

Forensic Pathology Fellowship Training Manual

Goals, Assessment, and Administration

University of North Dakota School of Medicine and Health Sciences

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Overview of Program

The Fellowship Program in Forensic Pathology at the University of North Dakota School of Medicine and Health Sciences (UNDSMHS) provides training in forensic pathology over one year. Recognizing the service to the public within Forensic Pathology through excellence in clinical practice and vital service within public and population health, the UND Forensic Pathology fellowship supports a physician-scientist route within public health or bioinformatics. Fellows can extend the training by an additional year and achieve an MPH from the University of North Dakota during their fellowship. The fellowship and faculty are integral components of the medical school, thus providing solid and natural academic exposure, training, and opportunities. This program is uniquely suited for individuals pursuing 1) rural forensic pathology, 2) academically-oriented forensic pathology, 3) direct public health training, 4) research or health policy careers complementing the practice of forensic pathology.

The forensic practice covers North Dakota and nine counties within Northwestern Minnesota. In addition, Coroner requested autopsies from additional counties in Minnesota and South Dakota to add to the investigative diversity of cases. Fellows learn and participate in differing medicolegal jurisdictions and systems. In Grand Forks County and Minnesota counties, the office has primary death investigation responsibilities, allowing fellows to work scene investigations directly. In other ND counties, the Coroner may do the initial death investigation and refer the case for a forensic autopsy. ND Century Code requires Coroners to report all deaths allowing the forensic office to assume jurisdiction, so there is a natural, strong working relationship with individual ND County Coroners. Finally, Coroners in South Dakota and some MN counties may request forensic autopsies with the investigation totally within the Coroner's domain. From primary medicolegal investigation to autopsy consultation, the jurisdictional variety provides fellows with a wide range of experience reflective of different medicolegal jurisdictions in the US. It provides experience and training meeting individual medicolegal requirements within three states. Finally, an international component occurs with the physical proximity of Canada and the relatively facile movement across the Northern border of ND and MN. One of our primary counties, Lake of the Woods, actually has a part of the county accessible only through Canada.

There is a vital educational component and excellent support services to the forensic practice. The caseload of individual faculty forensic pathologists is about half of most offices, reflective of faculty's academic and research expectations. This allows unsurpassed workup and learning with individual cases. All cases have histology performed in the departmental histology laboratory unless restrictions or practical limitations (such as skeletonization and advanced decomposition) exist. There is a full complement of special stains, including immunostaining, within this laboratory and collaborating hospital laboratories. Faculty and fellows use professional judgment and have freedom when requesting histology, radiology, or other specialized testing. Excellent support is present from the Counties we serve and from the University of North Dakota School of Medicine and Health Sciences. Superior relationships exist with police, sheriff, courts, and other agencies involved in forensic pathology practice.

The academic base of the program provides maximum exposure to the community and translational research in forensic pathology with bioinformatics / medical informatics-based in the department. The department is also the base of an 18M ND INBRE grant (research infrastructure); this grant focuses on research infrastructure and the STEM and healthcare pipeline development among tribal communities,

rural communities, and first-generation college students. There is a strong community-focused translational research effort with a 20.1 M Clinical and Translational Research IDeA award from the NIH within the school with a strong contribution from the department. A major focus of this CTR is indigenous health and minority health disparities, including rural communities. The department is also home to the North Dakota Statewide Cancer Registry, a CDC-funded central cancer registry for the state of North Dakota. The department of pathology is also heavily involved in medical student teaching, allowing the fellow opportunity in a variety of undergraduate teaching opportunities. There is no University hospital, there is NO Pathology residency program; no pathology assistant program at UND. There is a Medical Laboratory Science program at the BS, MS, and Categorical (Certificate) level but most students are distance students and there is no formal autopsy experience for the students. The department has a clinical translational science (CTS) graduate program however, this is basic research-based and does not utilize autopsy and clinical facilities. The research and bioinformatics base, as well as the strong links to the public health program (MPH) at UNDSMHS further, enhances the fellow experience. **The forensic fellow will have a maximum educational experience with very little competition for instruction and case development. The broad range of learners, at very different levels than the fellow, will enhance teaching development and opportunities for the fellow.** This provides a robust educational experience for the fellow.

Congruent with the history and practice of forensic pathology and the mission of UNDSMHS, a strong emphasis on diversity and equity is a component of the UND Forensic Pathology fellowship program. Throughout the history of forensic pathology, many individuals were exemplary in supporting pillars of social justice, standing for truth when political forces were in opposition. Forensic pathologists assure the final testimony of each human is delivered with respect, equality, and dignity. No other field of medicine contributes and measures depravity, bravery, and beneficence in humans. Each day we make a difference in the lives of people we meet and it ripples to those we do not meet. All of us stand for principles and unbiased truth-finding using all the skills we have to accomplish that goal. Most of our careers will have major cases that are felt long after official closure. A few of us may stand with the giants before us – speaking the truth, respecting our decedents, and telling their tales against fabrications of convenient political forces. This fellowship will provide some basic skills and tools. The guidance for truth must come from within. The fellows we seek are committed to truth, embrace diversity, and are proud to be part of medicine that will deal with all humans without concern for age, gender, race, ethnicity, wealth, power, abilities, or station of life.

During fellowship training in forensic pathology, the fellow will receive graduated responsibility to allow the development and utilization of skills in forensic pathology. By the midpoint of the training, the fellow should be making independent decisions and autopsy diagnoses and refining the knowledge and skills gained in the practice of forensic pathology. Progression through the program includes input and evaluation from each faculty mentor, overseen by the program director. The extensive faculty interaction with trainees, resources of the department and school, strong ties with public health and research initiatives, experience in multijurisdictional and rural settings, primary death investigation abilities and strong cultural appreciation of tribal communities creates a superior learning environment. The flexible program allows trainees to obtain an MPH during the fellowship.

Mission of Program:

Truth with Respect and Compassion

UNDSMHS Forensic Pathology program is dedicated to the highest level of instruction in the tools and skills of forensic pathology and development of the social responsibility of equity, truth, fairness and inclusion. This reflects the high standards of UNDSMHS for diversity, inclusion and equity; it parallels the clinical service mission of the practice as outlined below:

The Mission and Goals of the UNDSMHS Forensic Pathology Center are:

- To provide high quality death investigation in accordance with the law and national professional standards
- To foster public health and safety with respect, honor, truth and integrity for the people, families and communities served.
- To educate the next generation of medical and health professionals
- To serve and provide rural communities with excellence in forensic pathology and death investigation services
- To discover and contribute to medical knowledge for health of individuals and communities.

We, as a team and as individuals, affirm this mission and state our respect for each other, the community we serve and the students we mentor and train. We seek knowledge from each case, each other and the forensic and medical community. We work as a team to advance medicolegal death investigation, medical knowledge and serve the learners, communities and families in our area and to extend that knowledge to others in the broader medical and forensic community. Our purpose is to discover the truth for deceased not to make cases.

Truth, integrity, respect, compassion and knowledge are the guiding principles of our practice.

Goals of Program:

The goals of the UNDSMHS Forensic Pathology Fellowship Training Program are to provide:

- An environment that encourages and monitors fellows as they develop into practicing forensic pathologists targeted for practice in forensic pathology
- The resources for this growth
 - A challenging atmosphere to assist the fellow in graduated responsibility in aspects of the practice of forensic pathology, including research and role in public health
 - A strong foundation in public health as related to forensic pathology
 - Opportunities in pathologic correlation and consultation with review by the faculty
 - Opportunities for quality improvement within practice and public health mission
 - Research experiences that further understanding of forensic pathology and development of a scientific approach to problem solving
- Strong communication skills and effective interactions with multiple rural and urban death investigators, trauma personnel and first responders.
- Sensitive and accurate communication with families regarding investigations and autopsy findings
- Cultural awareness of death rituals and needs of indigenous and other communities.
- Experience in multi-jurisdictional governance systems, challenges and opportunities within rural medicolegal death investigation systems
- Observation of court proceedings with faculty including pre-trial preparation, conferences and depositions. Preparation of personal cases for court, including actual testimony if timing permits.
- Involvement in case consultations referred to office, learning assessment of second opinions and case referral
- Opportunities for effective communication through presentation, teaching, and writing
- Achievement of competency in:
 - Patient Care
 - Medical Knowledge
 - Practice-Based Learning and Improvement
 - Interpersonal and Communication Skills
 - Professionalism
 - System-Based Practice

Commitment to Diversity, Inclusion and Equity:

Forensic pathology is the O negative of medical specialties. Everyone will die and come under our care, even for a brief administrative review. No other field has the breadth of human behaviors and the opportunities for social justice based on factual data. Our particular focus are rural communities and Native American communities due to our unique population. We strongly believe that objective public health data through excellence in forensic pathology and death investigations, provides objective but currently underutilized outcome data critical to social justice.

Required Rotation: Forensic Pathology:

The following rotations are required and comprise the fellowship training at the University of North Dakota. **For a full-time fellow completion of the educational program in 12 months of education includes these experiences and accommodates the UNDSMHS GME Leave policy of 3 weeks annually.**

- **The core rotation of the program is forensic pathology** – See block diagram. Forty-eight weeks of integrated forensic pathology along with integrated 60 hours of forensic toxicology, 40 hours of anthropology, and 60 hours of forensic science.
 - **International video conferences:** Building on research collaborations with Western Cape in South Africa, Thursday conferences (14:00 in Capetown; 07:00 / 06:00 in Grand Forks) provides international exposure to common forensic problems, science and cases
 - **Public health:** Fellows are strongly encouraged to enroll in the MPH program at UND. This has the option of an on-line degree and tuition stipend is provided. Fellows are strongly encouraged to pursue this degree and are provided with one additional funding year to complete and focus on public health forensic research project.
 - **Virtual lectures on specialized pathology:** Neuropathology, pediatric pathology, cardiac pathology and other areas applicable to forensic fellowship.
- **Forensic science (DNA, Fingerprints, ballistics, trace), forensic toxicology, anthropology, odontology and entomology:**
 - **Virtual modification:** Lectures in toxicology, forensic science, anthropology and odontology, given by Zoom or other video conference, drawn from national experts. These are scheduled throughout the year and ideally will draw on case material, i.e. work with forensic odontologist when dental ID needed; conferences with forensic toxicologist performing analysis, etc.
 - **In-person:** When travel and socialization is permitted, presumably the national workshops for forensic fellows will re-establish. These cover key areas of forensic sciences, anthropology etc. and also provide national networking for the fellows.

The decision for the approach to forensic science, anthropology and related fields will be made by the program and the fellow based on public health pandemic status, availability of courses and balancing the advantage of more personalized and directed training with continuous integration into curriculum of the virtual option and the networking advantages of the in person option.

The fellow will complete required material and rotations during a 12-month period. However, fellows are strongly encouraged, and fellow selection targeted toward those interested in public health and research. In the initial year, basic on-line coursework toward the MPH is accomplished. During the second year, the concentration is on research and completion of the MPH degree along with some clinical forensic pathology activity and medical student education. Fellows electing this route may earn a MPH during the fellowship, further enhancing physician research and academic careers. With prior approval of the program director, this path is available for fellows desiring time for research in bioinformatics, basic science of forensic pathology or similar physician scientist scholarship, including MS or PhD programs in Clinical Translational Science based in the Department of Pathology at UND. This program structure and flexibility is critical for establishing academic career paths as a physician scientist. The expectations remain the same for the fellow, the time course extended to allow concurrent academic activities.

The foundation of the UND Fellowship training is the day-to-day work in forensic pathology, including death investigation, communication with families and stakeholders, forensic pathology case materials including autopsy and ancillary studies. There is a strong public health component to the training congruent with the role of forensic pathology in public health and surveillance. Fellows are exposed to a wide variety of case material, investigations within counties and remotely in rural jurisdictions, practical experience in autopsy, reading materials, external proficiency and SAM materials (case studies, check samples), external examinations, interpretation and ordering of ancillary testing, didactic lectures, direct mentoring by board certified forensic pathologists.

Throughout the training, overarching goals within patient care, medical knowledge, practice-based learning and improvement, communication and interpersonal skills, professionalism and systems-based practice are paramount. The ultimate goal is, through knowledge, teaching, mentoring and example, to produce a professional forensic pathologist capable of achieving certification in forensic pathology by the American Board of Pathology. Furthermore, this individual can provide competent, independent professional service including excellence and ethical practice toward families, medical and other colleagues, public health, quality improvement in medical practice and society and the advancement of knowledge in the field. A strong focus of academic research and public health involvement are cornerstones of the UND Forensic Pathology Fellowship training program.

Goals of Forensic Pathology Rotation:

The ultimate goal of the fellowship is to produce a professional forensic pathologist capable of achieving certification in forensic pathology by the American Board of Pathology and of providing competent, independent professional service in the field of forensic pathology. The foundational core of this process is the achievement of competency in the art and science of medical practice across patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism and systems-based practice.

