



Schweizerische
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di Medicina Legale
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Medical Section

**Expert Commission
Quality Management
and Autopsy**

Swiss Principles and Rules for Medico-Legal Autopsy

Preface

This document is based on Recommendation No. R (99) 3 of the European Council on the harmonisation of medico-legal autopsy rules and its explanatory memorandum adopted by the Committee of Ministers on 2 February 1999 (at the 658th meeting of the Ministers' Deputies). The document is published in *For. Sci. Int.* 111, 1-3 (2000)

Scope of the recommendation

1. In cases where death may be due to non natural causes, the competent authority, accompanied by one or more medico-legal experts, must investigate the incident or death scene, examine the body and decide whether an autopsy should be carried out.
2. Autopsies should be carried out in all cases in which the manner of death is uncertain and in all obvious or suspected non natural deaths where involvement of a third party cannot be ruled out, also if there is a delay between suspected causative events and death, in particular in the following situations:
 - a. homicide or suspected homicide;
 - b. sudden unexpected death with uncertain manner of death, including sudden infant death;
 - c. suicide or suspected suicide;
 - d. suspected medical malpractice and neglect;
 - e. accidents, either transportational, occupational, recreational or domestic;
 - f. occupational disease and hazards;
 - g. technological or environmental disasters;
 - h. death in custody or death associated with police or military activities;
 - i. unidentified bodies or body parts.
 - j. Suspected violation of human rights such as suspicion of torture and/or any other form of ill-treatment.
3. Medico-legal experts must exercise their functions with independence and impartiality. They may not be subject to any form of pressure and they must exercise their functions in an objective manner, in particular in the presentation of their results and conclusions.

Principle I - Scene investigation

a. General principles

1. In cases of obvious or suspected non natural death, the physician to first attended the decedent must report to the competent authorities in accordance to cantonal laws, the latter deciding whether an examination should be carried out by a qualified medico-legal expert or by a physician familiar with medico-legal examinations.
2. Particularly in cases of homicide or suspicious death, medico-legal experts should be informed without delay and immediately attend the death scene, where they shall have unrestricted access. There should be an adequate coordination among all persons involved, in particular among judicial representatives, medico-legal experts and police.
3. The medicolegal expert has to adapt his investigation to the actual case and circumstances. Every deviation from the following principles has to be documented.

b. Examination of the body

The distribution of responsibilities between the police and the medico-legal expert differ from region to region.

1. Role of the police:

The following tasks, among others, should be carried out by police officers:

- a. record the identities of all persons at the scene;
- b. photograph the body as it is found;
- c. make sure that all relevant findings are noted, and that all exhibits, such as weapons and projectiles, are seized for further examination;
- d. in agreement with the medico-legal expert, obtain identification of the body and other pertinent information from scene witnesses, including those who last saw the decedent alive, where available;
- e. preserve relevant biological and trace evidence;
- f. protect the deceased's hands and head with paper bags, under the supervision of the medico-legal expert;
- g. preserve the integrity of the scene and surroundings.

2. Role of the medico-legal expert:

The medico-legal expert must, without delay:

- a. be informed of all relevant circumstances relating to the death;
- b. ensure that photographs of the body are taken;
- c. record the body position and its relation to the state of the clothing and to the distribution pattern of rigor mortis and hypostasis, as well as the state of post-mortem decomposition;
- d. examine and record the distribution and pattern of any blood stains on the body and at the scene, as well as other biological evidence;
- e. proceed to a preliminary examination of the body;
- f. record the body core temperature and the ambient temperature, the strength of the rigor mortis and the livores, as well as other appropriate findings (i.e. putrefaction). These findings are taken into account in order to estimate the time of death, or rather the time since death;
- g. ensure that the transport and storage of the corpse in the cold storage chamber is performed in a supine position. Changes to this requirement must be explicitly or-

dered for by the medico-legal expert, possibly by personal instruction of the undertaker.

Principle II - Autopsy physicians

Medico-legal autopsies should be performed, whenever possible or if required by regional law, by two physicians. A board-certified forensic pathologist bears the responsibility.

Principle III - Identification

The choice of methods is to be adapted to the individual case. In an uncomplicated case the identification can be reduced to a minimum; sufficient material should nevertheless be collected to allow for application of a confirmatory certain identification method at a later time.

