

**Affidavit of Dr. Michael S. Pollanen**

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In the matter of the Public Inquiry into the Safety and Security of Residents in the Long-Term Care Homes System, pursuant to the Order in Council 1549/2017 and the *Public Inquiries Act, 2009*

### **Affidavit of Dr. Michael S. Pollanen**

I, Dr. Michael S. Pollanen, of the City of Toronto, in the Province of Ontario, SOLEMNLY AFFIRM AND SAY:

1. I am the Chief Forensic Pathologist for Ontario (the “CFP”). I affirm this Affidavit as part of my evidence for the Public Inquiry into the Safety and Security of Residents in the Long-Term Care Homes System (the “Inquiry”) on the work of the Ontario Forensic Pathology Service (“OFPS”) and my involvement in the retrospective death investigations that arose after Elizabeth Wettlaufer confessed to the offences. Except where otherwise stated, I have knowledge of the information contained in this Affidavit.

#### **My Training and Experience**

2. I obtained a PhD in pathology from the University of Toronto in 1995, and completed medical school at the University of Toronto in 1999. I completed a four year residency in anatomical pathology in 2003, in addition to obtaining postgraduate training in forensic pathology in 2002. I was named one of the Founders of the subspecialty of forensic pathology in Canada, as an honorary designation from the Royal College of Physicians and Surgeons of Canada.

3. I began working full-time as a forensic pathologist for the Provincial Forensic Pathology Unit in Toronto in 2003.

4. I became the CFP of the OFPS in 2006. This is a full-time, salaried position. I was also appointed as a Deputy Chief Coroner in 2015. I do not have a specific portfolio or oversight role in this position, as it reflects an attempt to further collaboration between OCC and OFPS. I continue to hold both these positions.

5. Presently, I am a full Professor and Vice Chair (Innovation) in the Department of Laboratory Medicine and Pathobiology at the University of Toronto. I am responsible for the growth and development of the academic program in forensic pathology at the University of Toronto. In 2008, I founded the University of Toronto forensic pathology residency, and was its first Program Director. I stepped down as Program Director in early 2018. In 2006, I founded the University of Toronto forensic pathology fellowship, and was its first Program Director. I continue in that role today. In 2009, I was the founding Director of the University of Toronto Centre for Forensic Science and Medicine. I continue in this role today as well.

6. A copy of my curriculum vitae (LTCI00071737) is attached as Exhibit A to this Affidavit.

#### **Pathologists and Forensic Pathologists**

7. Pathology is the application of medical and scientific principles to understand the causes and mechanisms of disease.

8. Pathologists are specialized medical doctors who have undertaken postgraduate medical training in pathology.

9. Forensic pathologists have undertaken additional postgraduate training in forensic pathology, which is the application of medicine and science to legal issues, usually in the context of sudden death. More specifically, forensic pathologists are a specialized group of pathologists, who are trained to apply pathologic principles and methodologies to support the medicolegal and judicial

systems in determining cause and manner of death, to support the investigation of circumstances surrounding deaths, and to assist in the interpretation of post-mortem findings of medicolegal significance.

10. The role of the death investigation system under the *Coroners Act* generally is to conduct investigations in those circumstances where someone has died and there is a public interest in investigating that death. The majority of individuals die naturally of known diseases, such that there is no public interest to investigate their deaths further, and a family physician can sign their Medical Certificate of Death / Form 16. However, there are a smaller number of people in any society where the manner of death is not clear (e.g. where it is sudden and unexpected, related to violence, drugs, injury and/or crime). In those circumstances, a coroner and/or pathologist should investigate in the public interest.

11. Currently in Ontario, both pathologists and forensic pathologists perform forensic pathology services in the course of death investigations under the *Coroners Act*, as described in more detail below.

### **Training and Accreditation for Forensic Pathologists in Ontario**

12. Prior to 2009, there was not a formal accreditation of “forensic pathology” in Ontario. In practice, physicians with pathology training (and not necessarily subspecialty forensic pathology training) conducted post mortem examinations (“post mortems” or “autopsies”) in death investigations pursuant to the *Coroners Act*. Under this system, the pathologists were paid per case completed (i.e. fee-for-service).

13. Forensic pathology is now, since 2009, a formal medical subspecialty of anatomical pathology and general pathology. Copies of the *Standards of Accreditation for Residency Programs*

*in Forensic Pathology* (LTCI00071739), the *Forensic Pathology Training and Experiences* (LTCI00071740) and *Forensic Pathology Competencies* (LTCI00071741) documents established by the Royal College of Physicians and Surgeons of Canada (the “RCPSC”) are attached as Exhibit B, C and D, respectively.

14. As outlined in the aforementioned documents, in order to obtain a RCPSC certification in forensic pathology, a physician must:

- (a) obtain a RCPSC certification in anatomical pathology or general pathology, which is obtained after completion of a five year residency program;
- (b) successfully complete the RCPSC examination in forensic pathology; and
- (c) successfully complete the forensic pathology portfolio, which is a log of case work and the main educational points of the cases.

15. Forensic pathologists are required to participate in professional development activities and continuing medical education in forensic pathology to maintain their specialist competence. The OFPS collaborates with the Office of the Chief Coroner (the “OCC”) and the University of Toronto, Center for Forensic Science and Medicine, to provide educational activities in forensic pathology.

16. One example is the Annual Education Course for Coroners and Pathologists, which is a two-and-a-half day course offered jointly by the OCC and OFPS each autumn. This meets the continuing education for Maintenance of Certification program by the RCPSC. Other continuing education events for forensic pathologists are held throughout the year, including, by way of example, an Elder Abuse Conference that was held in February 2017. A copy of the agenda from the Elder Abuse Conference (LTCI00071744) is attached as Exhibit E.

## **The History and Creation of the OFPS**

17. Ontario's death investigation system is a "coroner system". It differs from that in many jurisdictions in the United States and certain provinces in Canada including Alberta, Nova Scotia, Manitoba and Newfoundland, which have "medical examiner" systems.

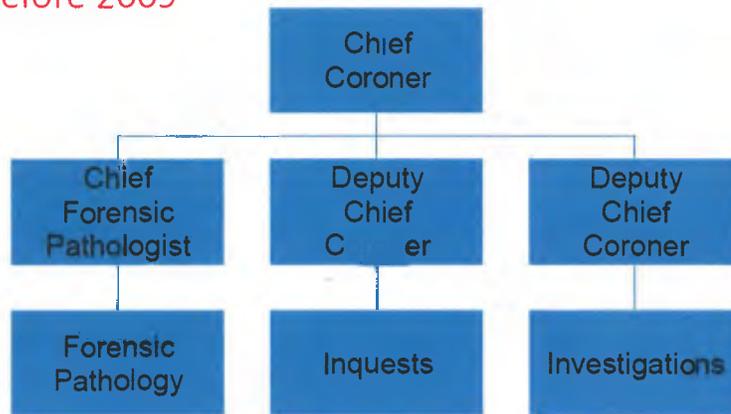
18. In a medical examiner system, forensic pathologists oversee death investigations and certify deaths, in addition to performing post mortems. In contrast, in Ontario, death investigations are run by coroners, who are responsible for certifying deaths, and who decide whether to involve forensic pathologists in the death investigation to perform a post mortem.

19. While Ontario remains a coroner system, in 2009, significant legislative and structural changes were implemented in respect of forensic pathology in Ontario, in large part as a result of the Inquiry into Pediatric Forensic Pathology in Ontario (the "Goudge Inquiry"). Amendments to the *Coroners Act* established the OFPS and the modern role of the CFP.

20. Prior to these changes, what was originally called the Forensic Pathology Branch (the "FPB") was part of the OCC. Historically, there was a CFP who was autonomous, but this role was also subsumed under the OCC in the mid-1990s. Prior to my appointment as the CFP in 2006, there were approximately 5 years where there was no individual acting as the CFP in Ontario.