To this end the goals of the forensic pathology rotation within the fellowship are:

- Provision of a challenging environment that encourages fellows, monitors progress and assists in assuming graded responsibilities as they develop skills and training in forensic pathology
- Resources and encouragement to achieve this growth
- Opportunities for effective communication through presentation, teaching, and writing
- Research experience addressing forensic pathology, public health and development of scientific approach to thinking
- Metrics of these accomplishments and competency are in
 - Patient care
 - Medical knowledge
 - Practice-based learning and improvement
 - Interpersonal and communication skills
 - Professionalism
 - System-based practice

Patient care:

1. To demonstrate attitude, knowledge and practices that contribute to patient safety, including:
 - understanding the importance of identity and integrity of the body, scene and medical information;
 - incorporating other sources of information to case information and patient safety;
 - Understanding and following policies and deviations (waivers) from policies, trouble-shooting deviations, with goal of identifying errors to improve practice and safety.
2. Demonstrates attitudes, knowledge, and practices that enables proficient performance of gross examination, including
 - technical competence in performance of all eight components of an autopsy: 1) review of available medical history and circumstances; 2) external examination; 3) photographic documentation of injuries and disease; 4) gross dissection; 5) review of microscopic and laboratory findings; 6) preparation of written descriptions of gross and microscopic findings; 7) development of an opinion for COD and findings; 8) review of autopsy report with faculty;
 - Competence at personally performed eviscerations and dissections including the ability to perform specialized regional dissections (legs, eye removal, etc.).
 - Competence with external examinations that do not require an autopsy including documentation of pertinent findings and collection of appropriate biologic samples.
 - develop competent judgment skills regarding the acceptance of jurisdiction (or refusal of jurisdiction) in cases referred to the death investigation system;

- Achieve and demonstrate judgement skills in the management of cases referred to the office including decisions regarding the type and extent of examination and investigation, such as accepting jurisdiction, decisions for autopsy or external examination, specialized testing, etc.
- Coordination with death investigation and autopsy with post-mortem organ and tissue donation in a mutually beneficial manner.

Medical Knowledge:

1. Interpretation and Diagnostic Knowledge: Understands the types of cases most appropriate for examination by a forensic pathologist
 - To understand use, limitations and appropriateness of case acceptance, external examinations and autopsies, including extent of autopsies and use of special techniques and studies.
2. Interpretation and Diagnostic Knowledge: Demonstrates attitudes, knowledge, and practices that support the interpretation and analysis of pertinent findings in determining the cause of death
 - To instill a professional and sound approach to the use of postmortem radiographs and to develop proficiency at interpreting common postmortem radiologic findings encountered in forensic cases.
 - To demonstrate competency regarding the gross, microscopic and laboratory findings in cases investigated within the forensic pathology practice.
 - To identify causes of death and underlying conditions that may have contributed to death
3. Recognition and Reporting of Autopsy Findings: Demonstrates attitudes, knowledge, and practices that enables analysis, appraisal, and reporting of findings
 - To recognize common injury patterns, post-mortem changes and artifacts and differentiate between them.
 - To develop, improve, and make competent the trainee's forensic autopsy reporting skills
 - To develop skill in applying medical and pathology testing to post-mortem situations; knowing the requirements, strengths and limitations of clinical chemistry, microbiology, hemotopathology and similar laboratory testing within the forensic autopsy.
 - To recognize and document findings of examination accurately
 - To demonstrate evidence recognition, preservation, collection, transport, storage, analysis and maintenance of chain-of-custody.

Practice Based Learning and Improvement

1. Recognition of Errors and Discrepancies: Displays attitudes, knowledge, and practices that foster improvement of patient care from study of errors and discrepancies
 - To reflect and recognize error detection and process for quality improvement
 - Participate in quality management and improvement activities of forensic pathology center
2. Scholarly Activity: Analyzes and appraises pertinent literature, applies scientific method to identify, interprets evidence-based medicine, and applies it clinically
 - To advance public health reporting, surveillance and monitoring as related to forensic pathology and death investigations
 - To achieve a foundation for understanding on conducting research in forensic pathology by identifying a project, gathering material, analyzing data, drawing conclusions, presentation at a regional or national conference and preparing work for publication in a peer reviewed journal.

- To develop skills at obtaining relevant medical and forensic science literature as related to cases, public health and research initiatives and apply evidence based practice to cases
- To develop knowledge of research principles including IRB, human subjects, community based research and application to public health and forensic pathology
- To prepare for presentations of work at local, regional and national venues; prepare presentations for poster, platform presentations and peer-reviewed manuscripts.

Interpersonal and Communication Skills

1. Intra- and Inter-departmental and Health Care Clinical/Investigative Team Interactions: Displays attitudes, knowledge, and practices that promote safe patient care through interdisciplinary team interactions
 - To acquire a professional approach with families having cultural and / or religious objections, performance or timing requirements of an autopsy while recognizing and fulfilling legal mandates.
 - To sensitively and accurately develop communication skills with family regarding findings and investigations.
2. Interaction with Others: Seeks help when appropriate
 - To demonstrate an approach to use of consultation subspecialist pathologist in areas of pediatric, neuropathology, cardiac and others within casework of forensic pathology.
 - To develop skills in obtaining appropriate samples for potential genetic testing, recognizing and documenting when this specialized testing may be appropriate and communicating this resource with family and health system as appropriate for case.
 - To instill an adequate working knowledge of the scope and application of the forensic sciences as they pertain to forensic pathology, including toxicology, serology/DNA, firearms examination, trace evidence (criminalistics), drug identification, latent prints, forensic odontology, forensic entomology, and forensic anthropology. By extension, to develop skills in the recognition, acquisition, preservation, transfer, analysis, and interpretation of important relevant evidence.

Professionalism

1. Demonstrates honesty, integrity, and ethical behavior
 - To develop useful and professional methods and skills for rendering expert testimony.
 - To instill the concepts of ethics related to forensic pathology and testimony.
 - Understands and strives for respect, compassion and empathy
2. Demonstrates responsibility and follow-through on tasks
 - Respectful of time; prompt and reliable
 - Works with others and teams to accomplish goals
3. Giving and receiving feedback
 - Can receive, accept and provide constructive feedback to improve performance
4. Demonstrates responsiveness to each patient's distinct characteristics and needs
 - Recognizes and embraces diversity of region, varying cultural and religious ceremonies and rituals with death and disposition
 - Awareness of cultural bias to minimize impediments to care and investigations
 - Awareness and accommodation when possible for cultural / religious practices and meeting standards of death investigation

5. Demonstrates personal responsibility to maintain emotional, physical, and mental health
 - Appropriate manners and dress for job performance
 - Manages emotional, physical and mental needs, seeks appropriate assistance as needed

System Based Practice

1. Lab Management: Regulatory and compliance: Explains, recognizes, summarizes, and is able to apply regulatory and compliance issues
 - Understands components of accreditation for hospital-based, forensic science and forensic pathology/death investigation offices; may assist in review and preparation for NAME accreditation.
 - To apply knowledge of basic principles of civil and criminal law.
 - To recognize common abuse patterns and situations (child, domestic, elder) and reporting requirements for particular jurisdiction.
2. Lab Management: Quality, risk management, and laboratory safety: Explains, recognizes, summarizes, and is able to apply quality improvement, risk management, and safety issues
 - Participation in forensic QA review and proficiency testing for office
 - May design QA project for office, monitor, report and advance policy change
 - Know how to report to hospitals, health systems, CPSC, OSHA and other systems for QA and regulatory requirements
 - Obtain training in biosafety as applied to autopsy practice; know and utilize exposure protocols.
3. Interagency Interaction: Demonstrates attitudes, knowledge, and practices that facilitates medicolegal jurisprudence
 - To acquire skills in teamwork and communication across the many disciplines and individuals involved in death investigation and forensic pathology
 - Understand and appropriately apply different statutory basis for medicolegal death investigations across the 3 states and 39 counties.
 - Appreciate and seek counsel on statutory basis of investigations involving and on Tribal Lands and Reservations
 - Know resources for interfacing and resolving questions of medicolegal authority and jurisdiction
4. Scene Investigation: Demonstrates attitudes, knowledge, and practices that facilitates medicolegal jurisprudence
 - To develop, improve and achieve competency in death investigation skills, both remotely and on site. This includes effective interpersonal communication with multiple parties including law enforcement, death investigators, Coroners, medical personnel, family and others appropriate to the death investigation.

The ultimate goal of the fellowship is to produce a professional forensic pathologist capable of achieving certification in forensic pathology by the American Board of Pathology and of providing competent, independent professional service in the field of forensic pathology.

Affiliated professional fields and training:

Fields closely aligned with the professional practice of forensic pathology include toxicology, anthropology, odontology and the forensic sciences, such as firearms examination, arson investigation, tool mark, DNA identification, fingerprint examination. The fellow will have instruction in these areas and the achievement of the six core competencies.

Forensic toxicology

The fellow gains experience and interpretive expertise in forensic toxicology by study and discussion of individual cases. Milwaukee County Toxicology Laboratory, the reference and accredited toxicology laboratory used by UND Forensics, is available for discussion of interesting and difficult cases, emerging patterns of drugs and analytical challenges. The ability to properly collect and utilize toxicological findings is critical for the forensic pathologist. Toxicology contributes or is the cause of many deaths in a normal office case mix. There are significant differences between pre-mortem and post-mortem toxicology and analysis yet both share basic principles. Forensic toxicology is integral within the training at UND with toxicology requested on nearly every case. The fellow learns collection techniques, use and interpretation of toxicology, limitations based on instrumentation and post-mortem effects.

Conferences with Milwaukee County Toxicology Laboratory enhances the fellows' appreciation and knowledge base. Rotations through laboratories to observe instrumentation and testing may be arranged for fellows as mutually convenient. Scholarly activity with toxicologists are encouraged. Specific goals and topics mastered by the fellow regarding forensic toxicology (and other laboratory chemical testing appropriate to forensic pathology) include:

1. To become familiar with the proper collection and chain of custody of samples for toxicology
2. Understand post-mortem distribution and pharmacokinetics that may alter interpretation.
3. Develop a working knowledge of proper analysis techniques from screening to quantitation, including specific drug groups, alcohols, volatiles, alkaline, acid, neutral, and amphoteric drugs
4. Become familiar with analytic instruments (gas chromatography, thin-layer chromatography, mass spectrometry, immunoassay, and micro colortests)
5. Enhance proficiency in determining which toxicological analysis should be performed depending on the cause of death
6. Become familiar with common clinical chemistry testing, including electrolytes and vitreous testing, as applied to post-mortem material.
7. Correlate laboratory data with each case with interpretive summary

Forensic anthropology and odontology

Forensic anthropology and odontology are taught by experience with individual cases. The program has study sets and review material for forensic anthropology. Specialized dental equipment is present to facilitate post-mortem dental studies. Annually, dental methods result in several identifications; both human and non-human bones are represented in casework at UNDSMHS Forensic Pathology Center.

Forensic anthropology and odontology training goals are: Identify and become proficient in the basic anthropological methods to determine age, sex, ancestry (race) and stature from the human skeleton. Specific points of learning include:

1. Identify the fundamental differences between human and nonhuman skeletons.
2. List the ways forensic anthropology can assist in interpreting skeletal trauma.
3. Comprehend methods used in body search and excavation techniques; assist in appropriate excavations if available.
4. Define the theoretical and practical considerations of personal identity and evidence as it relates to forensic anthropology and the analysis and interpretation of traits for establishment of identification in specific cases.
5. Know state and tribal resources for repatriation of lost tribal remains; understand process of contemporary vs. ancient; Native vs. non-Native disposition and reporting methods.

6. List the contribution of DNA analysis and forensic odontology to victim identification.
7. Understand basic odontology charting, comparison and basis for identification.
8. Know how forensic anthropology and odontology are integrated into the response to mass disasters.

The National Museum of Health and Medicine offers a weeklong course on forensic anthropology. Fellows may attend this course and attend the laboratory sessions when offered. The following is a course description from the National Museum of Health and Medicine.

National Museum of Health and Medicine Forensic Anthropology Course Description: Forensic anthropology is concerned with the scientific recovery, analysis, and identification of human remains in the medicolegal context. Forensic anthropologists frequently apply their knowledge of human remains to victim identification, remains search and recovery, and the interpretation of skeletal trauma, including human rights investigations and mass disaster operations. This course uses hands-on lab sessions to introduce basic techniques of skeletal analysis. Lectures provide the theoretical methodological basis of human osteology and introduce applications used by anthropologists in their work.

Forensic science

Fellows receive introductory exposure and training in forensic sciences as it relates to their cases and practice. Because of the supportive relationship the office has with multiple investigative agencies, fellows work directly with investigators from major state agencies (MN – Bureau of Criminal Apprehension, BCA; ND – Bureau of Criminal Investigation, BCI), federal agencies (FBI on tribal lands) and tribal police. A single arson investigator covers all MN counties we serve; a State Fire Marshall division handles arson investigation in ND. Fellows work directly with individuals on specific cases, receiving reports and integrating into cases. Fellows are encouraged to follow testing at forensic science laboratories (Ballistics, DNA, tool-mark, arson, etc.). This is facilitated by the proximity of the Northern MN Crime Laboratory in Bemidji, MN. Forensic science experts there can video link to the UND FPC, providing didactic material and case updates. Fellows desiring hands on experience may visit this laboratory at mutually convenient times. Regional training by FBI in fingerprinting, post-mortem prints and other forensic sciences are periodically offered in the region (see brochure for November, 2019 training). Fellows would attend these smaller (10 – 20 people) hands-on sessions when available.

In addition, the US Department of Justice (or sponsored Center of Excellence) sponsors a weeklong course in forensic science training; the fellow may attend this when the course is available. The course description and objectives from past courses is:

Course Description: This workshop provides Forensic Pathology Fellows with knowledge of the scope and application of the forensic sciences within the Criminal Justice System including crime scene processing, toxicology, serology/DNA, firearm and toolmark identification, trace evidence analysis, fire debris analysis, controlled substances analysis, latent fingerprint processing, forensic odontology, forensic entomology, forensic anthropology, explosives and explosive device identification, and courtroom testimony.