Certain identification methods :

- Dental examination
- Fingerprints
- Genetic identification

Uncertain identification methods:

- Visual identification
- Personal effects
- Physical characteristics

It is appropriate to take biological samples from the deceased in order to assist genetic identification. Measures shall be taken in order to avoid contamination and guarantee appropriate storage of biological samples.

Principle IV - General considerations

1. Medico-legal autopsies and related measures must be carried out in a manner consistent with medical ethics and respecting the dignity of the deceased.
2. For the forensic pathologist the information provided by the investigating authority and police is crucial for choosing the appropriate technique and making the correct interpretation. All relevant information surrounding the death including the medical history of the deceased has to be provided before, during and after the autopsy.
3. Before beginning the autopsy, the following aspects are to be applied:
 - a. record date, time and place of autopsy;
 - b. record name(s) and the functions of the persons performing the autopsy;
 - c. examine and record clothing and worn accessories such as jewellery, verify the correspondence between injuries on the body and damage of clothing or worn accessories.
4. Where appropriate, imaging methods are to be carried out.
5. Where appropriate, before beginning the autopsy, body orifices are to be swabbed for the recovery and identification of biological trace evidence.

Principle V - Autopsy procedures

In general, the extent of the external and internal examination may vary depending on the case circumstances by decision of the board-certified forensic pathologist involved in the autopsy. In particular cases, the physician may refrain from applying all the following recommendations. However, this must be documented in the autopsy protocol.

I. External examination

1. The examination of the clothing and worn accessories is an essential part of the external examination and all findings are to be clearly described. This is especially important in cases where the clothing or accessories have been damaged or soiled: each area of recent damage must be described fully and relevant findings are to be related to the site of injuries on the corpse. Discrepancies in such findings are also to be described.
2. All signs of recent or old medical and surgical intervention and resuscitation must be described. Medical devices must not be removed from the body before the intervention of the medico-legal expert.
3. The external examination should include:
 - a. age, sex, build, height and weight, nutritional state, skin colour and special characteristics (such as scars, tattoos or amputations);
 - b. post-mortem changes, including details relating to rigor and livores - distribution, especially their intensity, colour and reversibility - and putrefaction and environmentally induced changes;
 - c. findings on a primary external inspection which, if required, include sampling of stains and other trace evidence on the body surface and a reinspection after removal and cleaning of the body;
 - d. inspection of the skin including the posterior or downwardly facing surfaces of the corpse;
 - e. careful inspection of the head and the facial orifices. This includes hair and beard, nasal skeleton, lips, oral mucosa, dentition and tongue, ears (retro-auricular areas and external meati), eyes (colour of irises and sclerae, regularity and appearance of pupils, sclerae, conjunctivae), skin (including a description of presence or absence of petechiae); if fluids have been evacuated from facial orifices, their appearance, colour and odour;
 - f. inspection of the neck: checking for excessive mobility and/or creptiation, presence and absence of abrasions, other marks and bruising (including petechiae) over the entire circumference of the neck;
 - g. inspection of the thorax: shape and stability, breasts (aspect, nipples and pigmentation);
 - h. inspection of the abdomen: external bulging, pigmentation, scars, abnormalities and bruising;
 - i. inspection of the anus, perineum and genitals;
 - j. inspection of the extremities: shape and abnormal mobility, abnormalities; injection marks and scars; palmar surfaces, finger and toe nails;
 - k. material findings under fingernails.
4. Injuries must be described and documented.

II. Internal examination

A. General

1. Relevant artefacts produced by sampling procedures must be documented.
2. The opening of the three body cavities is standard procedure.
3. Examination and description of body cavities includes: an examination regarding the possibility of gas being present (pneumothorax), measuring the volume of fluids and blood, regarding the appearance of internal surfaces, examining the intactness of anatomical boundaries, assessing the external appearance of organs and their location and detecting adhesions and cavity obliterations, injuries and haemorrhages.
4. Organs must be examined following the general principles of pathological anatomy.
5. All internal lesions and injuries must be precisely described by size and location. Injury tracks must be described in order to include their direction in relation to the organ anatomy.