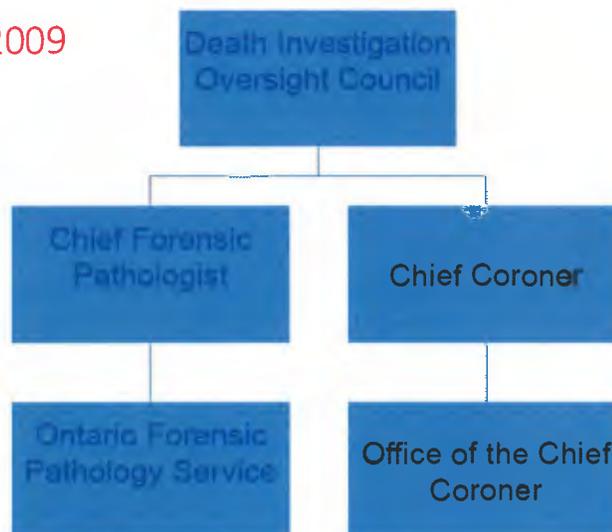
21. A diagram of the pre-2009 structure of the OCC and its forensic pathology practice is excerpted below.

Before 2009



22. Since 2009, as described further below, I as CFP no longer report to the Chief Coroner for Ontario (the “Chief Coroner”); instead, we work in tandem. A diagram of the post-2009 structure of the OCC and the OFPS is excerpted below.

After 2009



### The Legislative Framework

23. The OFPS was created by amendments to the *Coroners Act* that came into force July 27, 2009.

24. Section 6 of the *Coroners Act* directed the Minister of Community Safety and Correctional Services to establish the OFPS, “the function of which shall be to facilitate the provision of pathologists’ services under this Act”. Accordingly, the OFPS is tasked with ensuring that pathologists and forensic pathologists who participate in death investigations under the *Coroners Act* are properly trained, and that autopsies in death investigations are completed properly.

25. My role and duties as the CFP are mandated by section 7 of the *Coroners Act*, which provides that the CFP shall:

- (a) be responsible for the administration and operation of the OFPS;
- (b) supervise and direct pathologists in the provision of services under the *Coroners Act*;
- (c) conduct programs for the instruction of pathologists who provide services under the *Coroners Act*;
- (d) prepare, publish and distribute a code of ethics for the guidance of pathologists in the provision of services under the *Coroners Act*;
- (e) perform such other duties as are assigned to him or her by or under this or any other Act or by the Lieutenant Governor in Council.

26. Section 7.1 requires the creation of a register of pathologists and forensic pathologists (the “Register”) who are authorized to provide services under the *Coroners Act*. The requirements for eligibility for the Register are described below.

27. The legislative authority for the involvement of a pathologist in a death investigation is section 28(1) of the *Coroners Act*, which provides: “A coroner may at any time during an investigation issue a warrant for a pathologist to perform a *post mortem* examination of the body”.

Accordingly, in Ontario, it is the coroner's discretion whether to involve a pathologist in a death investigation. If the coroner decides that a post mortem is indicated, the coroner is required to deliver a *Warrant for Post Mortem Examination* to the pathologist, which provides the pathologist the legal authority to proceed. Section 28(3) of the *Coroners Act* directs that a pathologist to whom a *Warrant for Post Mortem Examination* is issued by a coroner shall perform the post mortem of the body.

28. An important change in the death investigation system occurred by way of the addition of subsection 28(9), which directs that a coroner may issue a *Warrant for Post Mortem Examination* only to a pathologist whose name is on the Register. This adds a significant level of oversight to the pathologists who may be involved in a death investigation, as described below.

29. Section 29 requires the pathologist who performed the post mortem to forthwith report in writing his or her findings from the autopsy, and any other examinations or analyses conducted, to the coroner who issued the *Warrant for Post Mortem Examination*, the Regional Supervising Coroner, and the CFP.

30. The *Coroners Act* is attached as Exhibit F.<sup>1</sup>

### **The Register**

31. A pathologist must be listed on the Register to be eligible to conduct a post mortem in a death investigation. These are called "medicolegal post mortems", being those autopsies performed to advance a death investigation pursuant to a coroner's *Warrant for Post Mortem Examination* issued under the *Coroners Act*.

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<sup>1</sup> *Coroners Act*, R.S.O. 1990, c. C. 37, Exhibit 4, Legislation Brief, Tab 2(2) (FD0000005).

32. My oversight as CFP is limited to those pathologists in Ontario who are on the Register, in their performance of medicolegal post mortems under the *Coroners Act*. I do not have any authority or involvement in respect of pathologists who do not apply to be listed on the Register, or who perform post mortems in hospital at the request, for example, of next-of-kin (described further below).

33. As of May 30, 2018, there were 113 pathologists and forensic pathologists on the Register, and therefore eligible under the *Coroners Act* to perform medicolegal post mortems in the context of a death investigation.

34. Every pathologist in Ontario is entitled to apply to be on the Register. A Credentialing Committee of senior forensic pathologists at the OFPS advises me as CFP on appointments, continuing professional development, renewals, reclassifications, suspensions and removal from the Register. I may take into account educational standards, including successful completion of the RCPSC forensic pathology examination or equivalent, relevant experience, and other factors I deem appropriate.

35. Every pathologist on the Register will be assigned to one of three categories based on their qualifications, authorizing them to perform:

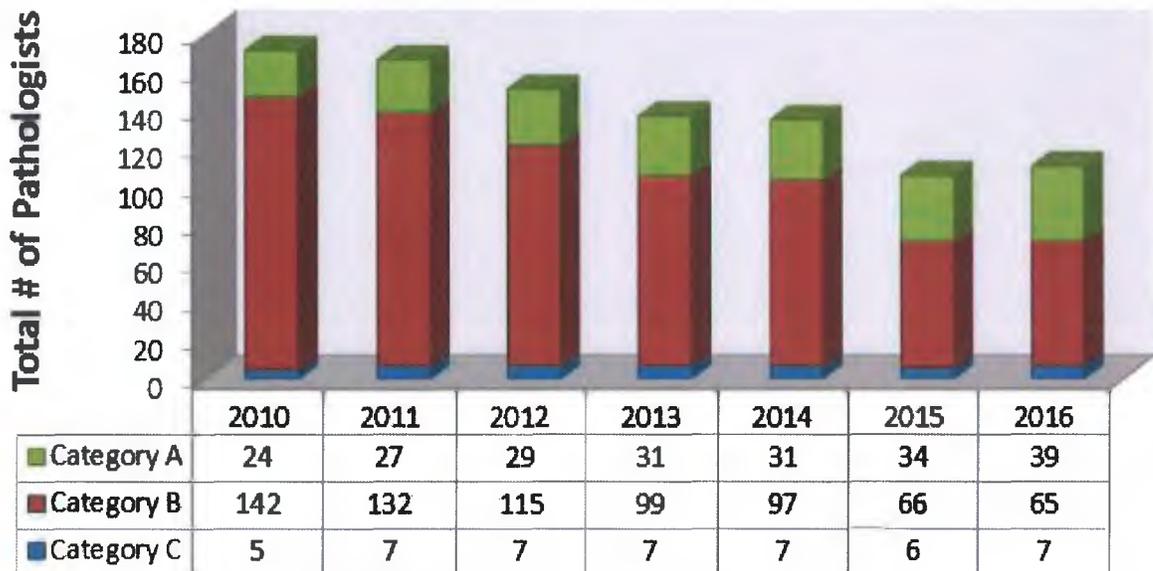
- (a) Category A: all medicolegal post mortems, including homicide and criminally suspicious cases. These pathologists are recognized as having additional experience, training and/or certification in forensic pathology. As of 2016, there were 39 Category A forensic pathologists on the Register;
- (b) Category B: all medicolegal post mortems excluding homicide and criminally suspicious cases, and excluding cases of infants and children under five years of age.