The workshop includes lecture, demonstrations, laboratory activities, and instructor led discussions to illustrate the general principles presented. The workshop addresses theoretical aspects of each of the forensic sciences as well as opportunities to evaluate the application of these sciences to forensic pathology casework.

Course Objectives

1. Describe the general principles of each of the forensic science disciplines as discussed.
2. Discuss how the forensic sciences may be applied to forensic pathology cases.
3. Describe forensic pathology cases in which other forensic disciplines may be utilized.
4. Interpret data obtained from other forensic science disciplines.
5. Evaluate forensic pathology cases in light of information obtained from other forensic disciplines.

Public health

A strong focus on public health is integral to operations of the UND FPC. Faculty and fellows regularly participate in local public health panels and meetings, notably in Polk County MN and Grand Forks County, ND. Occasionally, faculty and fellows may participate in community events organized by public health officials such as drug panels, suicide prevention drives or other harm reduction strategies. Fellows are strongly encouraged to seek an MPH by extending fellowship time by one year. Fellows are encouraged to select an area of public health utilizing findings from forensic pathology offices to improve policies and surveillance.

Optional rotations / course material:

Urban Office Forensic Pathology:

Forensic offices vary in size and protocols. For fellows interested in experiencing a larger, urban office, an optional rotation with the Milwaukee forensic office may be arranged, usually in connection with fellows from an urban office rotating through the UND office. Fellows may also directly observe toxicology and the forensic sciences at this office.

Duties and Expectations of a Forensic Fellow

1. Arrive for work on time and appropriately dressed for tasks assigned or expected that day.
2. In a timely manner, manage and dispose of cases, including the performance of postmortem examinations, first as an assistant or under direct supervision, progressing to indirect supervision with direct supervision immediately available, and finally, independently with available direct supervision. The goal is to complete all autopsy examination reports within one month of the date of autopsy.
3. Accompany staff forensic pathologists to court and to all local depositions.
4. Testify in court or in depositions (if the opportunity arises during the training year), first under direct observation and then independently.
5. Participate in consultations of staff pathologists with police or attorneys, eventually conducting such consultations independently, as appropriate.
6. Provide information with guidance and supervision by staff pathologists to University, law enforcement or state's attorney office for press release, inquiries and responses.
7. Participate in any referred cases for second opinion and consultations.
8. Perform primary death investigations, including death scene visitations, accompanied by office death investigators
9. Assist in teaching medical students and other learners who rotate through the office.
10. Complete a year-end exit survey regarding the effectiveness of the training program and faculty.
11. Maintain a computer based log of cases and other experiences for review by the program director each quarter.

12. Use educational guidelines and other study guides provided during the fellowship to obtain, focus on, and read appropriate literature and as a guide during the various forensic rotations.
13. Perform autopsies and examinations during office hours (8:00-4:30) during the workweek, and cover two weekends per month with a staff pathologist. If a week brings so many cases that the fellow needs a day free from cases to catch up on paperwork, then such a safe day can be provided, with the understanding that rare cases (e.g. lightning victims or plane crash victims) would require postponing the free day for a day or two. (This caseload accounts, on average, for a workweek of approximately 35-50 hours.)
14. Observe policies and procedures required by UND GME committee, UND employees, faculty and learners. The fellow expects that staff pathologists conduct themselves by UND Policies. Respect for one's self and co-workers is fundamental; UND and the FPC values diversity and inclusion.
15. Fellows are entitled to three weeks' vacation and at least two weekends per month without assigned duties. The training program honors all duty hours and provisions of UND GME and ACGME.
16. The fellow will participate in a research project, ideally with presentation at the MN Coroners and Medical Examiners Meeting, NAME or AAFS meetings or a public health or pathology meeting. Fellows will receive funding to attend meetings in which they are presenting.
17. Upon successful completion of training in forensic pathology, the fellow receives a certificate of completion.

Graduate Medical Education Requirements

The program will follow all ACGME requirements for UND residency and fellowship programs. Residency and fellowship programs provide fellows with extensive experience in the art and science of medicine and opportunities to achieve excellence in the practice of forensic pathology for patients, families, and public safety and health. To achieve this goal, residents and fellows agree to abide by certain policies and guidelines. In return, the fellow receives a number of benefits and the training needed to be successful in their careers. These policies receive a regular, critical review by the UNDSMHS GME committee and apply to all GME programs at UNDSMHS.

UNDSMHS ACGME Policies:

UND has a range of residency and fellowship programs, many of which are supported by the State of North Dakota to address unique health care needs of the State and its citizens. There is a designated institutional officer and an active GME committee. UND programs are small, solid, community-based programs that offer flexibility to meet individual training needs. Community-based training programs offer residents /fellow's experiences in public, private, university and federal settings. These various settings give the best possible educational experiences with a wide variety of patient populations and produce physicians whose skills, knowledge and expertise improve the lives of patients, families and communities. <https://med.und.edu/residency-programs/index.html>

There are common policies for all UND GME programs and wellness resources available. This greatly enhances fellowship experience. Policies are provided below and on the UND GME page. Some unique conditions for the forensic fellowship are noted with certain policies.

Accommodation of disability:

<https://med.und.edu/policies/ files/docs/gme-accommodation-disabilities.pdf>

Alcohol and Drugs

<https://und.policystat.com/policy/5016510/latest/>

Away Rotations:

<https://med.und.edu/policies/ files/docs/gme-away-rotations.pdf>

Blood borne Pathogen Exposure Control plan:

<https://und.policystat.com/policy/4590199/latest/>

Campus resident Advocate

<https://med.und.edu/policies/ files/docs/gme-campus-resident-advocate.pdf>

Closure / reduction for residency programs

<https://med.und.edu/policies/ files/docs/gme-closure-reduction-residency-programs.pdf>

Concerns and Complaints:

<https://med.und.edu/policies/ files/docs/gme-concerns-complaints.pdf>

Conflict of Interest Assessment

<https://med.und.edu/policies/ files/docs/gme-conflict-of-interest-assessment.pdf>

Disaster

<https://med.und.edu/policies/files/docs/gme-disaster-policy.pdf>

Duty hours

<https://med.und.edu/policies/files/docs/gme-resident-duty-hours-policy.pdf>

Evaluation and advancement

<https://med.und.edu/policies/files/docs/gme-resident-evaluation-advancement-policy.pdf>

Event Notification

<https://med.und.edu/policies/files/docs/gme-event-notification-policy.pdf>

GMEC Approval and Requirement of DIO Signature

<https://med.und.edu/policies/files/docs/gme-gmec-approval-requirement-dio-signature.pdf>

GMEC Procedures and exceptions for resident duty hours:

<https://med.und.edu/policies/files/docs/gme-gmec-procedures-exceptions-resident-duty-hours.pdf>

Harassment

<http://und.edu/affirmative-action/harassment.cfm>

Immunizations

<https://med.und.edu/policies/files/docs/gme-immunization.pdf>

Inhibiting conditions

<https://med.und.edu/policies/files/docs/gme-inhibiting-conditions.pdf>

Institutional agreements and contracts

<https://med.und.edu/policies/files/docs/gme-institutional-agreements-contracts.pdf>

Leave

<https://med.und.edu/policies/files/docs/gme-leave.pdf>

Licensure

<https://med.und.edu/policies/files/docs/gme-licensure.pdf>

Note: Forensic fellows should obtain and maintain training licenses in ND and MN.

Moonlighting

<https://med.und.edu/policies/files/docs/gme-moonlighting.pdf>

Moonlighting in the practice of forensic pathology or medicolegal consulting is neither expected nor allowed. Fellows will be allowed “internal moonlighting” allowing them to be appointed as Clinical Instructor in Pathology, mentor medical and other students, participate in research and scholarly activity and facilitation within the medical curriculum. All these activities are directly supervised by faculty of UNDSMHS or on approved UNDSMHS activities, such as educational conferences and approved rotations. External moonlighting, defined as working for another medicolegal entity or medicolegal consultation is prohibited during UNDSMHS Fellowship.

Non-renewal of contract

<https://med.und.edu/policies/files/docs/gme-non-renewal-contract-policy.pdf>

Note: UND Forensic Pathology hope that there will be no reason to enact disciplinary action or non-renewal. If this occurs, the UND GME policies will be followed.

Professional expectations

<https://med.und.edu/policies/files/docs/gme-professional-expectations.pdf>

Program reports of duty hour compliance

<https://med.und.edu/policies/program-reports-duty-hour-compliance.html>

Residents as teachers

<https://med.und.edu/policies/residents-as-teachers.html>

Resident fair process and grievance procedures / Hearing procedures for grievances

<https://med.und.edu/policies/files/docs/gme-fair-process.pdf>

<https://med.und.edu/policies/files/docs/gme-hearing-procedures.pdf>

Note: Forensic pathology requires that practitioners be willing to discuss difficult matters with individuals who do not wish to hear them. Ideally, the fellow and the director would discuss a grievance would discuss a problem directly and try to find a solution. All hope that the fellow will have no need for filing a formal grievance, but if such a formal procedure is necessary, then the fellow and faculty will follow the UND GME guidelines.

Resident file content access and retention

<https://med.und.edu/policies/files/docs/gme-resident-file-content-access-retention-policy.pdf>

Resident recruitment and selection

<https://med.und.edu/policies/files/docs/gme-resident-recruitment-selection-policy.pdf>

Note: The State of North Dakota supports the forensic pathology fellowship. There is a critical shortage of forensic pathologists, particularly those with interest in rural and frontier medicolegal death investigation systems. UND has exemplary facilities and training for this as well as a strong emphasis on public health and scholarly activity. Priority is given for fellowship applicants interested or with 1) a rural background and/or 2) those with strong academic and public health policy interests.

Resident responsibilities

<https://med.und.edu/policies/files/docs/gme-resident-responsibilities-policy.pdf>

Resident transfers

<https://med.und.edu/policies/files/docs/gme-resident-transfers.pdf>

Note: Transfers are not expected during the one-year forensic pathology fellowship programs but if they occurred, would follow UNDSMHS GME guidelines.

Resident work environment

<https://med.und.edu/policies/resident-work-environment.html>

Reviewing eligibility for specialty board examinations

<https://med.und.edu/policies/files/docs/gme-reviewing-eligibility-specialty-board-exams.pdf>

Social media

<https://med.und.edu/policies/files/docs/gme-social-media.pdf>

Special review policy and protocol

<https://med.und.edu/policies/files/docs/gme-special-review-policy-protocol.pdf>

Supervision and accountability

<https://med.und.edu/policies/files/docs/gme-supervision-accountability.pdf>

Timeline of submission of PIP or equivalent to DIO

<https://med.und.edu/policies/files/docs/gme-timeline-submission-pif-equivalent-dio.pdf>

Transitions of Care

<https://med.und.edu/policies/files/docs/gme-transitions-of-care.pdf>

Note: Forensic pathology has no routine transition of care. With exceedingly rare exceptions (death or incapacitation of a pathologist), once a case is assumed by a forensic pathologist, that person completes the case and all follow-up obligations / care, i.e. court, conferences with family, completion of death certification and interaction with external agencies as appropriate.

Vendor interaction

<https://med.und.edu/policies/vendor-interaction.html>

ACGME Requirements for Forensic Pathology

These are the ACGME requirements for a forensic pathology fellowship. Clarification of how UND meets these requirements are provided in italics with the appropriate section. UND follows

UND Specifics I A, B, C, D1a

The 7900 square foot FPC has three autopsy rooms with four adult autopsy stations, triage area for radiology and external examinations, two mortuary coolers, enclosed and heated garage, offices, break room, public area and conference room. There are additional departmental facilities in the new 165,000 sq. foot medical school, including research laboratories, offices, conference rooms and classrooms, full histology laboratory, microscopy and imaging core. There is a 1200 sq. foot administrative annex and garage adjacent to the FPC.

Forensic pathology is the application of the principles of medicine and pathology to the study of sudden, unexpected, suspicious, and violent death to determine the mechanisms, cause, and manner of death. In addition to this core competency, UND forensic pathology fellowship optimizes opportunities for fellows trained as future physician scientists in public health or bioinformatics through rich resources within the Department of Pathology and the University of North Dakota and the academic focus of the

program. The program is 12 educational months in length and is sponsored by University of North Dakota in compliance with ACGME Institutional requirements. Specifics of the UND Forensic Pathology Fellowship program are provided in italics within the current (2019) ACGME requirements.

I. Oversight

- A. Sponsoring institution is University of North Dakota, an ACGME accredited Sponsoring Institution
- B. The primary (currently only) clinical site is the Forensic Pathology Center (FPC), part of UNDSMHS and the Department of Pathology. This is located at 1451 S 44nd Ave Unit G Grand Forks, ND 58201.

UND Specifics I-D1b

The program will cover the Eastern part of State of North Dakota with targeted referral of cases of interest from Western ND, nine primary counties in Minnesota (UND Forensic Pathology is the Chief Medicolegal Officer in these counties), and Coroner-referral counties from MN and SD. Summary numbers provided in application include 475 - 500 medicolegal autopsies; this is anticipated to grow slightly with establishing NAME Autopsy standards for the Western ND cases and the possible addition of other MN counties.

There is a very broad case mix within this with about 65 – 70% of cases non-natural deaths including all common injury patterns and cases within forensic pathology with an increase in work-related (drilling; oilfield), hypothermia and farm / ranch related injury over many forensic service populations.

Cases are indexed by cause and manner of death within our laboratory information system, MDILog. In addition, an Access database exists with all autopsy cases, including final diagnosis for all and histologic information for many cases. This allows maximum retrievability of cases for scholarly activity and fellow tracking.

