Forensic Pathology, Hennepin County Medical Examiner's Office

During the course of the one-month rotation, the pathology resident becomes an integral part of the death investigation team at the Medical Examiner's Office participating first hand in all conferences, performing autopsies, attending scene investigations, viewing ME expert witness testimony and interpreting postmortem toxicology tests. The resident soon learns that death investigation is more than "just an autopsy."

Institutional Site Director / Rotation Director

Andrew M. Baker, MD
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Teaching Faculty Members

Lorren Jackson, MD, Assistant Medical Examiner
Lindsey Thomas, MD, Assistant Medical Examiner
Rebecca Wilcoxon, MD, Assistant Medical Examiner
Enid Boeding, MD Assistant Medical Examiner
Fred Apple, PhD., Director of Laboratories, Hennepin County Medical Center

Lead Technical and Clerical Personnel

Roberta J. Geiselhart, RN Supervisor of Investigations
Oversees Medical Examiner Investigator and Pathology Resident death scene investigations

Shawn Wilson, Senior Investigator
Coordinates Medical Examiner Investigator and Pathology Resident death scene investigations

Jackie Soucek, Senior Investigator
Coordinates Medical Examiner Autopsy Technician support for the resident-covered autopsies

Michael Rossman, Department Administrator
Manages overall department business operations, including the coordination of the visiting fellow, resident and student in-house educational program

Training Site:

Hennepin County Medical Examiner's Office, 530 Chicago Ave, Minneapolis, Minnesota
Duration of Rotation:

One month

Post Graduate Level of Residents Involved

PGY levels 1-4

Supervisory Guidelines for Patient Care and Specimen Handling

Medical Examiner case review: The Medical Examiner investigative data sheet (whether viewed electronically or printed from our Medical Examiner case management system) is a report that is a compilation of all the information obtained on a case, from the time it was reported to the Medical Examiner’s Office until the case is accepted and a death certificate issued or jurisdiction is declined. This report is reviewed on a daily basis by the resident and staff together at the morning case review conference. The resident has input in the case by assessing what additional information needs to be obtained (past medical history, medical records, reports from outside agencies) and what tests may need to be performed (autopsy, toxicology, x-ray studies). In addition, the resident can access the computerized Medical Examiner case management system and input the additional information he or she has obtained (past medical history obtained by speaking with the decedent’s personal physician, social history by speaking with the decedent’s friends and family) directly into the case for review with the staff during the next conference. As the results of the tests and additional information become known, the resident then has the opportunity to fill out the cause of death worksheet with the ability of the staff to modify it with the resident if needed. The forensic pathology fellow will usually review these cases before the resident, but toward the end of the rotation, the resident may sit in the "hot seat" and review the case, having the initial chance to list the additional information needed and to be reviewed by the staff.

Autopsies:

Under close supervision, until the visiting resident has demonstrated expected autopsy technique and gross interpretation, the resident is allowed to perform autopsies on cases where one has been ordered by the staff. The cases on which the resident is the primary prosector will typically be less controversial, as the resident is not expected to be heavily involved in a case that would need criminal court testimony. The resident is expected to be able to perform an autopsy without technical assistance by the end of the rotation. After demonstrating mastery of the forensic autopsy, the resident will assume more responsibility in the form of additional cases as well as more complex cases. In addition, special autopsy techniques including anterior and posterior neck dissections will also be learned, and a photographic and written documentation of pertinent positive and negative findings in each case will also be expected. The number of autopsies performed during this rotation is usually the largest for any autopsy rotation of the visiting resident. Histologic sections are taken on all cases and directly reviewed with the staff, along with the written
autopsy report before the final report is issued. The forensic fellow will perform autopsies of victims of homicide and other unnatural deaths that may have criminal charges filed. In these cases, the resident may assist the fellow with both the prosection and organ dissection. At the conclusion of the autopsy or during case review, if biologic specimens have been obtained for possible further tests, the resident and a supervisory staff will discuss what additional toxicology or electrolyte tests may be needed to complete a thorough death investigation on that particular case. Toxicology and other laboratory studies will again be interpreted by the resident with the assistance of the staff, as that information becomes available. The pathology resident is expected to do the vast majority, if not all, of the prosection on the autopsies that he or she performs during his or her rotation with the goal of becoming more efficient and skilled in those areas.