As of 2016, there were 65 Category B pathologists and forensic pathologists on the Register;

- (c) Category C: post mortems of infants and children under five years of age only, and excluding homicide and criminally suspicious cases. As of 2016, there were 7 Category C pathologists and forensic pathologists on the Register.

36. The chart demonstrating the Register Composition by Pathologist Category, as contained in the OFPS Annual Report dated July 27, 2015 to July 26, 2016 (LTCI00071426) is excerpted below. A copy of that Annual Report is also attached as Exhibit G.

### Register Composition by Pathologist Category



37. For each medicolegal autopsy, the appropriate category of pathologist or forensic pathologist will be assigned depending on the case. In practice, the investigating coroner would contact Provincial Dispatch to advise where the body needed to be transported so that the appropriate

category of pathologist would be involved. The Regional Supervising Coroner may be involved in this determination.

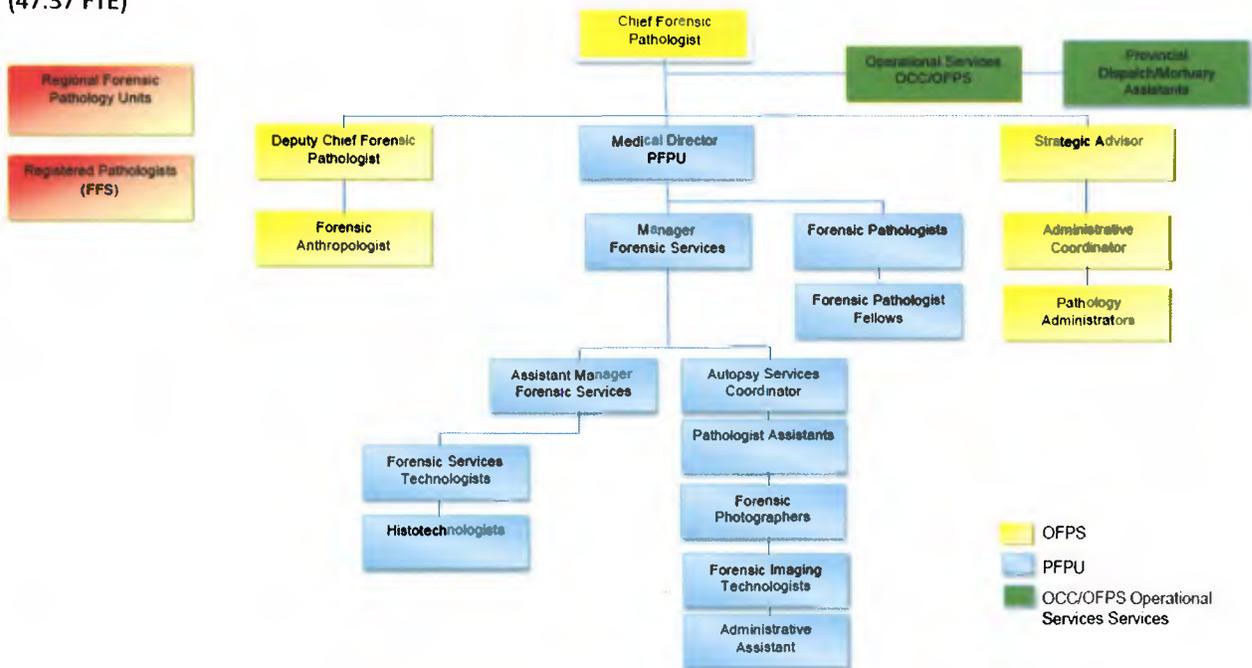
**The Present Structure of the OFPS**

38. The OFPS and the OCC are supported by a shared administrative service. The OFPS’s central office is in Toronto at the Forensic Services and Coroner’s Complex, a facility that also houses:

- the OCC;
- the Provincial Forensic Pathology Unit (the “PFPU”), described below; and,
- the Centre for Forensic Sciences (“CFS”), described below.

39. An organizational chart of the OFPS/PFPU 2018 Organizational Structure is excerpted below.

**OFPS/PFPU 2018 Organizational Structure (47.37 FTE)**



40. The OFPS Directorate is staffed by me, my Deputy Chief Forensic Pathologist, and my executive assistant.

41. Both the OCC and OFPS are overseen by the Death Investigation Oversight Council (“DIOC”), which is a body comprised of legislatively defined appointees of the Lieutenant Governor of Ontario and is tasked with advising the government on death investigations and overseeing the activities of the OCC and OFPS.<sup>2</sup> The DIOC is an independent oversight council that acts to ensure that death investigation services are provided in a transparent, effective and accountable manner. DIOC provides oversight of Ontario’s coroners and forensic pathologists in a variety of areas. DIOC provides advice and makes recommendations to the Chief Coroner and the CFP on matters that include: financial resource management; recruiting; strategic planning; quality assurance, performance measures and accountability mechanisms; and compliance with the *Coroners Act*. The DIOC is also tasked with reviewing complaints about death investigations, coroners and pathologists involved in death investigations.

42. As CFP, I am responsible for supervising the pathologists on the Register in the provision of services under the *Coroners Act*.

43. My supervisory role is substantial. Each morning I receive a list of autopsies that were conducted the prior day by way of the Pathology Information Management System. Pathologists generate entries in the Pathology Information Management System once an autopsy is completed. The information I review in the list of autopsies conducted the prior day includes: the decedent’s name, age, location, pathologist assigned, brief history, initial autopsy findings, and cause of death if determined.

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<sup>2</sup> *Coroners Act*, R.S.O. 1990, c. C. 37, s. 8, (FD0000005), Exhibit 4, Legislation Brief, Tab 2(2).

44. Cases that are assigned as “high profile” (by the Regional Supervising Coroner) are managed in real-time by email communication to the forensic pathologist on-call and me. Examples of high profile cases include: homicides, pediatric cases, cases involving organ donation, complex cases, or cases with significant media attention. I will receive a notification email initiated by the Regional Supervising Coroner that includes: the decedent’s name, age, location, the investigating coroner, a brief description of the circumstances surrounding death, and an intention of where the autopsy is to occur. I may intercede at that time and direct the body to be transferred to a different location.

45. For all autopsies, my office receives a copy of the Report of Post Mortem Examination once complete, of which there are approximately 7,000 annually.

46. Pathologists on the Register operate in one of three settings: the PFPU, the regional Forensic Pathology Units (“Regional FPU’s”), and community hospitals, each of which is reviewed below.

47. The PFPU is a forensic pathology unit that is responsible for:

- performing post mortems arising from the Greater Toronto Area; and
- acting as the central referral facility for complex post mortems across the province (including homicides, skeletal remains and the violent deaths of children).

48. The Medical Director of the PFPU reports to me as CFP. The PFPU is staffed by forensic pathologists (currently 13, all of whom have completed subspecialty forensic pathology training and who work full time for the PFPU), forensic anthropologists, pathologist assistants, technologists and imaging specialists, as well as administrative and management personnel. In total, the PFPU performs approximately 2,700 autopsies annually.

49. The PFPU also operates the University of Toronto's forensic pathology residency training program.

50. The Regional FPU's are units that perform forensic pathology services outside of the Greater Toronto Area. The Regional FPU's operate out of university teaching hospitals in Hamilton, Kingston, London, Ottawa, Sault Ste. Marie and Sudbury. Each Regional FPU is managed by a Medical Director, who is a senior forensic pathologist, who fulfills that role on a full time or nearly full time basis (depending on the size of the unit). The Regional FPU's provide regional expertise in forensic pathology for approximately 2,600 routine and complex post mortems annually, including homicides and pediatric cases.

51. The Regional FPU's are separate from the Regional Supervising Coroner offices and are funded and overseen by the OFPS. The majority of pathologists working at the Regional FPU's will have completed subspecialty forensic pathology training. Many work at the Regional PFU on a full-time basis, though this is also dependent on the size of the unit.