- C. The program and institution are committed to a diverse and inclusive workforce across fellows, faculty, administrative staff and others.
- D. Resources:
 - 1. There are adequate resources for fellow education.
 - a) Fellows and faculty have office space, meeting rooms and autopsy facilities to support clinical work, educational and teaching activities and research.
 - b) Program must conduct at least 500 medicolegal autopsies annually; at least 300 additional autopsies for each additional fellowship. Cases must be indexed to permit retrieval by cause and manner of death and autopsies must be derived from a wide and comprehensive variety of case types.

- c) A laboratory consultant should be available for microbiology, clinical chemistry, serology, subspecialty pathologists, radiology, forensic toxicology, physical anthropology, odontology, firearms examination, DNA matching and other scientific studies needed to complete a death investigation.
2. The program and Sponsoring Institution must ensure a healthy and safe learning and working environment including
- a) access to food while on duty;

UND Specifics | D-2

Forensic pathology fellows take call from home and respond to scene investigations, usually with the ABMDI investigator. At scenes, police and other first responders are present; all scenes are assessed for physical safety prior to UND response. Since primary scene investigation is done routinely for only Grand Forks and parts of Polk county, most on-call activities are entirely handled from home. There were 33 scene visits last year during non-office hours, so on average an after-hours scene response occurs about every 11 days.

There are private lactation facilities, especially designed and dedicated for that purpose, within the medical school. Although there is not a dedicated lactation facility at the FPC, there is a lockable, private room with refrigeration, chairs, Wi-Fi and television that is available for this need. Forensic pathology allows a great deal of flexibility with timing of clinical duties assuring a generous allowance for time required for lactation for the well-being of the fellow and family.

Compliance with fellows with disabilities is consistent with the Sponsoring Institution policy (see UNDSMHS

- b) safe, quiet, clean and private sleep/rest facilities available and accessible for fellows with proximity appropriate for safe patient care;
- c) clean and private facilities for lactation that have refrigeration capabilities with proximity appropriate for safe patient care;
- d) security and safety measures appropriate to the participating site; and,
- e) accommodations for fellows with disabilities consistent with the Sponsoring Institutions policy

3. Fellows must have ready access to subspecialty-specific and other appropriate reference

UND Specifics | D1c

The office is NAME accredited and have access to cardiac, neuropathology and pediatric pathologists. All DNA matching and forensic science is done by state laboratories in MN and ND. One of our forensic pathologists has a MS and PhD degree in Forensic anthropology. In addition, UND pathologists are on the staff of both Altru and Sanford Pathology with access to surgical and subspecialty pathologists and clinical laboratorians. Toxicology studies are done by ABFT and CAP accredited Milwaukee County Medical Center

material in print or electronic format. This must include access to electronic medical literature databases with full text capabilities.

4. The program's educational and clinical resources must be adequate to support the number of fellows appointed to the program.

- E. A fellowship program usually occurs in the context of many learners and other care providers and limited clinical resources. It should be structured to optimize education for all learners

UND Specifics I - E

There is no competing pathology residency program, providing maximum interaction and education for the fellow. The fellow will participate and contribute to education of other learners, such as medical students on electives. This enhances, not dilutes, the educational experience of the fellow.

present.

1. Fellows should contribute to the education of residents in core programs, if present.
2. The education of other learners must not dilute the educational experience of the program's fellows.

II. Personnel

A. Program Director

1. There must be one faculty member appointed as program director with authority and accountability for the overall program, including compliance with all applicable program requirements.
 - a. The Sponsoring Institution's Graduate Medical Education Committee (GMEC) must approve a change in program director.
 - b. Final approval of the program director resides with the Review Committee

UND Specifics I D-3

The fellow has full and unrestricted access to the Medical Library at UNDSMHS with extensive full text contracts for scientific and medical literature. In addition, there is an interlibrary loan program so that PDF are available for nearly any printed material within Index Medicus without charge to the fellow or department. There are ample hard copies of reference texts for general and forensic pathology and the forensic sciences at the FPC. In addition, the UNDSMHS was designed to integrate reference librarians within departmental office areas. There is a permanent reference librarian to assist with library needs and requests within the Department of Pathology.

UND Specifics I-D-4

We are applying for one position annually so have ample educational and clinical resources.

2. The program director must be provided with support adequate for administration of the program based upon its size and configuration.
3. Qualifications of the program director
 - a. Must include subspecialty expertise and qualifications acceptable to the Review Committee; and,
 - b. must include current certification in the subspecialty for which they are the program director by the American Board of Pathology (ABPath) or by the American Osteopathic Board of Pathology (AOBPath), or subspecialty qualifications that are acceptable to the Review Committee.
 - c. must include at least three years of active participation as a specialist in forensic pathology following completion of all graduate medical education.

4. Program Director Responsibilities: The program director must have responsibility, authority, and accountability for administration and operations; teaching and scholarly activity; fellow recruitment and selection, evaluation, and promotion of fellows, and disciplinary action; supervision of fellows; and fellow education in the context of patient care. The program director must:
 - a. be a role model of professionalism
 - b. design and conduct the program in a fashion consistent with the needs of the community, the mission(s) of the Sponsoring Institution, and the mission(s) of the program
 - c. administer and maintain a learning environment conducive to educating the fellows in each of the ACGME Competency domains
 - d. develop and oversee a process to evaluate candidates prior to approval as program faculty members for participation in the fellowship program education and at least annually thereafter, as outlined in V.B.
 - e. have the authority to approve program faculty members for participation in the fellowship program education at all sites
 - f. have the authority to remove program faculty members from participation in the fellowship program education at all sites
 - g. have the authority to remove fellows from supervising interactions and/or learning environments that do not meet the standards of the program
 - h. submit accurate and complete information required and requested by the DIO, GMEC, and ACGME

UND Specifics II A 1,2,3

The program director will be Mary Ann Sens, MD, PhD. Dr. Sens is Board Certified in Anatomic and Forensic Pathology. She has practiced over 30 years and is active in several forensic and pathology organizations. Dr. Sens voluntarily recertified in Pathology in 2014 and currently is voluntarily participating in MOC/CC from the American Board of Pathology.

UND Specifics II A 4

The program director can fulfill all state requirements of the position. There is strong support from the Sponsoring Institution and the State of North Dakota provides resources for the fellowship as part of the Healthcare Workforce Initiative. The State identified forensic pathology as an area of critical need and supports Conrad J1 visa programs in forensic pathology. Policies are in place at the Sponsoring Institution for compliance with all stated duties of the ACGME program and program director. The program director and all core faculty are full time within the UNDSMHS and thus have a primary focus on educational excellence and academics. Position performance expectations for core faculty include excellence in teaching, research and mentoring of fellows. In particular, the strong research background of the program director and the department provides the professionalism, high quality approach to patient care, educational excellence and scholarly approach to work. The opportunities and support for achieving an MPH or other scholarly advancement of fellows encourages the development of physician scientists and policy makers within forensic pathology. The program is also highly sensitive and tailored to health needs, challenges and disparities in the Northern Plains, rural and Native populations.

- i. provide applicants who are offered an interview with information related to the applicant's eligibility for the relevant subspecialty board examination(s)
 - j. provide a learning and working environment in which fellows have the opportunity to raise concerns and provide feedback in a confidential manner as appropriate, without fear of intimidation or retaliation
 - k. ensure the program's compliance with the Sponsoring Institution's policies and procedures related to grievances and due process
 - l. ensure the program's compliance with the Sponsoring Institution's policies and procedures for due process when action is taken to suspend or dismiss, not to promote, or not to renew the appointment of a fellow
 - m. ensure the program's compliance with the Sponsoring Institution's policies and procedures on employment and non-discrimination; Fellows must not be required to sign a non-competition guarantee or restrictive covenant
 - n. document verification of program completion for all graduating fellows within 30 days
 - o. provide verification of an individual fellow's completion upon the fellow's request, within 30 days; and
 - p. obtain review and approval of the Sponsoring Institution's DIO before submitting information or requests to the ACGME, as required in the Institutional Requirements and outlined in the ACGME Program Director's Guide to the Common Program Requirements.
- B. Faculty
- 1. For each participating site, there must be a sufficient number of faculty members with competence to instruct and supervise all fellows at that location.
 - a) In addition to the program director, the faculty must include at least one core faculty member with demonstrated expertise in forensic pathology with either forensic pathology

certification by the ABPath or AOPath, or possess qualifications judged acceptable to the Review Committee

1. Program director or at least one core faculty member must be certified by ABPath or AOPath.
 - b) Including the program director, the physician faculty must include at least two full time forensic pathologists certified by ABPath or AOPath.
 - c) Programs with two or more fellows must have at least one more faculty member than the approved number of fellowship positions.
2. Faculty members must:
 - a) Be role models of professionalism
 - b) demonstrate commitment to the delivery of safe, quality, cost-effective, patient-centered care
 - c) demonstrate a strong interest in the education of fellows
 - d) devote sufficient time to the educational program to fulfill their supervisory and teaching responsibilities
 - e) administer and maintain an educational environment conducive to educating fellows
 - f) regularly participate in organized clinical discussions, rounds, journal clubs, and conferences; and,
 - g) pursue faculty development designed to enhance their skills at least annually.
 - h) The faculty, including the program director, must, in aggregate, devote at least 20 hours per week to fellowship-related clinical work and teaching.
3. Faculty members must be qualified
 - a) Faculty members must have appropriate qualifications in their field and hold appropriate institutional appointments
 - b) Pathologist physician faculty hold current certification from the American Board of Pathology
 - c) Core Faculty in the fellowship program are appointed by the Program Director

d) Core Faculty in the fellowship program participate in program evaluation

C. Program Coordinator

1. The program coordinator is the lead administrative person for the fellowship and manages the day-to-day operations, serves as a liaison with fellows, DIO and other program coordinators of the ACGME programs at UND.
 - The program coordinator has developmental opportunities
 - Program coordinators at UND interact with each other and with the DIO.

UND Specifics II B 1,2,3

Core pathology physician faculty members in the Forensic Pathology fellowship program are all Board certified by the American Board of Pathology. They have a passion for education and forensic pathology and maintain scholarly activities and an excellent learning environment for the fellow. There are currently FOUR forensic pathology faculty and anticipated recruitment of an additional position. This is higher than required by ACGME and represents the dedication and excellence of the educational program. All faculty participate in faculty development and are involved with scholarly activities within their profession. Leadership is encouraged locally, regionally and nationally.

Faculty are deeply committed to the communities they serve and the diversity within the communities. UND and the Department of Pathology actively promote faculty development and provide opportunities for all faculty excellence. UND Pathology participates in programs supporting MOC/CC in Pathology and Forensic Pathology. All faculty contribute to scholarship with books, book chapters, manuscripts and presentations at regional and national meetings. Some faculty hold significant grant funding; the department carries ~ 20 M in extramural funding so mentoring is available for interested faculty and fellows. Some faculty are active in educational advancement and pedagogy of teaching. There are ample University resources to support many different scholarly efforts for fellows. The ABPath approves the QA programs of the department for IV MOC. All physician faculty in pathology must achieve and maintain board certification within three years of hiring for continued employment.

Many other individuals and faculty may play a developmental role for fellows in forensic pathology. PhD research pathology faculty may assist with basic science clinical translational efforts. Bioinformatics faculty and public health faculty all may assist with a fellow's academic and career development. These faculty members have credentials and expertise in their respective areas.

D. Other Personnel

1. Death investigators: The office has a Board-certified ABMDI as lead investigator (Edward Bina) with over 15 years of experience in death investigation.
 - Full time – Death investigator / brain technician: In process of obtaining ABMDI
 - Death investigator / RN: In process of ABMDI
 - Part-time death investigators: One with ABMDI; remaining in process

2. Administrative assistant / other: Resources of the pathology and GME office are available.

III. Fellow Appointments

- A. Eligibility: UND Forensic Pathology fellowship committee follows ACGME policies for admission.
 1. All required clinical education for entry into ACGME-accredited fellowship programs must be completed in an ACGME-accredited residency program in Anatomic (AP) or Anatomic and Clinical Pathology (AP/CP). This training must come from the ABPath, an AOA-approved residency program, a program with ACGME International (ACGME-I) Advanced Specialty Accreditation, or a Royal College of Physicians and Surgeons of Canada (RCPSC)-accredited or College of Family Physicians of Canada (CFPC)-accredited residency program located in

UND Specifics II C, D

The position of Program Coordinator MAY be shared with another program at UND. Regardless, the program manager is core to the program and an integral team member. Death investigators also play a key role in a Forensic pathology fellowship. The program manager would attend and be part of the NAME and APC fellowship professional groups. There are excellent staff development benefits at UND, including tuition free courses, arts and developmental groups, and employee assistance programs.

Canada.

- a) Fellowship programs must receive verification of each entering fellow's level of competence in the required field, upon matriculation, using ACGME, ACGME-I, or CanMEDS Milestones evaluations from the core residency program.
- b) Prior to appointment in the program, fellows must have either:
 1. Successful completion of residency in AP or AP/CP, or
 2. Certification by ABPath or AOBPath in anatomic pathology
- c) Fellow eligibility exception: Review committee for pathology will allow and UND Forensic Pathology Fellowship committee will consider this exception:
 1. An ACGME-accredited fellowship program may accept an exceptionally qualified international graduate applicant who does not satisfy the eligibility requirements listed in III.A.1., but who does meet all of the following additional qualifications and conditions:
 - a. evaluation by the program director and fellowship selection committee of the applicant's suitability to enter the program, based on prior training and review of the summative evaluations of training in the core specialty; and
 - b. review and approval of the applicant's exceptional qualifications by the GMEC; and,
 - c. Verification of Educational Commission for Foreign Medical Graduates (ECFMG) certification.
 2. Applicants accepted through this exception must have an evaluation of their performance by the Clinical Competency Committee within 12 weeks of matriculation.
 3. Applicants considered for these positions are informed of the fact that their training may not lead to certification by ABPath.