**Death Scene Investigation:**

The Medical Examiner investigative staff makes numerous scene visits in Hennepin, Dakota and Scott Counties and is available to do so 24 hours a day, 365 days per year. A scene investigation may be undertaken on cases where the Medical Examiner will assume jurisdiction; i.e., an unnatural manner of death where the decedent is present at the scene, as well as cases of unattended but expected death occurring at home where a private physician may be signing the death certificate just to confirm that there is no reason to suspect foul play. When accompanying the Medical Examiner investigative staff to a scene, the following guidelines should be observed:

1. Appropriate attire should be worn. This is the same type of clothing you would wear for any rotation where there would be patient contact.
2. The Medical Examiner investigator or investigative assistant is in charge of the scene. As such, the pathology resident should not interact with police officers, family members, or other people at the scene at this time. Questions should be directed to the Medical Examiner investigative personnel when it is appropriate that is when the investigator is not in the middle of interviewing witnesses, relatives, or police officers. Then the question should be asked quietly and discreetly. Some questions should be kept until the scene is cleared and everyone is back at the office.
3. Since only two people can ride in the Medical Examiner vehicle due to office policy and number of spaces available, the pathology resident on service will drive his or her own vehicle to the scene. To facilitate the use of their private vehicles, they will be allowed to park in the back parking lot. No mileage allowance or other compensation for the use of the vehicle can be given, and all matters of vehicle insurance and liability are the responsibility of the resident.
4. When the death scene investigation involves a homicide or potential homicide, there is a possibility that the pathology resident may not be allowed into the area where the body is. This is usually at the discretion of the police officers in charge of the scene and is done to maintain the integrity of the scene for potential evidentiary purposes.
5. As death scenes do not necessarily occur only during "standard business office hours," the pathology resident may make arrangements with the forensic fellow, the Medical Examiner staff on call, and/or the Medical Examiner investigative staff to be contacted regarding scenes available during the off hours.

**Overview of Daily Duties and Responsibilities:**

Daily responsibilities include case review conference at 7:30 a.m. Monday through Friday and as arranged with the office administrator or attending physician staff on the weekends. Following the review of all cases, autopsies available for the day will then be completed. During the month the resident is on rotation, on the second and fourth Wednesdays, there will be neuropathology conference with brain cutting of fixed brain performed by two board-certified forensic neuropathologists. Every Thursday afternoon, a 1-hour toxicology conference is held, to review the interesting toxicology issues of the cases for the previous week and to review a journal club article related to toxicology testing in the postmortem setting.

The differences in the visiting resident’s responsibilities from the first week of the rotation toward the last week are based on the resident’s progress in prosection technique with his or her being able to perform more autopsies and autopsies of a more complex nature toward the end of the rotation. Similarly, for return rotations, it would be expected that the complexity and the numbers of cases autopsied would be greater than the first rotation.

The resident is directly responsible for documenting pertinent negative and positive external and internal findings for each particular case and doing so with the correct Medical Examiner number present in the field of the photograph. He or she is also responsible for ascertaining that the toxicology specimens which are obtained are put into the appropriately labeled specimen container and that the toxicology form is appropriately filled out to reflect the type of testing requested and the circumstances surrounding the death.

During the course of the resident’s one-month rotation, medical students and other personnel may be present during autopsies. The pathology resident is encouraged to explain to those more novice in autopsy experience the autopsy technique and the gross findings that are particularly of interest. The resident is also expected to, toward the end of the rotation, provide the staff with a representative overview of the organs dissected at autopsy with his or her gross interpretation of the findings. The resident is also responsible for filling out the provisional anatomic diagnoses at the end of the autopsy and be certain that that information is passed onto the investigative personnel who may be in contact with the decedent’s family. The resident may, at times, be asked to interact with the decedents’ families.