52. Pathologists working in 22 community hospitals may also conduct routine medicolegal post mortems pursuant to the *Coroners Act* on a fee-for-service basis (provided that they are listed on the Register). The pathologists working in the community hospitals may or may not have completed subspecialty forensic pathology training.

53. The OFPS operates a call schedule, so that any registered pathologist can seek advice or clarification from the on-call forensic pathologist at any time, even in the midst of an autopsy. This can be accessed by calling the Provincial Dispatch. The on-call forensic pathologist also assists in managing the high-profile case notification system outlined above.

54. After its first five years in existence, the OFPS developed a joint five-year strategic plan entitled “A Sustainable Future – Our Plan: The Ontario Forensic Pathology Service (2015-2020)” (LTCI00071738), to further the vision of high quality death investigation for a safer and healthier Ontario. A copy of the strategic plan is attached as Exhibit H.

### **Performing a Medicolegal Post Mortem Examination**

55. Medicolegal post mortems are autopsies performed to advance a death investigation in the interest of the public, pursuant to a coroner’s *Warrant for Post Mortem Examination* issued under the *Coroners Act*. They are distinct from hospital autopsies, which may be conducted at the request of next-of-kin in order to obtain additional information about the circumstances of death. A medicolegal post mortem does not require consent by the next-of-kin, and can be performed despite objections of the family.

56. To guide the practice of medicolegal post mortems in Ontario, the OFPS has developed the *2014 Practice Manual for Pathologists* (the “Practice Manual”) (LTCI00071746). The Practice Manual provides the professional and policy foundation for the OFPS and is intended to promote consistent and high quality practices across Ontario. The Practice Manual is attached as Exhibit I to this Affidavit, and is comprised of:

- (a) the Code of Ethics;
- (b) the Practice Guidelines for Medicolegal Post Mortem Examinations (the “Practice Guidelines”);
- (c) the Quality Management System; and
- (d) the Pathologist Register Protocol.

57. Within the Practice Manual, the Practice Guidelines provide that the role of a pathologist in a medicolegal autopsy pursuant to a *Warrant for Post Mortem Examination* is to:

- (a) attend or assess scenes as required either before or after the autopsy;
- (b) perform the medicolegal autopsy as directed by the *Warrant*;
- (c) obtain the assistance of any person or persons in performing the autopsy and in conducting any other examinations and analyses;
- (d) conduct or direct any person other than a coroner to conduct other examinations and analyses that he or she considers appropriate in the circumstances;
- (e) provide a professionally independent and impartial opinion on the cause and mechanism of death and other medicolegally relevant issues within the scope of forensic and anatomic/general pathology;
- (f) report preliminary findings to the CFP, the coroner and investigators as appropriate;
- (g) provide a final report of the autopsy and any other examinations or analyses to the coroner, the regional coroner and to the CFP;
- (h) provide expertise to the coronial or legal system.

58. I review the following with respect to medicolegal post mortems below:

- (a) determining the scope of the post mortem;
- (b) determining cause of death; and
- (c) preparation of the final Report of Post Mortem Examination.

**(a) *Determining the Scope of the Post Mortem***

59. The role of the pathologist or forensic pathologist in a death investigation is to provide an opinion on cause of death where it has not been determined by the coroner. Depending on the case, pathologists, in conducting their autopsies, may consider and rely upon internal and/or external examinations, toxicology results, additional laboratory tests, medical records, and any other relevant data.

60. Upon receipt of a *Warrant for Post Mortem Examination*, and in the course of the death investigation, the pathologist must determine the scope of the autopsy necessary for the case. This includes a consideration of:

- (a) a complete versus limited autopsy;
- (b) collection and submission of toxicology samples; and
- (c) consideration of additional testing, if necessary.

**(b) *Complete vs. Limited Post Mortems***

61. A post mortem can take several forms, including:

- (a) a complete post mortem (both external and internal examination); and
- (b) a limited post mortem (external examination only).

62. An external examination will include review and documentation of :

- (a) clothing and personal effects;
- (b) length and weight of the body;

- (c) identifying features (colour of hair, scars and tattoos, presence or absence of teeth);
- (d) head, neck, torso, extremities, hands, fingers, external genitalia and perineum examined in a systematic matter, and positive findings (including evidence of natural disease) recorded, for example post mortem changes and state of body, and injuries, etc.

63. An internal examination (by dissection) should include:

- (a) dissection and examination of the head, brain and thoraco-abdominal organs;
- (b) dissection and examination of the neck organs (including the hyoid bone and tongue) and pelvic organs);
- (c) dissection and examination of all major organs and tissues (with the precise technique left to the discretion of the pathologist); and
- (d) all major organs weighed and macroscopic lesions described.

64. The Practice Guidelines provide a list of case types that almost always require an internal examination, which include (among others):

- (a) all sudden and unexpected deaths in infants, children, and young adults (defined as mostly under 40 years of age);
- (b) all homicides and criminally suspicious deaths;
- (c) deaths likely due to drug/alcohol intoxication, including unexpected death in the context of chronic alcoholism; and

- (d) all unexpected deaths that are likely related to a complication of a therapeutic intervention, or with coronial concerns about the quality of health care.

65. A pathologist conducting a medicolegal post mortem has the discretion to only conduct a limited post mortem (i.e. external examination only). The Practice Guidelines provide that deciding only to conduct a limited post mortem should be done:

- after discussion with the investigating coroner and Regional Supervising Coroner;
- where the cause of death is readily apparent by external examination and/or history; and,
- the external examination did not reveal unexpected findings.

66. The Practice Guidelines further provide that a limited examination should not be done when the purpose is to differentiate between natural disease and toxicological cause of death, as those cases require complete autopsies with internal examinations by dissection.

*(c) Collection and Submission of Samples*

67. The Practice Guidelines set out those routine samples that must be collected by pathologists or forensic pathologists in all medicolegal post mortems, including: heart blood, peripheral (femoral) blood, and urine, where available. Other samples may be collected at the discretion of the pathologist.

68. Some, but not all, of these samples are then submitted for toxicology testing. If the samples are not sent for toxicology testing, they are sent for storage at the PFPU.

69. Toxicology analysis for medicolegal post mortems is performed by the CFS, which is a branch in the Public Safety Division within the Ministry of Community Safety and Correctional

Services. The CFS operates out of the same location as the PFPU and OCC in Toronto, to facilitate greater collaboration. It is a distinct entity which does not report to me as CFP.

70. The CFS conducts scientific investigations in cases involving injury or death and crimes against persons or property. The Toxicology Section analyzes body fluids for the presence of drugs, poisons and toxins in support of medicolegal death investigations and criminal investigations. The CFS provides these services to official investigating agencies in Ontario including police services and the OFPS.

71. Toxicology analysis is requested by pathologists in approximately 3,600 death investigations annually, which represents approximately 50% of the autopsies performed by OFPS pathologists annually. Pathologists and forensic pathologists at the PFPU, Regional PFUs and community hospitals each submit samples for testing by the CFS for medicolegal post mortems.

72. In determining whether to request toxicology testing, pathologists are guided by the Practice Guidelines. The Practice Guidelines provide that toxicology analysis is not required in all autopsies, and should only be requested if required for determining the cause of death or a pertinent medicolegal issue. If the pathologist submits toxicology samples to the CFS, they are required to include sufficient information to permit the forensic toxicologist to decide on the type of scope of laboratory testing to be conducted. This may include the clinical history (or investigative background) and any major anatomical findings uncovered at the autopsy. In practice, the OFPS has developed Testing Menus, which the pathologist may select in order to request specific testing be conducted by the toxicologist. In addition, the pathologist may consult with the toxicologist directly in order to determine the appropriate testing to request in a particular case. A sample Testing Menu (LTCI00072708) is attached as Exhibit J.

73. The *Coroners Act* provides that both a coroner and a pathologist may request toxicology testing in the course of a death investigation. In my view, best practices would be for the coroner to involve a pathologist in the case in order to assist in determining what (if any) toxicology testing is appropriate.