- B. The UND Forensic Pathology fellowship program will not accept more fellows than approved by the review committee
- C. UND Forensic pathology fellowship program will obtain verification of educational experience and summative competency-based performance evaluation prior to acceptance of a transferring fellow and Milestone evaluations on matriculation.

IV. Educational Program

- A. The curriculum for the forensic pathology fellowship includes:
 - 1. a set of program aims consistent with the Sponsoring Institution’s mission, the needs of the community it serves, and the desired distinctive capabilities of its graduates; these are available to program applicants, fellows and faculty.
 - 2. Competency -based goals and objectives for each educational experience designed to promote progress on a trajectory to autonomous practice in their subspecialty. These must be distributed,

UND III

UNDSMHS Forensic Pathology Fellowship program will follow all rules for recruitment set forth by ACGME and UND GME Committee. Candidates must have successfully completed an ACGME approved residency in AP or AP/CP or other AP combined program when they enter fellowship. The program desires to recruit one candidate per year for the 12-month fellowship. This appointment may be extended for one year to complete the MPH or other approved academic activity. The program values creative and scholarly activity and creation of physician scientists in the field of forensic pathology, public health and health informatics.

- reviewed, and available to fellows and faculty members
- 3. delineation of fellow responsibilities for patient care, progressive responsibility for patient management, and graded supervision in their subspecialty
- 4. structured educational activities beyond direct patient care; and,
- 5. Advancement of fellows’ knowledge of ethical principles foundational to medical professionalism.

UND IV A

UNDSMHS Forensic Pathology Fellowship program has program aims and competency based goals for fellows. These are detailed in the program manual, provided to each fellow on matriculation. The ultimate goal of the fellowship is to produce a professional forensic pathologist capable of achieving certification in forensic pathology by the American Board of Pathology and of providing competent, independent professional service in the field of forensic pathology. The foundational core of this process is the achievement of competency in the art and science of medical practice across patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism and systems based practice.

B. ACGME Competencies

1. Program will integrate the following ACGME Competencies into the curriculum:
 - a) Professionalism: Fellows must demonstrate a commitment to professionalism and adherence to ethical principles. This includes but not limited to:
 1. Demonstration of honesty, integrity and ethical behavior by seeking counsel, engaging in ethical behavior, demonstrating interest in decedents and families first, empathy in difficult situations.
 2. Responsibility and follow-through on tasks
 3. Ability to give and receive feedback
 4. Responsiveness to each patients distinct characteristics and need; cultural competency, respect and appreciation of diversity
 5. Personal responsibility to maintain emotional, physical and mental health needs

UND IV B 1a: UND Goals for Professionalism

1. *Demonstrates honesty, integrity, and ethical behavior*
 - *To develop useful and professional methods and skills for rendering expert testimony.*
 - *To instill the concepts of ethics related to forensic pathology and testimony.*
 - *Understands and strives for respect, compassion and empathy*
2. *Demonstrates responsibility and follow-through on tasks*
 - *Respectful of time; prompt and reliable*
 - *Works with others and teams to accomplish goals*
3. *Giving and receiving feedback*
 - *Can receive, accept and provide constructive feedback to improve performance*
4. *Demonstrates responsiveness to each patient's distinct characteristics and needs*
 - *Recognizes and embraces diversity of region, varying cultural and religious ceremonies and rituals with death and disposition*
 - *Awareness of cultural bias to minimize impediments to care and investigations*
 - *Awareness and accommodation when possible for cultural / religious practices and meeting standards of death investigation*
5. *Demonstrates personal responsibility to maintain emotional, physical, and mental health*
 - *Appropriate manners and dress for job performance*
 - *Manages emotional, physical and mental needs, seeks appropriate assistance as needed*

- b) Patient care and procedural skills
1. Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
 2. Fellows must be able to perform all medical, diagnostic, and surgical procedures considered essential for the area of practice
 - a. Autopsies: Each fellow must perform at least 200 and not more than 250 autopsies. Competence must include:
 - i. review of the available medical history and circumstances of death
 - ii. external examination of the body;
 - iii. photographic documentation of injuries and disease processes;
 - iv. gross dissection
 - v. review of microscopic and laboratory findings
 - vi. preparation of written descriptions of the gross and microscopic findings
 - vii. development of an opinion regarding the immediate, intermediate, and underlying (proximate) cause(s) of death; and,
 - viii. review of the autopsy report with a member of the faculty.
 - b. External examinations: Fellows must demonstrate competency in performing external examinations on cases that do not require an autopsy, including documenting pertinent findings and collecting appropriate biological samples
 - c. Death investigation: Fellows must demonstrate competence in determining whether a death investigation is required under applicable statutes and in coordinating death investigations and examinations with postmortem organ and tissue donations conducted by organ procurement organizations;
 - d. Death certification: Fellows must demonstrate competence in death certification

UND IV B1b Patient Care and Procedural Skills

1. *To demonstrate attitude, knowledge and practices that contribute to patient safety, including:*
 - *understanding the importance of identity and integrity of the body, scene and medical information;*
 - *incorporating other sources of information to case information and patient safety;*
 - *understanding and following policies and deviations (waivers) from policies; trouble shooting deviations, with goal of identifying errors to improve practice and safety.*
2. *Demonstrates attitudes, knowledge, and practices that enables proficient performance of gross examination, including*
 - *technical competence in performance of all eight components of an autopsy: 1) review of available medical history and circumstances; 2) external examination; 3) photographic documentation of injuries and disease; 4) gross dissection; 5) review of microscopic and laboratory findings; 6) preparation of written descriptions of gross and microscopic findings; 7) development of an opinion for COD and findings; 8) review of autopsy report with faculty;*
 - *competence at personally performed eviscerations and dissections including the ability to perform specialized regional dissections (legs, eye removal, etc.).*
 - *competence with external examinations that do not require an autopsy including documentation of pertinent findings and collection of appropriate biologic samples.*
 - *develop competent judgment skills regarding the acceptance of jurisdiction (or refusal of jurisdiction) in cases referred to the death investigation system;*
 - *achieve and demonstrate judgement skills in the management of cases referred to the office including decisions regarding the type and extent of examination and investigation, such as accepting jurisdiction, decisions for autopsy or external examination, specialized testing, etc.*
 - *Coordination with death investigation and autopsy with post-mortem organ and tissue donation in a mutually beneficial manner.*

- c) Medical knowledge: Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social- behavioral sciences, as well as the application of this knowledge to patient care.
1. common injury patterns seen in blunt trauma, sharp injury, firearms injury, transportation-related fatalities, asphyxial injuries, temperature and electrical injuries, and suspected child and elder abuse.
 2. the basic disciplines of forensic science and their relevance to death investigation systems;
 3. the causes and autopsy findings in cases of sudden, unexpected natural deaths;
 4. common postmortem changes, including decomposition patterns;
 5. court standards on the admissibility of forensic techniques and expert testimony;
 6. general principles of a medicolegal autopsy and biosafety;
 7. proper documentation in medicolegal autopsies, including evidence recognition, collection, preservation, transport, storage, analysis, and chain-of-custody; and,
 8. the statutory basis for medicolegal death investigation systems and requirements to serve as medical examiner, coroner, or forensic pathologist

UND IV B 1 c Medical Knowledge

1. *Interpretation and Diagnostic Knowledge: Understands the types of cases most appropriate for examination by a forensic pathologist*
 - *To understand use, limitations and appropriateness of case acceptance, external examinations and autopsies, including extent of autopsies and use of special techniques and studies.*
2. *Interpretation and Diagnostic Knowledge: Demonstrates attitudes, knowledge, and practices that support the interpretation and analysis of pertinent findings in determining the cause of death*
 - *To instill a professional and sound approach to the use of postmortem radiographs and to develop proficiency at interpreting common postmortem radiologic findings encountered in forensic cases.*
 - *To demonstrate competency regarding the gross, microscopic and laboratory findings in cases investigated within the forensic pathology practice.*
 - *To identify causes of death and underlying conditions that may have contributed to death*
3. *Recognition and Reporting of Autopsy Findings: Demonstrates attitudes, knowledge, and practices that enables analysis, appraisal, and reporting of findings*
 - *To recognize common injury patterns, post-mortem changes and artifacts and differentiate between them.*
 - *To develop, improve, and make competent the trainee's forensic autopsy reporting skills*
 - *To develop skill in applying medical and pathology testing to post-mortem situations; knowing the requirements, strengths and limitations of clinical chemistry, microbiology, hemotopathology and similar laboratory testing within the forensic autopsy.*
 - *To recognize and document findings of examination accurately*
 - *To demonstrate evidence recognition, preservation, collection, transport, storage, analysis and maintenance of chain-of-custody.*

- d) Practice Based Learning and Improvement: Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning

UND IV B 1 d: Practice based Learning and Improvement

1. *Recognition of Errors and Discrepancies: Displays attitudes, knowledge, and practices that foster improvement of patient care from study of errors and discrepancies*
 - *To reflect and recognize error detection and process for quality improvement*
 - *Participate in quality management and improvement activities of forensic pathology center*
2. *Scholarly Activity: Analyzes and appraises pertinent literature, applies scientific method to identify, interprets evidence-based medicine, and applies it clinically*
 - *To advance public health reporting, surveillance and monitoring as related to forensic pathology and death investigations*
 - *To achieve a foundation for understanding on conducting research in forensic pathology by identifying a project, gathering material, analyzing data, drawing conclusions, presentation at a regional or national conference and preparing work for publication in a peer reviewed journal.*
 - *To develop skills at obtaining relevant medical and forensic science literature as related to cases, public health and research initiatives and apply evidence based practice to cases*
 - *To develop knowledge of research principles including IRB, human subjects, community based research and application to public health and forensic pathology*
 - *To prepare for presentations of work at local, regional and national venues; prepare presentations for poster, platform presentations and peer-reviewed manuscripts.*

- e) Interpersonal and Communication skills: Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

UND IV B 1 e: Communication, Interpersonal Skills

1. *Intra- and Inter-departmental and Health Care Clinical/Investigative Team Interactions: Displays attitudes, knowledge, and practices that promote safe patient care through interdisciplinary team interactions*
 - *To acquire a professional approach with families having cultural and / or religious objections, performance or timing requirements of an autopsy while recognizing and fulfilling legal mandates.*
 - *To sensitively and accurately develop communication skills with family regarding findings and investigations.*
2. *Interaction with Others: Seeks help when appropriate*
 - *To demonstrate an approach to use of consultation subspecialist pathologist in areas of pediatric, neuropathology, cardiac and others within casework of forensic pathology.*
 - *To develop skills in obtaining appropriate samples for potential genetic testing, recognizing and documenting when this specialized testing may be appropriate and communicating this resource with family and health system as appropriate for case.*
 - *To instill an adequate working knowledge of the scope and application of the forensic sciences as they pertain to forensic pathology, including toxicology, serology/DNA, firearms examination, trace evidence (criminalistics), drug identification, latent prints, forensic odontology, forensic entomology, and forensic anthropology. By extension, to develop skills in the recognition, acquisition, preservation, transfer, analysis, and interpretation of important relevant evidence.*

- f) Systems based practice: Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, including the social determinants of health, as well as the ability to call effectively on other resources to provide optimal health care.

UND IV B 1 f: Systems based practice

1. *Lab Management: Regulatory and compliance: Explains, recognizes, summarizes, and is able to apply regulatory and compliance issues*
 - *Understands components of accreditation for hospital-based, forensic science and forensic pathology/death investigation offices; may assist in review and preparation for NAME accreditation.*
 - *To apply knowledge of basic principles of civil and criminal law.*
 - *To recognize common abuse patterns and situations (child, domestic, elder) and reporting requirements for particular jurisdiction.*
2. *Lab Management: Quality, risk management, and laboratory safety: Explains, recognizes, summarizes, and is able to apply quality improvement, risk management, and safety issues*
 - *Participation in forensic QA review and proficiency testing for office*
 - *May design QA project for office, monitor, report and advance policy change*
 - *Know how to report to hospitals, health systems, CPSC, OSHA and other systems for QA and regulatory requirements*
 - *Obtain training in biosafety as applied to autopsy practice; know and utilize exposure protocols.*
3. *Interagency Interaction: Demonstrates attitudes, knowledge, and practices that facilitates medicolegal jurisprudence*
 - *To acquire skills in teamwork and communication across the many disciplines and individuals involved in death investigation and forensic pathology*
 - *Understand and appropriately apply different statutory basis for medicolegal death investigations across the 3 states and 39 counties.*
 - *Appreciate and seek counsel on statutory basis of investigations involving and on Tribal Lands and Reservations*
 - *Know resources for interfacing and resolving questions of medicolegal authority and jurisdiction*
4. *Scene Investigation: Demonstrates attitudes, knowledge, and practices that facilitates medicolegal jurisprudence*
 - *To develop, improve and achieve competency in death investigation skills, both remotely and on site. This includes effective interpersonal communication with multiple parties including law enforcement, death investigators, Coroners, medical personnel, family and others appropriate to the death investigation.*

C. Curriculum Organization and Fellow Experiences

1. The curriculum must be structured to optimize fellow educational experiences, the length of these experiences, and supervisory continuity.

