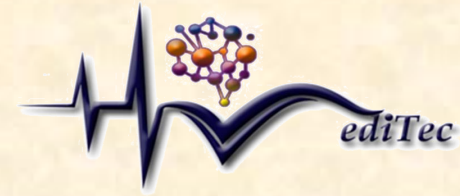




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What is forensic medicine?

**Main task of forensic medicine in Slovakia
and worldwide.**

**The concept of forensic medicine
on UPJŠ Faculty of Medicine**

Healthcare Surveillance Authority (HSA).

Medical aspects of death.

***„Forensic medicine is the key for
pastness, explanation of presence
and indicator of future.“***



What is forensic medicine?

Forensic medicine (synonym: legal medicine)

- is a fundamental and independent part of medicine dealing with the interaction of medical science and practise with the law.

Forensic medicine is dealing with living and dead person, in order to solve these problems:

- examination and evaluation of injury or disease
- evaluation of different kinds of violence
- effects of injury and violence
- cause of death
- identification of living and dead
- pregnancy and abortion
- influence of toxic substances
- medical malpractise etc.

What is forensic medicine?

Branches of medicine which assist in medico-legal solutions are:

anatomy, pathology, dentistry, physiology, biochemistry, pharmacology, traumatology, resuscitation, haematology, genetics, microbiology, obstetrics, paediatrics, psychiatry, sexuology, etc.

Forensic medicine borrows methods of investigation from various natural and other sciences:

anthropology, biomechanics, analytical chemistry, entomology (science about insects), criminology, etc.

Own subjects of forensic medicine:

traffic medicine, alcoholology, forensic toxicology, forensic genetics, forensic anthropology, etc.

Relations between forensic medicine and other sciences



Term „forensic medicine“

„*Forensic*“ means „placed on *Forum Romanum*“ (Roma, Italy)



Forum Romanum was a **market-place in Roma** from ancient times, which played an important part in law and administrative activities that time. Sessions and courts on *Forum Romanum* **were characterized by interaction of *medical science* with the *law***. Medical science assisted the administration of justice both in criminal matters and in civil matters.

Università degli Studi di Padova
Teatro anatomico (1594)



Model of the autopsy room



Instruments using for the autopsy

Forensic Medicine in Slovakia

- **1919** - was established the first **Department of Forensic Medicine of J. A. Komensky University in Bratislava**
- **1948** - **Department of Forensic Medicine P. J. Šafarik University in Košice**
- **1965** - **Department of Forensic Medicine in Martin**
- **1960** - **Departments of Forensic Medicine in Hospitals (Bratislava, Banská Bystrica, Žilina, Nitra, Nové Zámky, Lučenec, Poprad, Prešov)**
- **1997** - **The Concept of Forensic Medicine**
- **1.1.2005** - was established **Healthcare Surveillance Authority - Medico-Legal and Pathological-Anatomical Departments**
- **2006** – **The New Concept of Forensic Medicine**

The main tasks of forensic medicine in SR

VESTNÍK



Osobitné vydanie

Dňa 31. augusta 2006

Ročník 54

O B S A H:

Koncepcia v odbore súdne lekárstvo

Koncepcia zdravotnej starostlivosti v odbore paliatívna medicína vrátane hospicovej starostlivosti

Koncepcia zdravotnej starostlivosti v odbore hematológia a transfuziológia

Koncepcia zdravotnej starostlivosti v odbore klinická farmakológia

Koncepcia odboru revízne ošetrovatelstvo

Koncepcia v odbore patologická anatómia

Koncepcia zdravotnej starostlivosti v odbore urológia

Koncepcia zdravotnej starostlivosti v odbore liečebná pedagogika

Koncepcia zdravotnej starostlivosti v odbore medicína drogových závislostí

Koncepcia v odbore klinická mikrobiológia

Výnos Ministerstva pôdohospodárstva Slovenskej republiky a Ministerstva zdravotníctva Slovenskej republiky z 26. júla 2006 č. 2063/2006-100, ktorým sa mení výnos Ministerstva pôdohospodárstva a Ministerstva zdravotníctva Slovenskej republiky z 25. novembra 2005 č. 3445/2005-100, ktorým sa vydáva hlava Potravinového kódexu Slovenskej republiky upravujúca metódy odberu vzoriek a analytické metódy skúšania na úradnú kontrolu niektorých kontaminantov v potravinách