74. Toxicology analysis is required in all homicides, sudden/unexpected deaths in infants and children under five, workplace deaths subject to mandatory inquest, fatal motor vehicle collision, aviation deaths and fire-related deaths.

***(d) Histology and Additional Laboratory Testing***

75. The pathologist also has discretion to order histology testing (microscopic study of tissues) during a post mortem. The Practice Guidelines provide that, if a death has occurred due to a natural condition, histology should be used to provide reviewable documentation of a lethal disease/lesion.

76. In specific cases, laboratory testing beyond histology and toxicology can also be ordered. As noted in the Practice Guidelines, the most commonly used informative tests include: microbiology, biochemistry of vitreous fluid (e.g., diabetic ketoacidosis) and genetic testing (e.g., suspected familial arrhythmic disorders in young people, genetic thrombophilias in young people with pulmonary thromboembolism).

77. From a pathologist's perspective, testing for insulin would be considered an additional laboratory test, rather than a toxicology test. This is because it is a naturally occurring substance, rather than a "toxin". For the reasons outlined below in the section of my Affidavit titled "Challenges of Diagnosing Hypoglycemia Through Post Mortem Examination", insulin testing has not been included in the Testing Menus developed by the OFPS.

(e) ***Determining Cause of Death***

78. A pathologist is rooted in the science and medicine of a case. As such, the evidence they consider in determining cause of death differs from that used by a coroner or Court.

79. At a minimum, at the outset of their involvement in a death investigation, the pathologist or forensic pathologist will receive the *Warrant for Post Mortem Examination*, which should include some background information on the case and why their involvement was requested by the coroner. The pathologist will also have available to them, if requested, the police report (if any), medical records and photographs of the scene.

80. Before an autopsy, it would be unusual for the pathologist to have discussions with the investigating coroner. It is within their discretion to speak directly to the investigating coroner if necessary.

81. It would also be unusual for the pathologist to speak directly to next-of-kin prior to an autopsy. It would be more common for a pathologist to have contact with next-of-kin once the autopsy is completed, likely in either a compassionate or educational format. If there are enquiries to be made of the family, those will generally be communicated through the investigating coroner.

82. There are two central questions for the coroner to consider based on the autopsy findings of the pathologist:

- (a) the cause of death, which is defined as the disease or injury that ended life. The pathologist will provide an opinion to the coroner of the cause of death; and
- (b) the manner of death, being how the cause of death occurred as determined by the background circumstances. The internationally accepted classification system for

manner of death includes five categories: natural, accident, homicide, suicide, or undetermined. The pathologist does not typically opine on the manner of death.

83. The pathologist's framework to determine the cause of death involves a continuum of types of cases or classes of evidence found during post mortem:

- (a) Class 1: Definitively fatal acute pathologic finding(s). A cause of death will be Class 1, or "definitive", where the pathologist finds something that is completely incompatible with life. Examples include an intraoral shotgun wound of the head with extrusion of the brain, massive pulmonary emboli, ruptured myocardial infarcts (heart attacks with a heart ruptures), etc. Anything immediately fatal usually falls into this category. Most homicides by violence fall into this category. A very small percentage of cases are signed out with a Class 1 cause of death.
- (b) Class 2: Potentially fatal acute finding(s). A death will be Class 2 where the pathologist makes a finding of an acute event that could have been fatal, and excludes other causes of death. An example of a Class 2 finding is a decedent who had an acute myocardial infarct (heart attack with damage in the heart muscle) and/or a coronary artery thrombosis (blocked artery in the heart). A "heart attack" of this nature is potentially fatal, but some people survive. However, it is an acute disorder with a ready explanation of death, subject to any other causes of death being excluded. A slightly larger percentage of cases are signed out with a Class 2 cause of death than are signed out as a Class 1 cause of death.
- (c) Class 3: Potentially fatal chronic pathologic findings. A death will be Class 3 where the pathologist determines that there is no alternative acute cause of death under Class

1 or 2, and the decedent has a chronic ailment that could have been fatal. An example of a Class 3 death is an individual who had a “heart attack” that was successfully treated in hospital, but is left with a large scar on his/her heart, which is known to cause arrhythmia. The individual dies, and the autopsy finds no acute pathology, but the old “heart attack” is a potential cause of death. Where there is no alternative cause of death under class 1 and 2 above, the chronic ailment is identified as the cause of death. The vast majority of cases are signed out as a Class 3 cause of death.

- (d) Class 4: Non-definitive (non-specific) pathologic findings. A death will be Class 4 where the pathologist has exhaustively excluded all potential acute and chronic causes of death, and the individual has a medical condition that may be fatal. An example of a Class 4 death would be an individual with a history of epilepsy, but no marker of a recent epileptic episode. If all other acute and chronic causes are excluded, including by way of post mortem, the cause of death would be attributed based on medical history. Very few deaths are classified as Class 4, as it requires a pathologist to exhaustively exclude alternative causes of death. Where this cannot be done, the death is properly classified as Class 5 (“undetermined”).
- (e) Class 5: Undetermined. A death will be Class 5 where none of the preceding classifications are applicable, i.e. where there are no pathologic findings present that could explain the death based on inference. An example of a Class 5 death would be a 22 year old female found dead in a motel. Where the autopsy, toxicology and other laboratory tests do not reveal a cause of death, the death will be classified as undetermined.

84. This method of classification is an internal framework that is taught to pathologists and forensic pathologists to consider when determining cause and manner of death. It is not generally included in the pathologist's Report of Post Mortem Examination (described below), for example.

85. In contrast, the cause of death will be stated in the pathologist's Report of Post Mortem Examination.

86. The Practice Guidelines confirm that the cause of death must not be speculative, and the pathologist must not base any aspect of his or her opinion on untested/untestable evidence such as reported confessions or assumptions that cannot be independently validated or corroborated by other elements. If the cause of death cannot be objectively determined based on the history and post mortem, then the cause of death should be listed as undermined.

87. The pathologist's opinion on the cause of death, once determined, is then returned to the investigating coroner, who will look at the Report of Post Mortem Examination, and other available information (e.g. a confession, circumstantial information, other hearsay evidence if it exists) and will determine the medical cause of death for inclusion on the Coroner's Investigation Statement / Form 3 and Medical Certificate of Death / Form 16.

88. The coroner's standard is a balance of probabilities. The investigating coroner is not bound by the pathologist's conclusions as to cause of death, but in the large majority of cases accepts them. This is an interesting part of Ontario's coroner system, which differs from the medical examiner system wherein the medical examiner (a pathologist) certifies the cause of death. A medical examiner integrates the roles of the pathologist and coroner.

*(f) Preparation of the Report of Post Mortem Examination*

89. A Report of Post Mortem Examination (a “Report”) is required at the completion of a medicolegal autopsy. The OFPS has developed standardized headings for Reports to ensure provincial consistency, which are:

- Demographic and related information.
- History provided to pathologist.
- Identification.
- External examination.
- Signs of recent injury.
- Internal examination.
- Ancillary tests.
- Tissue retention:
  - Details regarding retained whole organs must be noted in the postmortem examination report.
  - Example of tissue retention statement: “Small tissue samples have been retained in formalin. No whole organs have been retained.”
- Summary and opinion.
- Cause of death.
- Signature.

90. Reports are to be completed in a timely manner. The OFPS policy requires 90% of Reports to be completed within 90 days of the post mortem; that certain cases may be prioritized (e.g. homicides, pediatric deaths, deaths in custody, and where the coroner requested the case be prioritized); and that no more than 10% of cases should have reports outstanding for more than 6 months without reasonable explanation.

91. Each Report must be provided to the investigating coroner, Regional Supervising Coroner's office, and the CFP for quality assurance. The Report is required to include all testing results and the *Warrant for Post Mortem Examination*. Associated invoices are to be submitted to the Regional Supervising Coroner for payment.