UND IV C 1

The casework is varied and fellows carry cases through to completion, including court, allowing for optimal experiences. The integration of appropriate forensic science, anthropology and odontology further enhances the curriculum. Weekly case QA review, didactic sessions and mentoring provide excellent training.

UND IV C2

Not applicable; no pain management, however, forensic pathology is on the front line for drugs of abuse and drug trends. Accurate and timely surveillance, outreach, public health initiatives and clinical resource for various addiction and treatment programs are part of forensic pathology community response

2. The program must provide instruction and experience in pain management if applicable for the subspecialty, including recognition of the signs of addiction.

3. Fellows must devote at least four weeks to gain experience in the following: toxicology; physical anthropology; and components of the crime laboratory, including firearms, serology, and trace evidence.

UND IV C3

There are detailed learning objectives and goals for forensic toxicology, physical anthropology and forensic sciences. Ideally, the bulk of the learning will occur as components to specific cases where the context and interpretation add to the depth of knowledge.

Three potential structures may be involved. First, with increasing emphasis on distance learning in COVID era, video learning and conferences are foundational didactics of the program. This will allow the fellow to have education in all areas of forensic science, toxicology, odontology and anthropology via distance education if the pandemic

4. Fellow experiences must include:
- a) supervision of trainees and/or laboratory personnel, and graded responsibility, including independent diagnoses and decision- making;
 - b) scene investigations, including examination of a body before it has been disturbed;
 - c) autopsies for cases that are likely to result in criminal prosecution or civil litigation; and,
 1. Fellows must have opportunities to participate in the legal follow-up of cases occurring during the course of the fellowship.
 2. Accompanying staff pathologists when they testify in court and give depositions.
5. Fellows' clinical experience must be augmented through didactic sessions, review of the medical literature in the subspecialty area, and use of study sets of unusual cases.
6. Fellows must keep a log of their experiences, to include autopsies, external examinations, crime scene visits, and opportunities to observe or provide court testimony.

D. Scholarship

1. Program Responsibilities

- a) The program must demonstrate evidence of scholarly activities, consistent with its mission(s) and aims.
- b) The program in partnership with its Sponsoring Institution, must allocate adequate resources to facilitate fellow and faculty involvement in scholarly activities

2. Faculty Scholarly Activity

- a) Among their scholarly activity, programs must demonstrate accomplishments in at least three of the following domains:
 - Research in basic science, education, translational science, patient care, or population health
 - Peer-reviewed grants
 - Quality improvement and/or patient safety initiatives
 - Systematic reviews, meta-analyses, review articles, chapters in medical textbooks, or case reports
 - Creation of curricula, evaluation tools, didactic educational activities, or electronic educational materials
 - Contribution to professional committees, educational organizations, or editorial board
 - Innovations in education
 - b) The program must demonstrate dissemination of scholarly activity within and external to the program by the following methods: faculty participation in grand rounds, posters, workshops, quality improvement presentations, podium presentations, grant leadership, non-peer-reviewed print/electronic resources, articles or publications, book chapters, textbooks, webinars, service on professional committees, or serving as a journal reviewer, journal editorial board member, or editor, peer-reviewed publication.
3. Fellow Scholarly Activity: Each fellow must participate in scholarly activity, including at least one of the following:
- a) evidence-based presentations at journal club or meetings (local, regional, or national);
 - b) preparation and submission of articles for peer-reviewed publications; or
 - c) research.

The UND Forensic Pathology Fellowship offers trainees an excellent, academically oriented, and rigorous training program in forensic pathology with strong emphasis on rural and indigenous populations and resulting health disparities, a broad range of casework related to forensic pathology and unparalleled experiences in public health mission of forensic pathology. Fellows are strongly encouraged and have the opportunity to obtain an MPH by extending fellowship for one year with full support of the UND Fellowship Program. The program has a high learner to faculty ratio and many opportunities, resources and encouragement to thoroughly work up and learn from each case.

The learning environment is ideal for the fellow; there are no pathology residents or pathology assistant students to dilute the experience yet there are numerous medical students on visits and electives, allowing for teaching and graded supervision of the fellow. There are primary scene investigations in Grand Forks County with vehicles and ABDMI Investigators to assist. These are frequent enough for training but not overwhelming in responsibility. The curriculum is a balance between didactic lectures by faculty (forensic pathology, forensic anthropology) and other experts (forensic science, toxicology);

hands-on casework under faculty mentorship and guidance; independent and guided readings; quality assurance activities and appropriate professional conferences. Core forensic pathology faculty at UND Forensic Pathology program have PhD's in Chemistry (Mary Ann Sens) and Forensic Anthropology (Walter Kemp); Master's degrees in microbiology (Mark Koponen) and Neuroscience (Rhome Hughes).

Fellows will participate in court proceedings, initially with faculty and then in a more independent but guided and supervised role. Fellows can interact directly with most toxicologist and forensic scientists on case related work, enhancing the learning experience. The fellow will be active in public health and appropriate surveillance based on forensic caseloads. Finally, each fellow must participate in scholarly activity through presentations, peer-reviewed publications or mentored research projects.

V. Evaluation

Feedback is ongoing information provided regarding aspects of one's performance, knowledge, or understanding. The faculty empower fellows to provide much of that feedback themselves in a spirit of continuous learning and self- reflection. Feedback from faculty members in the context of routine clinical care should be frequent, and need not always be formally documented.

Formative evaluation is *monitoring fellow learning* and providing ongoing feedback that can be used by fellows to improve their learning in the context of provision of patient care or other educational opportunities. More specifically, formative evaluations help:

- fellows identify their strengths and weaknesses and target areas that need work
- program directors and faculty members recognize where fellows are struggling and address problems immediately

Summative evaluation is *evaluating a fellow's learning* by comparing the fellows against the goals and objectives of the rotation and program, respectively. Summative evaluation is utilized to make decisions about promotion to the next level of training, or program completion.

Feedback, formative evaluation, and summative evaluation compare intentions with accomplishments, enabling the transformation of a new specialist to one with growing subspecialty expertise.

A. Fellow evaluation

1. Feedback and Evaluation

- a) Faculty members must directly observe, evaluate, and frequently provide feedback on fellow performance during each rotation or similar educational assignment
 - i. Faculty members must evaluate fellow performance at least semi-annually.
 - ii. Assessment should include the quarterly review of the log of fellow experience in autopsies, external examinations, crime scene visits, and the observation and/or provision of court testimony.
- b) Evaluation must be documented at the completion of the assignment.
 - i. For block rotations of greater than three months in duration, evaluation must be documented at least every three months.
 - ii. Longitudinal experiences such as continuity clinic in the context of other clinical responsibilities must be evaluated at least every three months and at completion.
- c) The program must provide an objective performance evaluation based on the Competencies and the subspecialty- specific Milestones, and must
 - i. use multiple evaluators (e.g., faculty members, peers, patients, self, and other professional staff members);

- ii. provide that information to the Clinical Competency Committee for its synthesis of progressive fellow performance and improvement toward unsupervised practice.
 - d) The program director or designee, with the Clinical Competency Committee, must:
 - i. meet with and review with each fellow their documented semi-annual evaluation of performance, including progress along the subspecialty-specific Milestones.
 - ii. assist fellows in developing individualized learning plans to capitalize on their strengths and identify areas for growth; and,
 - iii. develop plans for fellows failing to progress, following institutional policies and procedures.
 - e) At least annually, there must be a summative evaluation of each fellow that includes readiness to progress to the next year of the program, if applicable.
 - f) The evaluations of a fellow's performance must be accessible for review by the fellow.
- 2. Final Evaluation
 - a) The program director must provide a final evaluation for each fellow upon completion of the program.
 - i. The subspecialty-specific Milestones, and when applicable the subspecialty-specific Case Logs, must be used as tools to ensure fellows are able to engage in autonomous practice upon completion of the program
 - ii. The final evaluation must:
 - a. become part of the fellow's permanent record maintained by the institution, and must be accessible for review by the fellow in accordance with institutional policy;
 - b. verify that the fellow has demonstrated the knowledge, skills, and behaviors necessary to enter autonomous practice
 - c. consider recommendations from the Clinical Competency Committee; and,
 - d. be shared with the fellow upon completion of the program.
- 3. A Clinical Competency Committee must be appointed by the program director.
 - a) At a minimum the Clinical Competency Committee must include three members, at least one of whom is a core faculty member. Members must be faculty members from the same program or other programs, or other health professionals who have extensive contact and experience with the program's fellows.
 - b) The Clinical Competency Committee must:
 - i. review all fellow evaluations at least semi-annually;
 - ii. determine each fellow's progress on achievement of the subspecialty-specific Milestones; and
 - iii. meet prior to the fellows' semi-annual evaluations and advise the program director regarding each fellow's progress.
- B. Faculty evaluation
 - 1. The program must have a process to evaluate each faculty member's performance as it relates to the educational program at least annually.
 - a) This evaluation must include a review of the faculty member's clinical teaching abilities, engagement with the educational program, participation in faculty development related to their skills as an educator, clinical performance, professionalism, and scholarly activities.

- b) This evaluation must include written, confidential evaluations by the fellows.
- 2. Faculty members must receive feedback on their evaluations at least annually. Results of the faculty educational evaluations should be incorporated into program-wide faculty development plans.
- C. Program evaluation and improvement
 - 1. The program director must appoint the Program Evaluation Committee to conduct and document the Annual Program Evaluation as part of the program's continuous improvement process.
 - a) The Program Evaluation Committee must be composed of at least two program faculty members, at least one of whom is a core faculty member, and at least one fellow.
 - b) Program Evaluation Committee responsibilities must include
 - i. acting as an advisor to the program director, through program oversight;
 - ii. review of the program's self-determined goals and progress toward meeting them;
 - iii. guiding ongoing program improvement, including development of new goals, based upon outcomes; and
 - iv. review of the current operating environment to identify strengths, challenges, opportunities, and threats as related to the program's mission and aims.
 - c) The program evaluation committee should consider the following elements in its assessment of the program
 - i. Curriculum
 - ii. outcomes from prior Annual Program Evaluation
 - iii. ACGME letters of notification, including citations, Areas for Improvement, and comments
 - iv. quality and safety of patient care
 - v. aggregate fellow and faculty:
 - a. well-being;
 - b. recruitment and retention;
 - c. diversity
 - d. engagement in quality improvement and patient safety;
 - e. scholarly activity
 - f. ACGME Resident/Fellow and Faculty Surveys (where applicable); and,
 - g. written evaluations of the program
 - vi. aggregate fellow:
 - a. achievement of the Milestones
 - b. in-training examinations (where applicable);
 - c. board pass and certification rates; and
 - d. graduate performance.
 - vii. Aggregate faculty:
 - a. evaluation; and,
 - b. Professional development
 - d) The Program Evaluation Committee must evaluate the program's mission and aims, strengths, areas for improvement, and threats

- e) The annual review, including the action plan, must
 - i. be distributed to and discussed with the members of the teaching faculty and the fellows; and
 - ii. DIO
- 2. The program must participate in a Self-Study prior to its 10-Year Accreditation Site Visit.
 - a) A summary of the Self-Study must be submitted to the DIO
- 3. One goal of ACGME-accredited education is to educate physicians who seek and achieve board certification. One measure of the effectiveness of the educational program is the ultimate pass rate. The program director should encourage all eligible program graduates to take the certifying examination offered by the applicable American Board of Medical Specialties (ABMS) member board or American Osteopathic Association (AOA) certifying board.
 - a) For subspecialties in which the ABMS member board and/or AOA certifying board offer(s) an annual written exam, in the preceding three years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that subspecialty.
 - b) For subspecialties in which the ABMS member board and/or AOA certifying board offer(s) a biennial written exam, in the preceding six years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that subspecialty.
 - c) For subspecialties in which the ABMS member board and/or AOA certifying board offer(s) an annual oral exam, in the preceding three years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that subspecialty.
 - d) For subspecialties in which the ABMS member board and/or AOA certifying board offer(s) a biennial oral exam, in the preceding six years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that subspecialty.
 - e) For each of the exams referenced in V.C.3.a)-d), any program whose graduates over the time period specified in the requirement have achieved an 80 percent pass rate will have met this requirement, no matter the percentile rank of the program for pass rate in that subspecialty.
 - f) Programs must report, in ADS, board certification status annually for the cohort of board-eligible fellows that graduated seven years earlier.

