



515-725-1400

Iowa Office of the State Medical Examiner Newsletter

Issue Number 7

8/1/2009

Reporting Preliminary Information for Cases sent for Autopsy

Dennis Klein, M.D.

The information about the history and circumstances leading up to death is essential for proper death investigation and certification. The value of this information is likewise invaluable for a pathologist who is to begin a forensic autopsy. Knowledge about the history and circumstances have a huge effect on the type of evidence that is collected, tests that are ordered, and the interpretation of autopsy findings. The availability and quality of the information before an autopsy is started thus has a direct effect on the quality of the autopsy and the entire case.

The ME-1 form, which includes these valuable pieces of information, must be completed on every death that comes under medical examiner jurisdiction. The completed ME-1 form should be considered the minimum information that is necessary for documentation of a medical examiner case regardless of whether an autopsy is ordered. The question sometimes asked, however, is why state investigators ask for information at the time a case is reported to the Iowa office of the State Medical Examiner (IOSME) for autopsy. Isn't this information already on the ME-1 form? There are several reasons why state investigators ask for information over the telephone when the case is reported to the office. First, the large geographical area of the state poses significant challenges when it comes to transportation of bodies and timely communication.

Although there is great effort and often success in getting the ME-1 form to the IOSME, sometimes circumstances beyond anyone's control result in no ME-1 form being available at the start of an autopsy. Circumstances and history as mentioned can greatly affect types of evidence that may be

collected, procedures performed, and tests ordered. The autopsy, like any procedure, is most useful when it is interpreted in view of known circumstances and history.

Second, there may be important specific questions about the case that are often most easily answered at the time the case is reported. Remember, the ME-1 is a generic form. In considering all the different types of deaths, there are often specific pieces of information that are important to the pathologist that are not necessarily covered in the ME-1.

Third, there must be strict quality control of the identity of bodies that are accepted for autopsy and eventually released to a funeral home. The first step in maintaining quality control is having the correct spelling and date of birth of individuals whose bodies are accepted into the facility for autopsy. In addition, the law requires that death certificates be certified within 72 hours of determination of the cause and manner of death. The proper spelling of the name, age, time of pronouncement of death, address of injury, and date and time of injury must be accurate and available to complete the death certificate within the legally required time period. The most common reason for delay in death certification after cause and manner of death have been determined is due to the lack of these key pieces of death certificate information. This information is most easily and accurately obtained at the time of scene investigation. Thus, communicating this information at the time of reporting the death ensures it reaches the IOSME rapidly and accurately. This effort to communicate information in a timely manner provides a valuable service to the families who are waiting for the death certificate and ensures our compliance with the law.

Fourth, time passed can mean information lost. One of the more challenging investigations is ~~that~~ the death of an infant. In addition to the ME-1, the Child Death Investigation ME-4 form must be completed. The ME-4 asks for important specific information that is pertinent to deaths involving infants and children. The time to complete the ME-4 form is as close to the time of death as possible. The time for doll re-enactments is also best done as soon as possible. Caregivers may forget details or alter their true memories of the event if time is allowed to elapse. Providing information on sleep position and environment or history of abuse can be invaluable to the pathologist in interpreting certain findings at autopsy. Documenting this information and communicating the information quickly on the first call is the best way to ensure that the autopsy is going to yield the most amount of information and provide as many answers as possible.

When calling in a case to the IOSME for autopsy, you should expect that IOSME investigators will be asking questions about the case. They will be asking for the correct spelling of the decedent's name, date of birth, date and time of pronouncement of death, address where injury occurred, and for pertinent details of the circumstances leading up to the death. These are the pieces of information that will be immediately needed by the pathologist performing the autopsy and by the staff involved in preparing the death certificate. By anticipating these questions, hopefully the call-in process will be efficient and take only a few moments of your time. The result is overall improved quality of the investigation.

Personal Belongings and Evidence

It is common for a decedent to have personal belongings with them at autopsy. These can be clothes, jewelry, cell phones, etc. It is the policy of the IOSME to document all belongings and usually send them with the decedent to the funeral home.

However, in cases of homicide or if the belongings have an evidentiary value, items may be retained or submitted for analysis. In such cases, it is possible the item will be kept or destroyed by IOSME.