Výnos Ministerstva pôdohospodárstva Slovenskej republiky a Ministerstva zdravotníctva Slovenskej republiky z 26. júla 2006 č. 13760/2006-SL, ktorým sa mení a doplnia výnos Ministerstva pôdohospodárstva Slovenskej republiky a Ministerstva zdravotníctva Slovenskej republiky z 9. júna 2003 č. 1799/2003-100, ktorým sa vydáva hlava Potravinového kódexu Slovenskej republiky upravujúca materiály a predmety určené na styk s potravinami v znení neskorších predpisov

The Concept of Forensic Medicine
No: 17570-1/2006-OZS
accepted by Ministry of Health
on 31.08.2006.

Participation in prevention against negative social phenomena:

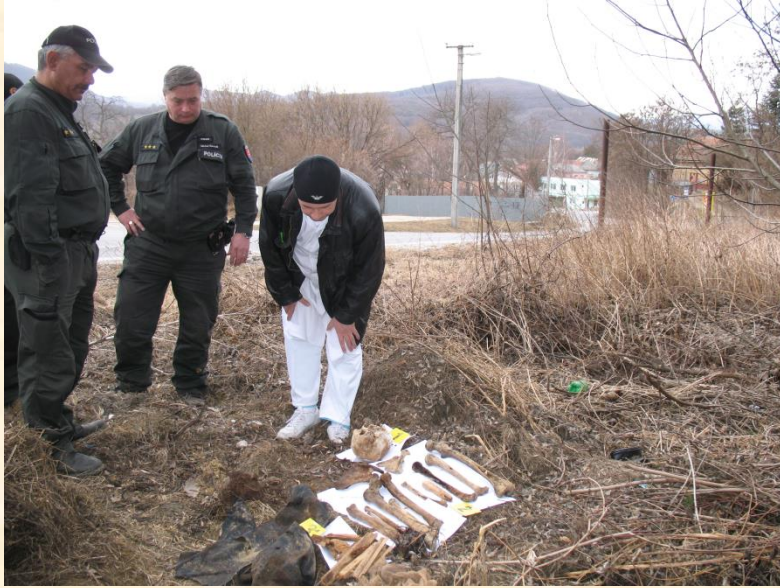
- criminal violence towards health and life
- traffic accidents
- occupational accidents
- chronic alcoholism
- drug abuse
- suicides etc.

The main tasks of forensic medicine in SR

1. Autopsies - sudden and unexpected deaths
 - violent deaths
 - „mors in tabula“
 - deaths caused by medical malpractice
 - in an identification and exhumation
2. The presence of a forensic doctor at the scene of crime. External examination of dead body.



Examination of dead body by forensic doctor



The main tasks of forensic medicine in SR

3. Forensic toxicology and drug analysis (living and dead persons)
4. Forensic serology, haematology and genetics
(examination of blood and other biological materials and DNA profiling for identification)
5. Forensic alcoholology
(the measurement of alcohol in blood, urine and other biological fluids)



The main tasks of forensic medicine in SR

6. Forensic anthropology

(identification of fresh, decomposed or skeletalized human remains by anthropological methods)

7. Participation in mass disasters



The main tasks of forensic medicine in SR

8. Investigation of living persons:

- examination of wounding, injury and trauma,
- examination of pregnancy and abortion,
- examination of sexual offences,
- examination of abuse of alcohol and drugs of dependence

9. Medical reports and statements, expert opinions

10. Clinical seminars and case analysis

(regularly at the Clinics of Traumatology, Surgery, Pediatrics, AIM)

11. Pregradual and postgradual education and scientific research



Organization of Medico-Legal practise in Slovakia

- **Faculty of Medicine: Departments of Forensic Medicine** - Košice, Bratislava, Martin
- education and research

- **Healthcare Surveillance Authority: Medico-Legal and Pathological-Anatomical Departments**
- autopsies, external examination of death bodies on the scene of crime

Healthcare Surveillance Authority

- It was established **by the Act No. 581/2004** Coll. on Healthcare Insurance Companies and Surveillance over Health Care.
- It was established at 1st January 2005.
- The Authority is not entered in the commercial register and its registered office is Bratislava, Želova 2.
- Reports on activities of the Authority are submitted to the Government of the SR.
- HSA introduces a new element into healthcare that is independent, the aim is the satisfaction of a patient.
- HSA acts fairly and independently of state authorities, local government authorities and public authorities and of other legal persons.