VI. Learning and Working Environment

A. Patient Safety, Quality Improvement, Supervision, and Accountability

- 1. Patient Safety and Quality Improvement: All physicians share in accountability, patient safety and quality improvement. The fellowship prepares individuals to provide the highest level of care with a continuous focus on safety and improvement. Fellows demonstrate the ability to analyze care they provide, understand their role in the health care system and team and play an active role in system improvement process.
 - a. Patient safety :
 - i. A culture of safety
 - a) The program, its faculty, residents, and fellows must actively participate in patient safety systems and contribute to a culture of safety
 - b) The program must have a structure that promotes safe, interprofessional, team-

- based care
 - ii. Education on patient safety: Programs must provide formal educational activities that promote patient safety-related goals, tools, and techniques
 - iii. Patient safety events
 - a) Residents, fellows, faculty members, and other clinical staff members must
 - a) know their responsibilities in reporting patient safety events at the clinical site
 - b) know how to report patient safety events, including near misses, at the clinical site; and,
 - c) be provided with summary information of their institution's patient safety reports.
 - b) Fellows must participate as team members in real and/or simulated interprofessional clinical patient safety activities, such as root cause analyses or other activities that include analysis, as well as formulation and implementation of actions
 - iv. Fellow education and experience in disclosure of adverse events
 - a) All fellows must receive training in how to disclose adverse events to patients and families.
 - b) Fellows should have the opportunity to participate in the disclosure of patient safety events, real or simulated.
 - b. Quality Improvement
 - i. Education in Quality Improvement
 - a) Fellows must receive training and experience in quality improvement processes, including an understanding of health care disparities
 - ii. Quality metrics
 - a) Fellows and faculty members must receive data on quality metrics and benchmarks related to their patient populations.
 - iii. Engagement in Quality Improvement activities
 - a) Fellows must have the opportunity to participate in interprofessional quality improvement activities.
 - b) This should include activities aimed at reducing health care disparities
2. Supervision and accountability
 - a. All professionals involved in a forensic case share in responsibility and accountability for that case. The faculty physician assigned to case has ultimate final responsibility. Supervision provides fellows to develop skills, knowledge and attitude required to enter an unsupervised practice.
 - i. Each forensic case has a faculty physician who is ultimately responsible for that case.
 - a) The faculty physician is assigned in MDILog
 - b) Fellows and others are also assigned and must communicate various roles in the case, especially to family and case related agencies.
 - b. Supervision may be exercised through a variety of methods. For many aspects of patient care, the supervising physician may be a more advanced fellow. Other portions of care provided by the fellow can be adequately supervised by the immediate availability of the supervising faculty member or fellow, either on site or by means of telephonic and/or electronic modalities. Some activities require the physical presence of the supervising faculty member. In some circumstances, supervision may include post-hoc review of fellow-delivered care with feedback
 - i. The program must demonstrate that the appropriate level of supervision in place for all fellows is based on each fellow's level of training and ability, as well as patient complexity and acuity. Supervision may be exercised through a variety of methods, as

appropriate to the situation

- c. Levels of supervision:
 - i. Direct Supervision – the supervising physician is physically present with the fellow and patient.
 - ii. Indirect Supervision:
 - a) with Direct Supervision immediately available – the supervising physician is physically within the hospital or other site of patient care, and is immediately available to provide Direct Supervision.
 - b) with Direct Supervision available – the supervising physician is not physically present within the hospital or other site of patient care, but is immediately available by means of telephonic and/or electronic modalities, and is available to provide Direct Supervision.
 - iii. Oversight: – the supervising physician is available to provide review of procedures / encounters with feedback provided after care is delivered.
- d. Faculty and program director may assign progressive authority and responsibility to fellows.
 - i. The program director must evaluate each fellow’s abilities based on specific criteria, guided by the Milestones
 - ii. Faculty members functioning as supervising physicians must delegate portions of care to fellows based on the needs of the patient and the skills of each fellow.
 - iii. Fellows should serve in a supervisory role to junior fellows and residents in recognition of their progress toward independence, based on the needs of each patient and the skills of the individual resident or fellow.
- e. Programs must set guidelines for circumstances and events in which fellows must communicate with supervising faculty members.
 - i. Each fellow must know the limits of their scope of authority, and the circumstances under which the fellow is permitted to act with conditional independence
 - ii. Faculty supervision assignments must be of sufficient duration to assess the knowledge and skills of each fellow and to delegate to the fellow the appropriate level of patient care authority and responsibility.

B. Professionalism

- 1. Programs, in partnership with their Sponsoring Institutions, must educate fellows and faculty members concerning the professional responsibilities of physicians, including their obligation to be appropriately rested and fit to provide the care required by their patients.
- 2. The learning objectives must:
 - a. be accomplished through an appropriate blend of supervised patient care responsibilities, clinical teaching, and didactic educational events;
 - b. be accomplished without excessive reliance on fellows to fulfill non-physician obligations; and,
 - c. ensure manageable patient care responsibilities.
- 3. The program director, in partnership with the Sponsoring Institution, must provide a culture of professionalism that supports patient safety and personal responsibility.
- 4. Fellows and faculty members must demonstrate an understanding of their personal role in the:
 - a. provision of patient- and family-centered care
 - b. safety and welfare of patients entrusted to their care, including the ability to report unsafe conditions and adverse events
 - c. assurance of their fitness for work, including:
 - i. management of their time before, during, and after clinical assignments; and,

- ii. recognition of impairment, including from illness, fatigue, and substance use, in themselves, their peers, and other members of the health care team.
 - d. commitment to lifelong learning;
 - e. monitoring of their patient care performance improvement indicators; and
 - f. accurate reporting of clinical and educational work hours, patient outcomes, and clinical experience data
5. All fellows and faculty members must demonstrate responsiveness to patient needs that supersedes self-interest. This includes the recognition that under certain circumstances, the best interests of the patient may be served by transitioning that patient's care to another qualified and rested provider.
 6. Programs, in partnership with their Sponsoring Institutions, must provide a professional, equitable, respectful, and civil environment that is free from discrimination, sexual and other forms of harassment, mistreatment, abuse, or coercion of students, fellows, faculty, and staff.
 7. Programs, in partnership with their Sponsoring Institutions, should have a process for education of fellows and faculty regarding unprofessional behavior and a confidential process for reporting, investigating, and addressing such concerns.
- C. Wellbeing
1. The responsibility of the program, in partnership with the Sponsoring Institution, to address well-being must include:
 - a) efforts to enhance the meaning that each fellow finds in the experience of being a physician, including protecting time with patients, minimizing non-physician obligations, providing administrative support, promoting progressive autonomy and flexibility, and enhancing professional relationships;
 - b) attention to scheduling, work intensity, and work compression that impacts fellow well-being;
 - c) evaluating workplace safety data and addressing the safety of fellows and faculty members;
 - d) policies and programs that encourage optimal fellow and faculty member well-being; and,
 - i. Fellows must be given the opportunity to attend medical, mental health, and dental care appointments, including those scheduled during their working hours.
 - e) attention to fellow and faculty member burnout, depression, and substance abuse. The program, in partnership with its Sponsoring Institution, must educate faculty members and fellows in identification of the symptoms of burnout, depression, and substance abuse, including means to assist those who experience these conditions. Fellows and faculty members must also be educated to recognize those symptoms in themselves and how to seek appropriate care. The program, in partnership with its Sponsoring Institution must:
 - i. encourage fellows and faculty members to alert the program director or other designated personnel or programs when they are concerned that another fellow, resident, or faculty member may be displaying signs of burnout, depression, substance abuse, suicidal ideation, or potential for violence;
 - ii. provide access to appropriate tools for self-screening; and
 - iii. provide access to confidential, affordable mental health assessment, counseling, and treatment, including access to urgent and emergent care 24 hours a day, seven days a week.

2. There are circumstances in which fellows may be unable to attend work, including but not limited to fatigue, illness, family emergencies, and parental leave. Each program must allow an appropriate length of absence for fellows unable to perform their patient care responsibilities.
 - a) The program must have policies and procedures in place to ensure coverage of patient care.
 - b) These policies must be implemented without fear of negative consequences for the fellow who is or was unable to provide the clinical work.
- D. Fatigue mitigation
1. Programs must:
 - a) educate all faculty members and fellows to recognize the signs of fatigue and sleep deprivation;
 - b) educate all faculty members and fellows in alertness management and fatigue mitigation processes; and
 - c) encourage fellows to use fatigue mitigation processes to manage the potential negative effects of fatigue on patient care and learning.
 2. Each program must ensure continuity of patient care, consistent with the program's policies and procedures referenced in VI.C.2– VI.C.2.b), in the event that a fellow may be unable to perform their patient care responsibilities due to excessive fatigue.
 3. The program, in partnership with its Sponsoring Institution, must ensure adequate sleep facilities and safe transportation options for fellows who may be too fatigued to safely return home.
- E. Clinical Responsibilities, teamwork and transitions of care
1. Clinical responsibilities: The clinical responsibilities for each fellow must be based on PGY level, patient safety, fellow ability, severity and complexity of patient illness/condition, and available support services.
 2. Teamwork: Fellows must care for patients in an environment that maximizes communication. This must include the opportunity to work as a member of effective interprofessional teams that are appropriate to the delivery of care in the subspecialty and larger health system.
 - a) Medical laboratory professionals, members of clinical service teams, and other medical professionals may be included as part of an interprofessional team.
 - b) Fellows must demonstrate the ability to work and communicate with health care professionals to provide effective, patient-focused care.
 3. Transitions of Care:
 - a) Programs must design clinical assignments to optimize transitions in patient care, including their safety, frequency, and structure
 - b) Programs, in partnership with their Sponsoring Institutions, must ensure and monitor effective, structured hand-over processes to facilitate both continuity of care and patient safety.
 - c) Programs must ensure that fellows are competent in communicating with team members in the hand-over process.
 - d) Programs and clinical sites must maintain and communicate schedules of attending physicians and fellows currently responsible for care.
 - e) Each program must ensure continuity of patient care, consistent with the program's policies and procedures referenced in VI.C.2-VI.C.2.b), in the event that a fellow may be unable to perform their patient care responsibilities due to excessive fatigue or illness, or family emergency

F. Clinical Experience and Education

1. Maximum Hours of Clinical and Educational Work per Week: Clinical and educational work hours must be limited to no more than 80 hours per week, averaged over a four-week period, inclusive of all in-house clinical and educational activities, clinical work done from home, and all moonlighting.
2. Mandatory time free of clinical work and education
 - a) The program must design an effective program structure that is configured to provide fellows with educational opportunities, as well as reasonable opportunities for rest and personal well-being.
 - b) Fellows should have eight hours off between scheduled clinical work and education periods.
 - i. There may be circumstances when fellows choose to stay to care for their patients or return to the hospital with fewer than eight hours free of clinical experience and education. This must occur within the context of the 80-hour and the one-day-off-in-seven requirements.
 - c) Fellows must have at least 14 hours free of clinical work and education after 24 hours of in-house call.
 - d) Fellows must be scheduled for a minimum of one day in seven free of clinical work and required education (when averaged over four weeks). At-home call cannot be assigned on these free days.
3. Maximum clinical work and education period length
 - a) Clinical and educational work periods for fellows must not exceed 24 hours of continuous scheduled clinical assignments.
 - i. Up to four hours of additional time may be used for activities related to patient safety, such as providing effective transitions of care, and/or fellow education.
 - a. Additional patient care responsibilities is not assigned to a fellow during this time.
4. Clinical and educational work hour exceptions
 - a) In rare circumstances, after handing off all other responsibilities, a fellow, on their own initiative, may elect to remain or return to the clinical site in the following circumstances:
 - i. to continue to provide care to a single severely ill or unstable patient
 - ii. humanistic attention to the needs of a patient or family; or,
 - iii. to attend unique educational events.
 - b) These additional hours of care or education will be counted toward the 80-hour weekly limit.
 - c) The Review Committee for Pathology will not consider requests for exceptions to the 80-hour limit to the fellows' workweek.
5. Moonlighting
 - a) Moonlighting must not interfere with the ability of the fellow to achieve the goals and objectives of the educational program, and must not interfere with the fellow's fitness for work nor compromise patient safety.
 - b) Time spent by fellows in internal and external moonlighting (as defined in the ACGME Glossary of Terms) must be counted toward the 80-hour maximum weekly limit.
6. In house night float: Night float must occur within the context of the 80-hour and one-day-off-in-seven requirements.
7. Maximum In-House on-call frequency: Fellows must be scheduled for in-house call no more frequently than every third night (when averaged over a four-week period).
8. At home call
 - a) Time spent on patient care activities by fellows on at-home call must count toward the 80-

hour maximum weekly limit. The frequency of at-home call is not subject to the every- third- night limitation, but must satisfy the requirement for one day in seven free of clinical work and education, when averaged over four weeks.

- i. At-home call must not be so frequent or taxing as to preclude rest or reasonable personal time for each fellow.
- b) Fellows are permitted to return to the hospital while on at- home call to provide direct care for new or established patients. These hours of inpatient patient care must be included in the 80-hour maximum weekly limit.

Evaluation of fellow and fellowship program

ACGME Program assessment requirement

Xx

ACGME Fellow assessment requirement

Xx

ACGME Faculty assessment requirement

xx

Curriculum

Casework

Call and Death Investigation

Didactic lectures / Guided discussions

Quality review and improvement activities

Court experience

Required and suggested readings

Required:

1. Sens MA and Hughes RH. Forensic Autopsy. Expert Pathology Series. Elsevier, 2021.
2. Spitz WU, Spitz DJ. Spitz and Fisher's Medicolegal Investigation of Death: Guidelines for the Application of Pathology to Crime Investigation 4th Edition. 2006. Charles C Thomas publisher
3. DiMaio, VJM. Gunshot wounds: Practical aspects of firearms, ballistics and forensic techniques. 3rd edition. CRC Series in Practical Aspects of Criminal and Forensic Investigations. 2015

Suggested:

Supplemental:

1. Mills, S. Histology for Pathologists, 5th ed. Wolters-Kluwer

Appendix

Didactic / discussion curriculum

General topics

- Basics of Death and Scene Investigation*
- Certification: Cause and Manner of Death*
- Cultural competency*
- Mental health and self-care*
- Types of Medicolegal systems within the US*

Injury Mechanisms

- Asphyxial Deaths*
- Blunt force trauma*
- Electrocution*
- Firearm deaths*
- Heat related deaths*
- Fire and non-fire burns
- Hypothermia
- Hyperthermia
- Post-mortem changes*
- Sharp force injury*
- Toxicology*
- Transportation related*
 - Vehicle
 - Airplane
 - Train
 - Pedestrian
 - Bicycle and non-motorized sport
 - Motorized sport vehicles
 - Farm and industry
- Water deaths*
 - Drowning
 - Barotrauma
 - Watercraft

Special types of deaths

- In custody
- Sudden death infant and child
- Sudden natural deaths in adults
- Child Abuse
- Domestic (intimate partner) abuse

Elder Abuse

Stillbirths, Abandoned infants and Neonaticide

Laboratory testing and consultation

Toxicology and postmortem distribution

Clinical chemistry in post mortem material

Microbiology, post-mortem

Genetic testing

Specialist pathology, pediatric consultations

Milestone evaluation templates:

Fellows are evaluated with this template as they progress through fellowship. The TARGET goal for fellows is to be functioning at a Level 4 at the completion of fellowship.