Resident-fellow interactions are fairly consistent on a day to day basis starting with case review and performing autopsies in the same morgue. Again, the more criminally
controversial cases will be performed by the forensic fellow, though the type of injuries present on those particular cases may likely be autopsied by the visiting resident when the circumstances are not of a criminal nature. Also, the forensic fellow is expected to take death scene call and make arrangements with the visiting resident to have him or her accompany the fellow to the death scenes. The fellow is also expected to meet with attorneys on those cases that are headed for court as well as to give courtroom testimony. The resident may accompany the fellow to such conferences as well as to the courtroom to view testimony.

Goals and Objectives:

1. Learn and understand the Hennepin County Medical Examiner System.
2. Learn what types of death require investigation.
3. Become familiar with the reporting forms used during a Medical Examiner’s investigation.
4. Learn what steps are necessary to maintain the “chain of custody” for evidence collected.
5. Learn how a scene of death is properly investigated.
6. Learn how bodies are identified.
7. Learn the proper method of external examination.
   1. Learn the proper technique of photograph documentation of the pertinent external findings.
   2. Learn how time of death may be determined.
8. Learn the nature of various types of wounds and deaths with their important associated findings: blunt-force injuries, sharp-force injuries, gunshot and shotgun wounds, asphyxial injuries, sudden unexplained death in infancy, fire-related injuries and hypothermia, motor vehicle related injuries, no anatomic cause of death.
9. Learn about special investigative techniques related to decomposed bodies, burnt bodies, apparent drowning.
10. Learn about forensic toxicology and specimen collection.
11. Learn about forensic pathology autopsy techniques.

Clinical Procedures Learned During the Rotation:

Complete autopsy prosection, including special autopsy procedures (anterior and posterior neck dissections).

The goals, learning objectives, and clinical procedures will be accomplished by review of the approximately 325 deaths reported to the Medical Examiner’s Office each month, death scene investigation, complete autopsies, participation in a weekly toxicology conference, and/or by review of written material and archival teaching sets available at the Hennepin County Medical Examiner’s Office.

Resident Opportunities to Function as Consultant to Other Physicians:
 Resident-generated reports include the autopsy report, additional investigative data obtained by speaking with family members, personal physician and other agencies involved in that particular death investigation. The resident is directly responsible to discuss with supervising staff on the cases the resident autopsies what additional information is needed for the case investigation as well as what toxicology tests should be ordered, and what and which tissue sections should be submitted for histology at the completion of the autopsy. As the case progresses from initial report, he or she will work with the staff to determine a cause and manner of death for that particular case.

Residents may interact with the decedent’s attending physicians to share with them autopsy and toxicology findings. They can also obtain information about the clinical diagnoses made by the attending physicians and correlating those with what were found at the time of the autopsy. On occasion, a Medical Examiner’s case where the death has occurred in a hospital may involve resident physicians from that particular service coming down to view the autopsy and discuss the case with the visiting resident.

**On Call Duties:**

The pathology resident is not "on call" per se to make final decisions and/or scene visits for Medical Examiner cases. They may be on call to be included in scene investigations that occur either during standard office hours or after hours. Faculty supervision in the form of the forensic fellow and/or the Medical Examiner staff pathologists are present for all scene investigations that the visiting resident may participate in. If the resident is interested, every effort will be made to include him or her in the scene investigations. It is expected that the resident will be available for one full weekend of case review and autopsies. More weekend coverage may be needed if the resident needs time off during the week. This is done to ensure adequate exposure to a variety of Medical Examiner cases.

**Prompt and Reliable Communication with On-duty Faculty:**

For both routine duty hours and during after hour on call, the Medical Examiner pathology staff members are either physically present in the Medical Examiner’s Office or are available by mobile phone with integrated office email. An assigned staff coverage schedule is available for easy access online and will be posted in the resident’s office. During the performance of Medical Examiner autopsies, the Medical Examiner staff is most often present within the morgue itself during the course of the autopsy or is present within the building for any questions that the resident may have.