Healthcare Surveillance Authority

- **Health care supervision**
- **Public health insurance supervision**
- **Arbitration on the level of the relationship:**
 1. health insurance company ↔ provider
 2. policyholder ↔ provider
 3. policyholder ↔ health insurance company
- **Allocates numerical codes to health insurance companies**
- **Allocates numerical codes to doctors and healthcare providers**
- **It holds registry of persons who refused autopsy, of person who refuse donation of organs after death**

- health
- care
- surveillance
- authority



[Slovak version](#)

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Úrad pre dohľad nad zdravotnou starostlivosťou

The Healthcare Surveillance Authority

The Healthcare Surveillance Authority has been established by the Act No. 581/2004 Coll. on Healthcare Insurance Companies and Surveillance over Health Care and on Amendment and Supplementation of Certain Acts as a legal person which is vested with performing surveillance over provision of health care and public health care insurance in the field of public administration. It has operated since November 1st 2004. The Authority is not entered in the commercial register and its **registered office is Bratislava, Želova 2**. Reports on activities of the Authority are submitted to the Government of the SR.

MAIN TASKS OF THE AUTHORITY

- **Health care supervision**
- **Public health insurance supervision**
- **Arbitration on the level of the relationship:**
 - health insurance company ↔ provider
 - policyholder ↔ provider
 - policyholder ↔ health insurance company

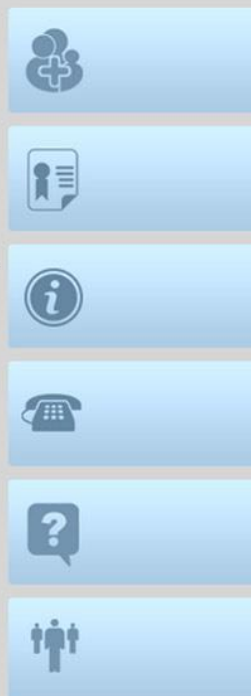
27.06.2013

17.06.2013

14.06.2013

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ORGANIZATIONAL UNITS

Headquarter - Želova 2, 829 24 Bratislava

- Chairperson's office
- Deputy Chairperson's office
- Section of Surveillance over Health Care Insurance
- Section of Surveillance over Provision and Purchase of Health Care
- Section of Economy
- Section of Medico-Legal and Pathological-Anatomical Departments
- Legal Department
- Department of Internal Control
- Personal Department

Branch offices (8 cities):

- Banská Bystrica
- Bratislava
- Košice
- Martin
- Nitra
- Prešov
- Trenčín
- Trnava

Medico-Legal and Pathological-Anatomical Departments

(9):

- Banská Bystrica
- Bratislava (2)
- Košice
- Martin
- Nitra
- Poprad
- Prešov
- Žilina

The organizational set up of the Medico-legal and Pathological-Anatomical Departments:

- necropsy section
- forensic histopathology (microscopic diagnostics)
- forensic toxicology and alcoholology
- forensic serohematology and genetics
- examination of living persons
- section of fotodocumentation (macrofotography, microfotography, video- and x-ray documentation)
- computer database archive and library



Faculty of Medicine - Department of Forensic Medicine



The old Medico-Legal and Pathological-Anatomical Department



The old autopsy room of Medico-Legal and Pathological-Anatomical Department

Autopsy

- It is full post-mortem external and internal examination of the body with the objective to estimate the cause, manner and mechanism of death.
- The autopsy is a highly specialized procedure which should ideally be taken only by the experienced forensic doctor or doctor pathologist.

The value of autopsy:

- Certification of death may be incorrect or inaccurate in 50 % of cases.
- Autopsy will ascertain the cause of death and should prevent concealment of homicide.
- It is source of information, that can be helpful in the process of identification.

Conditions for requirement of an autopsy

- verifying of clinical diagnostics and treatment
- mors in tabula
- infectious diseases
- contamination by radioactive substances
- after harvesting of organs for transplantation
- suspicion of medical malpractice
- industrial or other poisoning
- occupational disease or accident
- traffic accident
- violent death including suicide
- death abroad
- death by imprisonment
- if by external examination or by another way, was not possible to determine the cause of death

STATISTICS

- number of diseased persons in Slovakia:
approximately **50 000 – 53 500**
- number of inhabitants in Košice region: approx. **775 500**
- number of autopsies in Košice region:
approx. **7 500 – 9 500**, i. e. **14 – 19 %** of the total number
of deceased
- number of inhabitants in Košice: **233 700**
- number of deceased persons in Košice region:
approx. **7300 - 7500**
- **number of autopsies** performed at the Medico-Legal and
Pathological-Anatomical Department of HSA in Košice:
approx. **1200**; i.e. **16 - 17 %** of the total number of deceased



Classification of autopsies

1. Anatomical autopsy: for academic interest, teaching and research purposes.

2. Pathological (clinical) autopsy: it is performed by doctor-pathologist if the cause of death is known with the objective to confirm the diagnosis, to discover the extent of the lesions and to exact complications.