B. Detailed

1. Head
The technique used for the examination of the cranium, must be adequate for the assessment of the scalp, temporal muscles, skull, meninges, cerebrospinal fluid, main blood vessels, and cranio-vertebral junction.
2. Thorax and neck
The opening of the thorax must be performed using a technique which allows for the demonstration of the presence of a pneumothorax and the inspection of the thoracic walls, including the postero-lateral regions. In situ dissection of the neck must display the details of its anatomy.
3. Abdomen
The opening procedure of the abdomen must allow for an accurate examination of all layers of the walls. In situ dissection is necessary in certain cases. The whole intestine should be dissected and its contents described.
4. Skeleton
 - a. The examination of the thoracic cage, the spine and the pelvis is part of the autopsy procedure.
 - b. Where appropriate traumatic (violent) deaths need a precise dissection of the limbs, possibly complemented by imaging procedures.
5. Special procedures
 - a. For the demonstration of particular injury patterns, a deviation from the standard autopsy procedure are acceptable, provided that such procedures are specifically described in the autopsy report.
 - b. If there is any suspicion of neck trauma, the brain and thoracic organs are to be removed prior to the dissection of the neck, to enable detailed bloodless dissection.
 - c. In cases of suspected gas embolism, pre-autopsy imaging procedures should be performed. The autopsy technique must enable the forensic pathologist to diagnose an eventual gas embolism, to estimate the gas volume in the heart and to sample the intravascular gas.

- d. Where appropriate, the examination should include a full exposure of the soft tissues and musculature on the back of the body. The same procedure must be applied to the extremities (so called "peel-of" procedure).
- e. In suspected or obvious sexual assault, the sexual organs are to be removed "en bloc" together with the external genitalia, rectum and anus, before they are dissected. Relevant swabs of orifices and cavities must be taken prior to this procedure.

6. Sampling

This is to be performed in accordance to the SGRM/SSML/SSLM Guidelines for preserving autopsy material for forensic-toxicological analyses.

7. Release of the body

After a medico-legal autopsy has been carried out the body has to be returned in a dignified condition. This includes suturing of all incisions, and, if necessary and as far as possible, of facial injuries. The body should contain all internal organs. If whole organs are retained, this must be documented in the autopsy protocol.

Principle VI - Autopsy protocol

The autopsy protocol is an objective and reproducible description of patho-morphological and forensic-anatomical findings. Forensic interpretations, conclusions and diagnoses are subject to personal judgement and opinion by the forensic expert. If they do not figure on a separate document, the findings and their interpretation must be clearly separated.

The autopsy protocol is to be dictated during or immediately after the autopsy.

1. The protocol should therefore be:
 - a. full, detailed, comprehensive and objective;
 - b. clear and comprehensible not only to other physicians, but also to non-medical readers;
 - c. written in a logical sequence, well-structured and easy to refer to in various sections of the report;
 - d. be in a legible and permanent form, with a hard paper copy even if it is retained in electronic storage.
2. When drafting an autopsy protocol, the following minimum content should be included:
 - a. legal preface to fulfil statutory requirements, if needed;
 - b. serial number, computer retrieval coding;
 - c. full personal details of the deceased (including name, age, sex) unless unidentified;
 - e. date, place and time of autopsy;
 - f. name, qualifications and status of medico-legal expert(s);
 - g. participants at the autopsy and their functions;
 - h. name of the authority commissioning the autopsy;
 - n. detailed description of external and internal findings. Reference should be made to the provisions of Principle V above;
 - o. listing of all samples retained for toxicology, genetic analyses, histology, microbiology or other type of investigation;
 - p. listing of additional investigations conducted prior to, during or immediately after the autopsy should be included;
 - s. the protocol must be signed by the medico-legal expert(s) that attended the procedure.

These recommendations were given by the expert commission „Quality Management and Autopsy“ of the Medical Section of the Swiss Society of Legal Medicine (SGRM/SSML/SSLM), namely by S. Burkhardt (IUML Genève), K. Gerlach (IRM Basel), B. Horisberger (IUML Lausanne), R. La Harpe (IUML Genève), Ch. Markwalder (IRM St. Gallen), Th. Plattner (IRM Bern), T. Rohner (IRM Zürich), B. Schrag (IUML Lausanne), Th. Sigrist (IRM St.Gallen), M. Thali (IRM Bern), B. Vonlanthen (IRM Zürich) and D. Wyler (IRM Basel / Chairman), assisted by St. Bolliger (IRM Bern) and approved by the Medical Section of the SSLM on the **20.04.2007.**