More often than not, retained evidence will be released to law enforcement or the funeral home after analysis. Please let us know if your agency wants a certain item returned to them so we can make arrangements if possible. If there is ever a question as to what was brought in with someone or where a certain item is, please feel free to contact IOSME.



IOSME STATISTICS

Through July 30, 2009

Cases Performed..... 401

Death Certificates Signed..... 381

Cremation Permits Signed..... 167

Homicides Autopsied..... 18

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http://www.idph.state.ia.us/do/medical_examiner.asp

Request for Report

Preliminary reports are issued to the referring County Medical Examiner after autopsy. Please inform the IOSME if the referring individuals would like a phone call from the pathologist or investigator after autopsy in addition to the usual preliminary report.

The legal next-of-kin has the right to request a copy of the finalized report. Please inform the next-of-kin that they can mail or fax a written request to our office to receive a copy of the report. The request must have their name, the decedent's name, and explain the relation to the decedent. Their address and phone number should also be included. A copy will be mailed to them once finalized.

Hierarchy of Next of Kin:

1. SPOUSE
2. ADULT CHILDREN 18 YEARS OF AGE OR OLDER
3. MOTHER OR FATHER IF STILL LIVING
4. SIBLINGS
5. GRANDPARENTS

Identification

Visual ✨ Scientific ✨ Circumstantial

If a driver's license or other photo ID is used on scene to identify a decedent, please send it with the body. If a person identifies the body visually, please document the person's name, contact information, and relation to the decedent.

Decomposition, thermal injuries, and severe trauma are just a few of the situations where visual identification is not possible. Scientific identification is then necessary. In these cases, the IOSME will commonly try to obtain antemortem fingerprints, dental records or use DNA analysis. Scientific identification will almost always take longer than a visual identification. One way to expedite the process of identification is to begin immediately contacting

law enforcement for fingerprints or dentists for the tentatively identified decedent's dental records. Once we have antemortem fingerprints, surgical radiographs or dental x-rays, we can compare them to what we gather postmortem and hopefully get our positive ID. In the case where the decedent doesn't have prints on file or never went to a dentist, we must use DNA analysis. For identification by DNA, we need DNA from a relative; buccal swabs are fine, no one needs to give any blood. The IOSME will submit the buccal swab from the supposed family member to the DCI to be compared with a bloodstain card we obtain at autopsy. The process of analysis can take a month or more.

Less common, but just as accurate, a decedent may have had a past surgery that left something metal in his or her body. Radiographs from such surgeries can be used for identification as long as that part is intact within the body. Implants such as breast implants, pacemakers, or defibrillators will usually have a serial number specific to one patient that can be used for identification as well. Finding out about previous surgeries or implants and locating those records would also be very helpful in the identification process.

Another form of identification that can help lead to a more positive identification is circumstantial identification. This can be obtained by having a family member describe the decedent's tattoos, birthmarks, or scars. It is not the usual policy of the IOSME to release based solely on circumstantial identification.

The IOSME will not release a body until it has been properly identified. It is important to let families and funeral homes know this so they can have an accurate timeline for making funeral plans.



Case Presentation

Jonathan Thompson, M.D.

The decedent was a 32-year-old G3, P2 Caucasian female who underwent an elective caesarean section at 40 weeks gestation. Immediately after delivery of a viable 7 lbs, 7 oz male infant, she developed a cough, became agitated, then obtunded, and finally unresponsive with decreasing oxygen saturations and decreasing blood pressure. She eventually suffered cardiopulmonary arrest while still in the operating room. Despite prolonged resuscitative measures, she was unable to be revived.

Autopsy revealed a vertically oriented, stapled, 14 cm long midline incision on the lower abdomen. The anterior uterus had an 11 cm long sutured incision. The left hepatic lobe, just left of the falciform ligament, had a gaping 5 cm long x 2 cm in maximum depth laceration with greater than 4000 cc of bloody fluid in the peritoneum. The stomach, renal pelvis, and urinary bladder displayed mucosal petechiae. The anterior right 5th rib and anterolateral left 5th rib were fractured. Other natural diseases were not identified. Microscopic examination of the lungs demonstrated numerous squamous cells in the pulmonary circulation.

