevant medical problems ( if present)	احوال مرضية مصاحبة ولها علاقة ان وجدت
The original disease or problem, it is the most important part that enters the epidemiological studies.	المرض الاساسي
Other irrelevant medical Problems	احوال مرضية اخرى ليس له علاقة بالمرض الاصلي
The Name the signature of the doctor, and the date.	اسم وتوقيع الطبيب وتاريخ كتابة الشهادة

### Part 1:

- A. The most recent condition ( Resulting from B ) due to, or a consequence of  
 B. An older condition ( Resulting from C ) due to, or a consequence of  
 C. The First ( the oldest or original ) condition.

### Part 2:

Other significant conditions contributing to death, but not resulting in the underlying cause that is given in part 1.

### The chronological order of the death certificate:

- 1- A man sustains an abdominal gunshot wound.
- 2- Resulted in Perforation of the colon.
- 3- Despite of multiple operations and other treatment, over a period of three months, he developed generalized peritonitis.
- 4- Septicemia.
- 5- DIC.
- 6- Adult respiratory distress syndrome, and eventually he died.



### Examples of COD:

1-)

- A. Acute Myocardial infarction ( approximate interval 12 hours ) due to :
- B. Atherosclerotic coronary vascular disease ( 3 years ) due to:
- C. Known or not ( Obesity, Diabetes .. etc )

2-)

- A. Acute myocardial infarction ( approximate interval 6 hours ) due to:
- B. Atherosclerotic coronary vascular disease ( 3 years ) due to:
- C. Congenital aneurysm ( stress lead to death ).

3-)

- A. Subarchanoid hemorrhage ( approximate interval 30 minutes ) due to:
- B. Undetermined natural causes ( unknown ) due to:
- C. Congenital aneurysm ( stress lead to death ).

4-)

- A. Pulmonary hemorrhage ( approximate interval 30 minutes ) due to:
- D. Aortopulmonary Fistula ( days ) due to:
- E. Lung cancer affecting the left upper lobe ( months )

5-)

- A. Hemopericardium due to:
- B. Rupture of a myocardial infarct due to:
- C. Coronary arteriosclerosis.

Done !