92. All Reports on homicide, criminally suspicious, pediatric and SIU cases are subjected to peer review, before the report is released to the coroner and other entities. The purpose of the peer review is to ensure that:

- (a) the report can be independently reviewed by another pathologist;
- (b) the report provides an expert opinion about the medicolegally relevant issues, including the cause of death; and
- (c) opinions are balanced and reasonable and can be substantiated by evidence.

93. In addition, Reports in routine cases (i.e. not complex such as homicide or criminally suspicious cases) are audited for administrative and technical accuracy. The Medical Directors of Regional FPUs review the routine case reports in their units. The CFP or his designate audit reports from community hospitals. Specifically:

- (a) an administrative audit reviews completeness and adherence to guidelines. All community hospital Reports undergo an administrative audit, and 10% of routine Regional FPU Reports undergo this audit; and
- (b) a technical audit reviews the content of the report to ensure that the approach, conclusions and opinions are appropriate and derived from the evidence. In general, 10% of routine Reports undergo a technical audit.

94. In addition, technical audits are done on 100% of Reports that fall into three categories, being:

- (a) cases with an undetermined cause of death;
- (b) non-traumatic and non-toxicologic deaths of individuals younger than 40 years old;  
and
- (c) reports from pathologists performing fewer than 20 autopsies per year.

### **Post Mortem Examinations in LTC Home Death Investigations**

95. As a practical matter, very few death investigations in the long-term care home (“LTC home”) context result in involvement by a registered pathologist or forensic pathologist.

96. By way of demonstration, the data assembled by the OCC provided that in 2015 (the most recent year with finalized statistics), of the 927 death investigations conducted in LTC homes, 81 included autopsies. In that year, a total of 15,023 death investigations were conducted, of which 6,138 included autopsies. Accordingly, less than 1% of the autopsies by OFPS registered pathologists in that year were in the LTC home context. In my experience, I would estimate that this is within the range of the autopsy rate for elderly people dying under similar circumstances in the community.

### **Insulin and Glucose**

97. Blood glucose (or, as it is commonly called, blood sugar), is a simple sugar that bodies need for fuel. Humans naturally produce two substances that stabilize glucose levels – glucagon and insulin.

98. Insulin is a hormone that lowers the level of glucose in the blood. Glucagon is the hormone that increases the level of glucose in the blood.

99. Should an individual's glucose levels go too low (a condition called hypoglycemia), glucagon is secreted to elevate the glucose level. Conversely, should an individual's glucose level go too high (a condition called hyperglycemia), naturally-produced insulin is secreted to lower the glucose level

100. Synthetic insulin is prescribed to individuals, such as diabetics, who do not naturally produce sufficient insulin to properly regulate glucose levels.

101. The brain is very vulnerable to a drop in blood glucose level. Hypoglycemia can be caused by many reasons, including the administration of excess insulin. For example, hypoglycemia can be caused by eating too little food or exercising more than normal, or more significant clinical causes such as certain types of tumors.

102. In mild hypoglycemia, the symptoms are confusion, pallor, diaphoresis, shakiness, irritability, anxiety, tachycardia, dizziness, headache, weakness, and reduced level of consciousness. In severe hypoglycemia, there can be irreversible brain damage with coma and death, which is called hypoglycemic encephalopathy. Persons with hypoglycemic encephalopathy may appear to have had a stroke, both in terms of clinical presentation and imaging.

### **Challenges of Diagnosing Hypoglycemia Through Post Mortem Examination**

103. Hypoglycemia is very difficult to identify after death through laboratory testing.

104. First, blood glucose is not normally tested during a post mortem, as it does not result in meaningful information. Blood glucose levels naturally and rapidly drop after death (although, depending on where the blood sample is taken, blood glucose may actually appear higher after

death). Even if blood glucose testing was done within an hour of death, no meaningful information can be obtained.

105. Second, the CFS does not perform insulin testing. As illustrated in the CFS Toxicology Technical Information Sheets (LTCI00071640, attached as Exhibit K), insulin is a drug for which the laboratory does not have a method of testing. If the CFS required insulin testing to be conducted, the sample would need to be sent to an off-site laboratory. To my knowledge, this occurs rarely, and perhaps once every few years.

106. I conferred with Jonathan Newman, Deputy Director of Scientific Services at the CFS, to confirm why the CFS does not conduct insulin testing. Mr. Newman has been working at CFS for over 25 years, both as a scientist and in managerial/administrative roles. I am advised by Mr. Newman and verily believe, that the CFS laboratory does not have a method for testing insulin for the following reasons:

- The expertise at CFS is directed to the analysis of small molecules that, when detected within the body of a person, would be considered drugs, toxins or poisons. Insulin, on the other hand, is a large molecule naturally occurring in the body. It can also be used therapeutically in the treatment of diabetes either in its natural form (human insulin) or as a variety of structurally-related analogues.
- Testing for the presence of insulin is done in clinical and doping control laboratories using samples from living individuals. Samples (serum) are collected and must be stored frozen, ideally at  $-80^{\circ}\text{C}$ , for the purposes of this testing.
- To identify death by exogenous insulin (insulin not produced naturally within the body of a person) a forensic science laboratory would need to identify and quantify insulin, its analogues and related compounds in post mortem samples.
- CFS does not have a method to do this and the instrumentation needed is not set up to test large biological molecules such as insulin. New instruments dedicated to this test would need to be acquired as well as expertise which is currently not within CFS Toxicology Section.

- Another challenge is that insulin and its analogues are susceptible to degradation post-mortem (in the body and in stored samples). Samples typically need to be recovered as soon as possible and immediately stored frozen to prevent loss and deleterious change. Post mortem blood samples also contain products/artefacts that typically make clinical immunoassays unsuitable.
- Thus, even if CFS were able to develop a test method the additional challenges associated with testing a post mortem sample would make determination of the presence of exogenous insulin and the levels in a specific sample very challenging. The testing may not meet the forensic requirement for reproducibility and reliability.

107. There are several additional practical challenges to identifying hypoglycemia post mortem through laboratory testing in Ontario, beyond the fact that the CFS does not have the capability to test for insulin during autopsies. These include:

- (a) A pathologist will only order toxicology and/or laboratory testing where there is an indication to do the test. As a practical matter, there would need to be significant indicators in a decedent's medical history for insulin testing to be considered and ordered;
- (b) On March 8, 2018, the Ontario government passed the *Safer Ontario Act*, which provided for the creation of the *Forensic Laboratories Act, 2018* (S.O. 2018, c. 3, Sched. 8 – not yet in force as of June 29, 2018). This legislation will prohibit the use of a test for the purpose of a legal proceeding unless the laboratory is accredited by a body prescribed by the regulations (which are anticipated to require international accreditation standards for forensic laboratories). Presently, I am not aware of an accredited laboratory in Ontario that would be able to do this type of insulin testing in light of the new requirements, at least at this time;

- (c) From a technical point of view, as outlined above, measuring insulin in a post mortem is fraught because insulin is normally present in the body. While it is possible to distinguish between natural and synthetic insulin in the body, changes that occur after death can frustrate that process;
- (d) As occurred in relation to Ms. Wettlaufer's offences, deaths from insulin administration can occur days after the insulin was administered. The passage of time of days makes detecting insulin virtually impossible; and
- (e) Universal insulin testing would be expensive.

108. There is literature to suggest post mortem laboratory testing could potentially assess whether hypoglycemia was due to naturally occurring (endogenous) or injected (exogenous) insulin, through an analysis of an individual's levels of C-peptide. C-peptide is a substance produced naturally by the body, along with insulin. It can be measured in the blood to demonstrate how much insulin is being made by the body. Exogenous insulin is an injected medication that does not have any C-peptide. A person receiving exogenous insulin will have unequal amounts of C-peptide and insulin – specifically, there will be a greater amount of insulin than C-peptide.

109. Accordingly, in the presence of hypoglycemia, the ratio between insulin and C-peptide may indicate whether exogenous insulin has been administered. While there is literature on this topic, my understanding is that these have been case reports rather than systematic studies, and that the information obtained in a particular case may be difficult to interpret.