Patient Care:

Level 1	Level 2	Level 3	Level 4	Level 5
PC1 — Patient safety: Demonstrates attitudes, knowledge, and practices that contribute to patient safety				
Understands the importance of identity and integrity of the body and medical record/scene investigation report, and verifies the identity	Consistently checks identity and integrity of body; independently obtains clinical information when needed; incorporates other resources, such as electronic health record (EHR) and radiology; handles deviations from policies (waivers) with direct supervision	Trouble-shoots deviations from policies (waivers) with minimal supervision Contributes to practice change based on identified error or systematic problem	Independently and consistently trouble-shoots deviations from policies (waivers)	Routinely uses identified errors and discrepancies to improve practice
PC2 — Procedure: Autopsy: Demonstrates attitudes, knowledge, and practices that enables proficient performance of gross examination				
Understands the importance of confidentiality, universal precautions, chemical hazards, personal protective equipment, general principles of a medicolegal autopsy, biosafety, and organ/tissue donation	Able to perform all eight aspects of a routine autopsy Properly identifies the decedent and limitations to extent of the autopsy, if applicable Understands cultural and religious limitations on autopsies	Observes and participates in the external examinations on cases that do not require an autopsy, including, under appropriate supervision, documenting pertinent findings and collecting appropriate biological samples Demonstrates competence in	Performs external examinations on cases that do not require an autopsy, including documenting pertinent findings and collecting appropriate biological samples Performs complex gross dissection, including special dissection techniques	Teaches concepts and techniques of medicolegal death investigation

	Understands Medical Examiner Office jurisdiction regarding clinical records Demonstrates competence in timely and accurate completion of the death certificate, with direct supervision	determining whether a death investigation is required under applicable statutes	Demonstrates competence in coordinating death investigations and examinations with postmortem organ and tissue donations Consistently demonstrates competence in timely and accurate completion of death certificates	
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Medical science

Level 1	Level 2	Level 3	Level 4	Level 5
MK1 — Interpretation and Diagnostic Knowledge: Understands the types of cases most appropriate for examination by a forensic pathologist				
Understands that certain criteria should be met in order for a death to be accepted for examination by the forensic pathologist	Actively observes the decision making process in determining if a body is to be examined by the pathologist, and, if so, what type of examination (external examination vs. full autopsy) is most appropriate	Involved in the decision making process in determining whether a body will be examined by the pathologist, and, if so, what type of examination (external examination vs. full autopsy) is most appropriate	With minimal supervision, determines which cases are to be accepted for examination and what type of examination is most appropriate	Teaches the various criteria to consider when deciding whether to accept a body for examination and what type of examination is most appropriate for a given case
MK2 — Interpretation and Diagnostic Knowledge: Demonstrates attitudes, knowledge, and practices that support the interpretation and analysis of pertinent findings in determining the cause of death				
Understands the concept of diagnostic adjuncts, including histochemical, immunocytochemistry, and molecular testing Aware of the availability of ancillary laboratory tests, including toxicology, cultures, and vitreous analysis Understands the need for knowledge of pathogenesis, diagnostic	Actively observes indications for ordering diagnostic adjuncts Understands diagnostic information that ancillary tests can provide Builds upon knowledge acquired during residency of pathogenesis, diagnostic techniques, and prognostic factors in disease processes	Orders diagnostic adjuncts appropriately and can interpret results Orders ancillary laboratory testing appropriately and can interpret results Is capable of identifying the cause of death and underlying conditions that may have contributed to the cause of death	Reliably and accurately orders and accurately interprets diagnostic adjuncts prior to sign-out Reliably and accurately interprets the results of ancillary tests and appropriately incorporates these findings in the final report	Teaches the application of diagnostic adjuncts, including flow cytometric analysis, immunocytochemistry, and molecular testing Teaches the availability and utility of ancillary laboratory tests that may aid the postmortem examination

techniques, and prognostic factors in disease processes			Consistently and accurately identifies the cause of death and underlying conditions that may have contributed to the cause of death	Teaches the pathogenesis, diagnostic techniques, and prognostic factors in disease processes, cause of death and contributing underlying conditions
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MK3 — Recognition and Reporting of Autopsy Findings: Demonstrates attitudes, knowledge, and practices that enables analysis, appraisal, and reporting of findings

Is aware of common postmortem changes	Demonstrates knowledge of the basic disciplines of forensic science and their relevance to death investigation systems	Demonstrates knowledge of proper documentation in medicolegal autopsies, including evidence recognition, collection, preservation, transport, storage, analysis, and chain-of-custody Recognize common injury patterns such as are seen in blunt trauma, sharp injury, firearms injury, transportation-related fatalities, asphyxial injuries, temperature and electrical injuries, and suspected child and elder abuse Recognizes common postmortem changes and artifacts	Is capable of properly documenting findings in medicolegal autopsies, including evidence recognition, collection, preservation, transport, storage, analysis, and chain-of-custody Consistently identifies and describes common injury patterns such as are seen in blunt trauma, sharp injury, firearms injury, transportation-related fatalities, asphyxial injuries, temperature and electrical injuries, and suspected child and elder abuse Consistently differentiates injury patterns from artifacts and postmortem changes	Is proficient at, and can teach residents and fellows on, the proper documentation in medicolegal autopsies, including evidence recognition, collection, preservation, transport, storage, analysis, and chain-of-custody
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Systems Based Practice

Level 1	Level 2	Level 3	Level 4	Level 5
SBP1 — Lab Management: Regulatory and compliance: Explains, recognizes, summarizes, and is able to apply regulatory and compliance issues				
Is aware of accrediting agencies and compliance	Is aware of the accrediting agencies for	Understands the components of	Understands the components and	Participates in and complies with ongoing

for hospital-based laboratories and pathology departments	death investigation offices and laboratories	accreditation and regulatory compliance (NAME or other comparable accreditation agency)	processes for credentialing and privileging; participates in an internal or external office and/or laboratory inspection	and focused competency assessment; participates in or leads internal or external office and/or laboratory inspections
SBP2 — Lab Management: Quality, risk management, and laboratory safety: Explains, recognizes, summarizes, and is able to apply quality improvement, risk management, and safety issues				
Understands the role of quality assurance/ improvement methods, including peer review Demonstrates knowledge of proficiency testing Understands the use of laboratory information systems and computational analysis for forensic pathology reporting, data management, and quality control/assurance	Attends and actively observes at laboratory meetings and conferences related to quality assurance/improvement methods, including peer review Participates in peer review and/or proficiency testing Actively observes the use of laboratory information systems and computational analysis for forensic pathology reporting, data management, and quality control/assurance	Participates in the application of laboratory information systems and computational analysis for forensic pathology reporting, data management, and quality control/assurance	Demonstrates competence in using laboratory information systems and computational analysis for forensic pathology reporting, data management, and quality control/assurance	Completes a quality improvement (QI) project Teaches QI, risk management, and laboratory safety as they pertain to forensic pathology Teaches use of laboratory information systems and computational analysis for forensic pathology reporting, data management, and quality control/assurance
SBP3 — Interagency Interaction: Demonstrates attitudes, knowledge, and practices that facilitates medicolegal jurisprudence				
Understands the role of the Coroner's and/or Medical Examiner's Office in medicolegal jurisprudence, public health, and quality assurance of medical practice	Is aware of reporting regulations, such as legal jurisdiction, statutes regarding authorization to perform autopsy (medical examiner), device reporting, and communicable diseases reporting Understands court standards on the admissibility of forensic techniques and expert	Understands and learns to apply reporting regulations, such as legal jurisdiction and statutes regarding authorization to perform medicolegal autopsies, and verifies with supervisor on reporting of communicable diseases Demonstrates knowledge of the statutory basis for medicolegal death investigation systems and	Assesses and applies reporting regulations, such as legal jurisdiction and statutes regarding authorization to perform medicolegal autopsies, and appropriately reports communicable diseases Is capable of describing the statutory basis for medicolegal death investigation systems and requirements to serve as medical examiner,	Proficient in the discussion of reporting regulations, such as legal jurisdiction and statutes regarding authorization to perform medicolegal autopsies; develops policies on the reporting of communicable diseases Is proficient at, and can teach residents and fellows, the statutory basis for medicolegal

	testimony and depositions	requirements to serve as medical examiner, coroner, or forensic pathologist; learns to provide admissible forensic evidence and observes experienced expert testimony and depositions	coroner, or forensic pathologist; provides admissible forensic evidence and provides expert testimony and depositions on autopsies performed; observes testimonies and depositions on high profile cases by experienced staff pathologists	death investigation systems and requirements of medical examiner, coroner, or forensic pathologist; provides admissible forensic evidence and provides expert testimony and depositions on all cases
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Practice based learning and improvement

Professionalism

Professional development for fellows

Caseload distribution

The fellowship will combine caseloads from the Bismarck and Grand Forks facilities.

Bismarck:

Accident		
ATV	2	2.56%
Blunt head injury	1	1.28%
CO Poisoning	0	0.00%
Drowning	11	14.10%
Drug Poisoning	8	10.26%
Ethanol Poisoning	6	7.69%

Farm	3	3.85%
Fall on ice	1	1.28%
Fire	4	5.13%
Fluorocarbon Poisoning	0	0.00%
GSW	1	1.28%
Head injury with alcohol use	0	0.00%
Hypothermia	3	3.85%
Mechanical Asphyxia	1	1.28%
Methamphetamine Poisoning	2	2.56%
Opioid Poisoning	0	0.00%
Overdose	7	8.97%
Plane Crash	0	0.00%
Positional Asphyxia	0	0.00%
Train vs Vehicle	1	1.28%
Traffic	13	16.67%
Traffic Work	11	14.10%
Vehicle vs Pedestrian	1	1.28%
Work Related	2	2.56%
Totals	78	33.19%

Homicide		
Blunt force injury	1	12.50%
Strangulation	0	0.00%
GSW	6	75.00%
Shotgun Wound	0	0.00%
Stab Wounds	1	12.50%
Totals	8	3.40%

Natural	35	14.89%
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Pending	11	4.68%
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Suicide		
Asphyxia	0	0.00%
Drowning	0	0.00%
CO Poisoning	2	2.25%
Drug Poisoning	3	3.37%
Fall From Bridge	1	1.12%
GSW	48	53.93%

Hanging	25	28.09%
Pedestrian vs. Train	2	2.25%
Overdose	2	2.25%
Shotgun Wound	4	4.49%
Stabbing	2	2.25%
Totals	89	37.87%

Undetermined	14	100.00%
Overdose	0	0.00%
Totals	14	5.96%

Yearly Total **235**

Grand Forks (NAME Accreditation data) :			
All Autopsy Data	Sum	Calculation	
Deaths in Jurisdiction			
Deaths Reported	915		
Deaths investigated (certified)	697	76%	of deaths reported
Scenes investigated by staff	86	12%	of deaths investigated
Bodies to facility	398	57.10%	of deaths certified
Bodies transported by ME or paid by ME			
Inspections	10	1.43%	% of deaths certified
Autopsies performed	388	55.67%	% of deaths certified
Partial autopsies	4	1.03%	% of all autopsies performed
Microscopic Studies	382	98.45%	% of all autopsies performed
Blocks/case, average		13.3	blocks/case
Minimum Blocks		1	
Maximum Blocks		91	
Microbiology, cultures, titers	4	1.03%	% of all autopsies performed
Radiology Examinations	70	18.04%	% of all autopsies performed
Toxicology run	332	85.57%	% of all autopsies performed
Toxicology held	11	2.84%	% of all autopsies performed
No toxicology	55	14.18%	% of all autopsies performed
Formal Neuropathology	10	2.58%	% of all autopsies performed
Formal Cardiac Pathology	2	0.52%	% of all autopsies performed
Autopsies for Outside Jurisdictions	20	5.15%	% of all autopsies performed
Deaths certified as homicide	11	1.58%	% deaths certified
Homicides autopsied	11	2.84%	% of all autopsies performed
Deaths certified as suicide:	95	13.63%	% deaths certified
Suicides autopsied:	94	24.23%	% of all autopsies performed
Non MVA-Accident deaths certified:*	105	15.06%	% deaths certified
Non MVA-Accidents autopsied:*	98	25.26%	% of all autopsies performed
MVA Accidental deaths certified:*	64	9.18%	% deaths certified

MVA-Accidents autopsied:*	53	13.66%	% of all autopsies performed
Deaths certified as natural:	510	73.17%	% deaths certified
Naturals autopsied:*	123	31.70%	% of all autopsies performed
Deaths certified as undetermined or unclassified:*	16	2.30%	% deaths certified
Undetermined autopsied:*	16	4.12%	% of all autopsies performed
Unidentified bodies:*	0		
Unidentified bodies autopsied:*	0		% of unidentified bodies
Organ donations:*	12	3.09%	% of all autopsies performed
Corneal and other tissue donations:*	18	4.64%	% of all autopsies performed
Average number of bodies in storage at the facility per day:*	< 1		