3. Medico-legal autopsy by Medical Care order: it is done by forensic doctor in cases of violent or non-violent death, where the suspicion of the other person's guilt is excluded.

4. Medico-legal autopsy by Criminal Law order: it is done by two forensic doctors-experts in cases of violent death, where the suspicion of the other person's guilt is not excluded. Result is an expert opinion.

Medico-legal autopsies

Medico-legal autopsies both by Medical Care order and by Criminal Law order discover following things:

- the identity of the body
- the cause of death
- the nature, number and extent of injuries
- the time of death
- the presence of toxic substances in the dead body
- the expectation of duration of life
- the presence of natural disease and its contribution to death
- the interpretation of the mechanism of death
- the interpretation of the mechanism of injuries
- the interpretation of any other unnatural conditions, including those associated with surgical and medical procedures

Medico-legal autopsies

Several important rules of autopsy performing:

1. The dead body must be identified before autopsy.
2. Where definite crime or suspicion exists, the doctor should visit the scene of the death.
3. The body should be examined with the clothing. The clothes must be carefully retained for police laboratory examination.
4. The body should be photographed both at the scene and in mortuary first with the clothing and then after removal.
5. Access must be given to police or forensic scientists before and during the autopsy for their collection of trace evidences.
6. In a medico-legal autopsy the external examination often means more than internal examination (dissection).
7. The external appearances must be recorded by photos, video, sketches and description, the nomenclature of injuries must be accurate.
8. The biological material (blood, urine, parts of organs) must be taken for histo-, toxico-, serohematological & other investigations.
9. The internal examination must be complete, not partial.

Medico-legal classification of manner of death

I. Natural (non-violent) death – such death manner, where the cause of death is known as definitive disease or unknown yet, but violent factors are excluded.

These are three subtypes of the natural death:

1. Expected death – caused by clinically estimated and properly treated severe disease or its complications.

2. Sudden death – rapid natural death, in which the cause is unknown (cannot be discovered without autopsy). Sudden death cases are:

- case of instantaneous death
- case of non-instantaneous death
- case of founding dead individual

3. Unexpected death – death where a known disease was successfully treated or the patient is in recovery but this disease unexpectedly causes death.

Medico-legal classification of manner of death

II. Violent death – such death manner, where the cause of death is evident violence or complication after violent act committed.

Violent death generally may be caused by:

- blunt force injury
- sharp force injury
- firearms and explosive injuries
- mechanical asphyxia
- thermal injuries
- electrical injuries
- barotrauma
- intoxication
- medical malpractice

Medico-legal investigation of deaths

Death is not simply the state of life absence, but is a process of life fading in a viable organism, which is characterized by irreversible cessation of vital functions and definitive stopping of metabolism.

Dying is relatively complicated process caused by severe damage of vitally important organ or body system leading to the reduction and cessation of main vital functions.

Stages of dying process:

- 1st stage – agony
- 2nd stage – clinical death
- 3rd stage – somatic death
- 4th stage – cellular death

Thanatology is the science on dying and death. (*Thanatos* is a god of dead sleep in the ancient Greek mythology). The main branch of this science is **forensic thanatology**.

Medico-legal investigation of deaths

Pronouncement of death (general aspects):

In most states the pronouncement of death is a task of the physician, the registered nurse or the coroner

Signs of indisputably true death:

- dilated pupils which do not react to light
- the absence of all reflexes
- cessation of respiration with absence of breath sounds on auscultation, lack of clouding on a bright surface (small mirror) held in front of the nose and mouth
- cessation of circulation, confirmed by absence of carotid pulse and heart sounds for one to three minutes
- completely flat brain wave tracking on electroencephalo-graphy (EEG) may be required for final proof
- postmortal changes: early and late

Thank you for your attention!