110. In terms of other methods of detecting hypoglycemia in a post mortem, a diagnosis of hypoglycemia can possibly be corroborated or inferred on the basis of an autopsy if the individual suffered from hypoglycemic encephalopathy. Hypoglycemic encephalopathy may result in distinct

but subtle brain tissue damage that may be detected through careful dissection and analysis. However, this is a challenging diagnosis to make on post mortem and usually requires the referral of the brain to a neuropathologist.

111. As a practical matter, given the five level classification framework described above, it is very unlikely that a pathologist would detect a death caused by hypoglycemia due to exogenous insulin injection, unless there was some other information that would trigger that investigation. Even if 100% of death investigations in LTC homes resulted in autopsies, unless a death presented as a potential insulin-related death, the autopsy would likely produce Class 3 (potentially fatal chronic pathological findings) evidence that would satisfactorily determine cause of death by normal standards of practice (without further toxicology or laboratory testing, including for insulin, being deemed necessary). This is because most residents in LTC homes have various medical conditions which could, on a Class 3 basis, explain their deaths.

### **Independent Review of the Death Investigation System**

112. In 2012, the Ministry of Community Safety and Correctional Services engaged KPMG to conduct an independent review of the death investigation system in Ontario. The goal was to obtain an analysis of the (then) current state of the Ontario death investigation system, and analysis of the options for improving or enhancing the system. I attach a copy of the Executive Summary of the KPMG review (LTCI00071743 p. 5-27) as Exhibit L.

113. The project included a two-part jurisdictional review, including a literature scan of 23 jurisdictions, and then a selection of 7 jurisdictions received a more detailed examination. This review helped inform the development of death investigation models, leadership structures, inquest and organizational models for potential consideration in Ontario.

114. The report proposed for further consideration, examination and discussion a model wherein pathologists would become certified as coroners and be able to certify the identity, cause and manner of death in cases referred to them by physician coroners for post mortems. Those involved in the report (an Executive Steering Committee and Project Sponsors) agreed that a medical examiner system was neither warranted in Ontario at that time, nor would it be simple to transition to such a system given the legislative, regulatory and human resources challenges required.

115. One result of this review (and a subsequent recommendation from the Death Investigation Oversight Council), was that the Minister of Community Safety and Correctional Services directed that a pilot project be undertaken such that pathologists be appointed coroners for cases of homicide and criminally suspicious deaths. In July 2014, the OFPS/OCC implemented forensic pathologist-coroners at the PFPU for deaths that occurred in Toronto involving Toronto Police Services, and in 2016 the program was expanded to the Regional FPU in Ottawa. I and Dr Huyer decided to discontinue the pilot this year for operational reasons, including an increased case load for forensic pathologists under the program, and challenges implementing the protocol within the death investigations system.

#### **No OFPS Involvement Contemporaneous to the Offences**

116. There was no involvement of the OFPS, or pathologists more generally, at the time of the deaths of Ms. Wettlaufer's victims. I understand that local coroners were only contacted regarding two of Ms. Wettlaufer's murder victims (Mr. Silcox and Ms. Pickering) and one of her attempted murder victims (Mr. Hedges) later when he died. Only two of these cases were investigated by local coroners (Mr. Silcox and Mr. Hedges). No medicolegal autopsies were requested by the investigating coroners at the time of these deaths.

117. Only two of Ms. Wettlaufer's victims could be exhumed for post mortems: Arpad Horvath and Helen Matheson. The remainder of Ms. Wettlaufer's victims were cremated, or remain alive.

### **My Involvement in Retrospective Death Investigations**

118. I was involved throughout the OCC/OFPS's retrospective death investigations of Ms. Wettlaufer's victims. There were three distinct stages to my involvement:

- (a) preparing a preliminary report on the cause of death of the eight patients Ms. Wettlaufer was later convicted of murdering, based on my review of the relevant medical records in December 2016;
- (b) conducting autopsies on the bodies of Mr. Horvath and Ms. Matheson in January 2017, and completing the corresponding Reports in May 2017; and
- (c) undertaking a review of the medical records of the six non-murder victims (described as the "clinical cases") and preparing a report further to that review in May 2017.

119. Each of these steps is reviewed below.

#### ***(a) Initial Involvement and Report***

120. I first became aware of Ms. Wettlaufer's offences in or around November 2016, when I attended a meeting with the Assistant Crown Attorney (the "Crown") who was leading the criminal prosecution of Ms. Wettlaufer, as well as members of the Ontario Provincial Police ("OPP") and Dr. Dirk Huyer, the Chief Coroner. I was advised that Ms. Wettlaufer had confessed to murdering several of her patients through the administration of insulin injections. I was asked to undertake a medical review of the eight cases for which Ms. Wettlaufer had confessed to murder and to determine if exhumations were warranted.

121. On November 16, 2016, I met with the Crown and OPP officers and gave a presentation of my preliminary review of the eight (then) alleged murder cases. A copy of my PowerPoint presentation from that meeting (LTCI00065302) is attached as Exhibit M.<sup>3</sup>

122. My preliminary conclusions, based upon the medical records received and reviewed at that point in time, were:

- (a) in none of the eight cases could the cause of death be medically and scientifically proven due to the administration of insulin because post mortems and insulin testing were not conducted in any case;
- (b) Ms. Pickering died of the effects of hypoglycemia, which corroborated Ms. Wettlaufer's statement;
- (c) Mr. Horvath died of natural causes and insulin did not play a role in his death. I note that this initial conclusion changed once I was provided with and reviewed the hospital chart. The original LTC home chart I reviewed stated that Mr. Horvath had a cerebral hemorrhage (which could not be hypoglycemic), whereas the hospital records confirmed that in fact he may have had a cerebral infarct. The possibility of hypoglycemia could not be excluded with that clinical presentation;
- (d) in the remaining six cases, I was medically undecided about the role of insulin in contributing to death because the medical data was not complete enough to support or refute Ms. Wettlaufer's statement; and

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<sup>3</sup> PowerPoint presentation by Dr. Pollanen entitled "The Wettlaufer [sic] case: Preliminary review & meeting with Crown and OPP on November 16, 2016", Exhibit 7, OCC/OFPS Overview Report "(OCC/OFPS OR)" Tab B: Source Documents for Specific Chronology ("Tab B"), Tab 19 (LTCI00065302).

- (e) Ms. Matheson's body should be exhumed for autopsy to determine if hypoglycemic encephalopathy was present and to determine cause of death, if possible. Upon review of the additional medical records pertaining to Mr. Horvath, my opinion became that his body should also be exhumed for autopsy.

123. On November 17, 2016, the Crown requested my written opinion on whether the disinterment of the remains of Mr. Horvath and/or Ms. Matheson may afford evidence with respect to the commission of murder or attempted murder.

124. In a letter also dated November 17, 2017 (LTCI00065283 – attached as Exhibit N),<sup>4</sup> I confirmed my view that substantial medical/scientific evidence of murder or attempted murder could be gained if those bodies were exhumed and autopsies conducted. At that time, I hoped that the embalming would be of a high enough quality that the post mortems might reveal clinically significant information – namely, evidence of hypoglycemic brain damage.

125. I subsequently prepared an initial report dated December 1, 2016, entitled “Initial Report of the Medical Investigation Into Eight Elderly People Who Died Under the Care of Elizabeth Wettlauffer” (LTCI00065278 – attached as Exhibit O)<sup>5</sup> based on my review of certain of the medical records of the eight murder victims (as outlined at page 6 of my report).

126. My medicolegal analysis of the eight cases is set out in the report, and summarized in Table 2, page 12 of my report, as replicated below:

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<sup>4</sup> Letter from Dr. Pollanen to Mr. Kelly re: opinion on disinterment dated November 17, 2017, Exhibit 7, OCC/OFPS OR, Tab B, Tab 21(LTCI00065283).