**Structured Education and Management of the Surgical Pathology Laboratory:**

Written manuals relating to the office’s certification by the National Association of Medical Examiners (NAME) and information on potentially hazardous materials as determined by OSHA are available for review by the resident.
Required Conference/Seminars:

- **Case review:** Daily at 7:30 in the morning, Monday through Friday and at hours arranged with the Medical Examiner Staff on weekends. This is a review of the cases reported over the last 24 hours to the Medical Examiner’s Office and review of any outstanding cases which have not yet been completed or have jurisdiction determined. This conference provides a weekly forum for trainee and faculty discussion of difficult and unusual cases.

- **Weekly toxicology conference:** Tuesday afternoons. Medical Examiner cases with outstanding toxicology results and/or with interesting toxicology results are discussed with the clinical toxicologist and that laboratory staff. Following this, a journal club format followed where one or two interesting forensic toxicology articles are discussed. During the course of the one-month rotation, the visiting resident is expected to conduct the journal club portion of the toxicology conference. This conference provides a weekly forum for trainee and faculty discussion of difficult and unusual cases.

- **Neuropathology:** Formalin-fixed brain cutting is undertaken with two board-certified forensic neuropathologists twice a month. Brains which are saved for neuropathology consultation on the cases the resident has done are reviewed with the resident and a report by the resident after consultation with the neuropathology staff and the Medical Examiner staff is generated.

- **Emergency Medicine Department:** Thursday mornings the resident may participate in the stabilization room conference. The Emergency Department presents the course of a decedent and the visiting resident may provide correlation with autopsy findings to the Emergency Department residents. This conference provides an avenue for trainee peer teaching. This clinical provides trainees with the opportunity to present pathologic findings for correlation and discussion.

Optional Conferences:

Conferences with visiting attorneys and other agencies involved with the death investigation involving a case autopsied by the visiting resident or the Medical Examiner staff or forensic fellow are available for the resident to attend. These come up frequently enough that the resident should be exposed to one or more of these during his or her rotation. Courtroom testimony may also occur during the resident’s rotation, and he or she is invited to attend the courtroom proceedings with the forensic fellow or Medical Examiner staff whose appearance has been requested by the courts.

Scholarly Activities and Research During Rotation:

Residents are encouraged to further research interesting toxicology findings and/or causes of death by reviewing the written and/or archival Medical Examiner cases as well as performing an on-line Internet Medline literature search.

Basis and Method of Resident Evaluation:
Evaluation of the resident is based on fund of knowledge, autopsy skill, quality of autopsy reports, ability to interpret and correlate all information collected on a case to arrive at a cause and manner of death. The formal evaluation occurs at the end of the rotation generally with a verbal discussion between the Medical Examiner's staff and the resident.

Residents will be evaluated on performance of daily activities (described previously), participation in required meetings and conferences, and presentations to the staff on assigned cases. The residents are provided with continuous feedback on their performance during the rotation. In general, only deficiencies are noted in writing. Residents are evaluated on their demonstrated ability to provide informative consultation to the clinical service teams, their medical knowledge, their application of this knowledge to efficient/quality patient care, and their diagnostic, technical and observational skills. Residents are also evaluated on their interpersonal skills, professional attitudes, reliability, and ethics with members of the teaching faculty, peers, laboratory staff, and clinicians. They are further evaluated on their initiative in fostering quality patient care and use of the medical literature, as it relates to their assigned cases. Their timely completion of assigned interpretive reports is another component of the evaluation. Residents on probation receive a written mid-rotation evaluation.

Educational Resources Available:

General Textbooks

- Forensic Pathology Principles and Practice, Dolinak, Matshes and Lew, 2005
- Handbook of Forensic Pathology, DiMaio and Dana, 2007
- Knight’s Forensic Pathology Third Edition, Saukko and Knight, 2004

Toxicology:

- Disposition of Toxic Drugs and Chemicals in Man, Baselt, Seventh Edition, 2004

Gunshot Wounds:


Anthropology:

- Human Bone Manual, White and Folkens, 2005
- Introduction to Forensic Anthropology A Textbook, Byers, 2002

Periodicals:
• Journal of Forensic Sciences (Quarterly)
• The American Journal of Forensic Medicine and Pathology (Quarterly)