The cause of death was certified as massive amniotic fluid embolism due to caesarean section delivery, and the manner of death was certified as natural.

Amniotic fluid embolism syndrome (AFES) is a condition that occurs during pregnancy or shortly after delivery. The overall incidence of AFES is 7.7 per 100,000 births with a mortality rate of 60% to 80%. Reported risk factors for development of AFES include

multiparity, caesarean section or operative vaginal delivery, placental abruption, placenta previa, and cervical laceration or uterine rupture. The onset of symptoms usually occurs during labor and delivery or in the immediate postpartum period. The major clinical findings are similar to septic or anaphylactic shock and include the abrupt onset of respiratory failure, cardiogenic shock, and disseminated intravascular coagulation.

The diagnosis of amniotic fluid embolism is made at autopsy when amniotic fluid debris (fetal squamous cells, mucin, lanugo) are found in the maternal pulmonary circulation; however, amniotic fluid debris may be found in the pulmonary circulation of laboring women who do not develop the syndrome. The diagnosis, therefore, should be based on the clinical presentation and autopsy findings.

The pathophysiology of AFES is poorly understood. The initiating event is thought to be due to amniotic fluid, or some other unidentified substance, entering the maternal circulation and triggering an anaphylactic reaction or activating the complement system.

In the presented case study, the diagnosis of amniotic fluid embolism was based upon the identification of fetal squamous cells in the maternal circulation and the clinical presentation. The decedent had evidence of disseminated intravascular coagulation with petechial hemorrhages of the stomach, renal pelvis, and urinary bladder. The liver laceration and rib fractures were likely due to the cardiopulmonary resuscitation.

Training Opportunities

September 8–11, 2009

**European Academy of Forensic Science
Triennial Meeting
Strathclyde University
Glasgow, Scotland, United Kingdom**

Contact: Congress Secretariat
E-mail: eafs2009@meetingmakers.co.uk
Web site: <http://www.eafs2009.com/>
Phone: + 44 141 434 1500 (Voice)
FAX: + 44 141 434 1519

September 14–18, 2009

**Basic Facial Reconstruction Sculpture Workshop
University of Oklahoma
Norman, Oklahoma**

Contact: Betty Pat Gatliff
Web site: <http://www.sculpture.outreach.ou.edu/>
Phone: + 1-405-321-8706 (Voice)

September 14–18, 2009*

***Note date change**

**World Congress International Society for
Forensic Genetics
Hilton Hotel
Buenos Aires, Argentina**

Contact: Analia Procupez
E-mail: secretariat@isfg2009.org
Web site: <http://www.isfg2009.org>
Phone: + 5411-4378-1128 (Voice)

September 15–17, 2009

**IMF 2009
IT Security Incident Management and IT Forensics
International Conference
Stuttgart, Germany**

Contact: E-mail: 2009@imf-conference.org
Web site: <http://www.imf-conference.org/>

September 21–25, 2009

**Advanced Facial Reconstruction Sculpture
Workshop
University of Oklahoma
Norman, Oklahoma**

Contact: Betty Pat. Gatliff
Web site: <http://www.sculpture.outreach.ou.edu/>
Phone: + 1-405-321-8706 (Voice)

September 21–25, 2009

**Forensic Soil Examination
McCrone Group's College of Microscopy
Westmont, Illinois**

Contact: Chuck Zona
E-mail: czona@mccrone.com
Web site: <http://www.collegeofmicroscopy.com/>
Phone: + 1-630-887-7100 (Voice)

October 12–15, 2009

**International Symposium on Human Identification
JW Marriott Las Vegas Resort & Spa at
Summerlin
Las Vegas, Nevada**

Contact: Promega Corporation
Web site: <http://www.promega.com/geneticsymp20/>

Online Training

**American Board of Medicolegal Death
Investigators**

<http://www.slu.edu/organizations/abmdi/>

Federal Emergency Management Agency

<http://training.fema.gov/>

**Sudden, Unexplained Infant Death Investigation
by the Centers for Disease Control and
Prevention**

<http://www.cdc.gov/SIDS/TrainingMaterial.htm>