<sup>5</sup> Initial Report of the Medical Investigation into Eight Elderly People Who Died under the Care of Elizabeth Wettlauffer by Dr. Michael Pollanen dated December 1, 2016, Exhibit 7, OCC/OFPS OR, Tab B, Tab 25 (LTCI00065278).

Name	Hypoglycemia	Analysis
Pickering	Severe hypoglycemia proceeding coma	The underlying cause of death is hypoglycemic brain damage. The medical evidence corroborates Wetlauffer's claims to have administered "80 units of long-acting insulin" to "cause her some brain damage" and that "she became comatose and died approximately 5 days later"
Young Granat Millard	Unknown	Each case has nonspecific signs/symptoms of hypoglycemia. But to determine the reliability of inferring hypoglycemia from this evidence, we need to know the base rate of the signs/symptoms
Silcox Zurawinski	Unknown	No clear medical evidence of hypoglycemia; death could have been unrelated to insulin administration
Horvath	Hypoglycemia	Exhumation and autopsy is required to determine in [sic] hypoglycemic encephalopathy is present
Matheson	Unknown	

**(b) Post Mortems and My Post Mortem Reports**

127. On January 26, 2017, I performed an autopsy of the bodies of Mr. Horvath and Ms. Matheson. I emailed Dr. Rick Mann, the Regional Supervising Coroner, my preliminary views from the autopsies (re: Mr. Horvath, LTCI00065186 and re: Ms. Matheson LTCI00065210 – attached as Exhibits P and Q, respectively).<sup>6</sup> In both cases, I noted that the cause of death was pending.

<sup>6</sup> Exhibit 7, OCC/OFPS OR, Tab B, Tab 30: *Email from Dr. Pollanen to Dr. Mann re: Arpad Horvath autopsy dated January 26, 2017 (LTCI00065186); Email from Dr. Pollanen to Dr. Mann re: Helen Matheson autopsy dated January 26, 2017 (LTCI00065210).*

128. I completed post mortem Reports dated May 8, 2017 in respect of Mr. Horvath (LTCI00065252 p.1-10, attached as Exhibit R)<sup>7</sup> and Ms. Matheson (LTCI00065249 p. 1-8, attached as Exhibit S)<sup>8</sup>.

129. Regarding Mr. Horvath, his body was moderately well-preserved by embalming. The autopsy consisted of a detailed examination of the body, macroscopically and microscopically. The heart and brain were examined by a cardiac pathologist and neuropathologist, respectively. Toxicology testing could not be conducted due to the embalming. My medicolegal analysis of Mr. Horvath's case was:

- (a) The sequence of events leading to death started with hypoglycemia. Death occurred 7 days later, following coma;
- (b) The hypoglycemia could have caused coma and could corroborate the putative administration of insulin. Another possible explanation is hypoglycemia from oral hypoglycemic medication;
- (c) Hypoglycemic encephalopathy was a possible cause of death. However, the neuropathologic evidence was only suggestive, not definitive;
- (d) Overall, based on the limitation of the autopsy and the lack of insulin testing at the time of the initial hypoglycemic episode, the cause of death was undetermined.

130. Regarding Ms. Matheson, her body was too decomposed to determine cause of death. The autopsy similarly consisted of a detailed examination of the body, and the brain and heart were

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<sup>7</sup> *Postmortem Examination Report by Dr. Pollanen re: Arpad Horvath dated May 8, 2017, Exhibit 7, OCC/OFPS OR, Tab B, Tab 40 (LTCI00065252 p.1-10).*

<sup>8</sup> *Postmortem Examination Report by Dr. Pollanen re: Helen Matheson dated May 8, 2017, Exhibit 7, OCC/OFPS OR, Tab B, Tab 40 (LTCI00065249 p. 1-8).*

examined by a cardiac pathologist and neuropathologist, respectively. My opinion was that death could be due to endometrial carcinoma and Alzheimer's disease, and I noted that the body was too decomposed to determine if any findings were present that could corroborate the history of non-therapeutic insulin administration. I assigned the cause of death as undetermined.

131. In both of the cases I could not make a definite cause of death based on scientific principles. I was very careful in my role as the pathologist in the retrospective death investigations and did not rely on the confession evidence (i.e. video or transcripts of the interview with the OPP). I approached the cases from first principles to determine what could be established based on scientific principles.

132. As outlined above, in Ontario's death investigation system, the coroner is not bound by what the pathologist or forensic pathologist assigned as the cause of death, and can (and did in this case) take into account additional information. My understanding is that Dr. Huyer reviewed my post mortem Reports (for Mr. Horvath and Ms. Matheson), along with the confession and Agreed Statement of Fact arising from the criminal proceedings, and arrived at a final determination of medical cause of death as hypoglycemia, and the manner of death as homicide, for the eight murder victims.

*(c) My Review of the Clinical Cases*

133. I was also asked by the Crown to review and comment on the medical records of the six additional cases, namely the cases of Ms. Wettlaufer's victims of attempted murder and aggravated

assault. I completed a report dated May 25, 2017, entitled “R v Elizabeth Wetlaufer [sic] (EW) – the ‘clinical’ cases”” (LTCI00065257 and LTCI00065258, together attached as Exhibit T)<sup>9</sup>.

134. In undertaking this review, I was very cautious in only identifying what I could definitely determine to be hypoglycemic episodes based on the medical records.

135. In my report, I noted that there was no definitive medical evidence that hypoglycemic episodes were caused by the administration of insulin in any of the patients, because no insulin testing was done at the relevant time. Thus, we could not assess if there was a forensic medical link between Ms. Wettlaufer’s claims and any episode of hypoglycemia.

#### **OFPS Initiatives Since Discovery of the Offences**

136. I do not believe that a systemic solution can be found which will ensure that the OFPS is always able to detect a serial killer concealing murders with a chemical weapon such as insulin – which no one is looking for and which can barely be detected in the best of circumstances.

137. In my view, a better solution would be to strengthen the “front end”, such as prevention, identification/detection of irregularities at the LTC homes, and other indicators that something is going awry (as opposed to the “back end”, once the OFPS has been involved in a death).

138. Since Ms. Wettlaufer’s offences became known, to my knowledge, there has not been a consideration of making insulin testing standard by pathologists conducting medicolegal post mortems in Ontario. However, it has been very much at the front of my mind that the OFPS could do a better job investigating and addressing the deaths of the elderly, in general.

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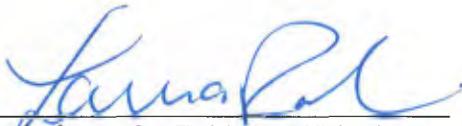
<sup>9</sup> Exhibit 7, OCC/OFPS OR, Tab B, Tab 41: *Report by Dr. Pollanen entitled: “R v Elizabeth Wetlaufer [sic] (EW) – the ‘clinical’ cases” dated May 25, 2017 (LTCI00065257); Enclosure to Dr. Pollanen’s report dated May 25, 2017 (LTCI00065258).*

139. One initiative we are considering is developing a specific protocol for the medicolegal autopsies conducted in the elderly population, like the protocol which exists for deaths of persons under five years old. This protocol needs to be developed, though I anticipate it would include things such as:

- (a) ensuring that the OCC/OFPS have more rather than less historical and circumstantial information about the death;
- (b) obtaining photographs of the body at the scene and at post mortem;
- (c) standardized laboratory testing; and
- (d) standardized radiologic examination.

140. I have also commenced a review of historical secret homicides in Ontario in the past 30 years, in an attempt to ascertain relevant patterns or themes that may assist the Inquiry, and the death investigation system. This review is ongoing.

AFFIRMED BEFORE ME at the City of Toronto,  
in the Province of Ontario, on July 6, 2018

  
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Commissioner for Taking Affidavits  
LAURA ROBINSON

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Dr. Michael S. Pollanen

This is Exhibit "A" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018



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*Commissioner for Taking Affidavits (or as may be)*

Pollanen  
November 14, 2017

**CURRICULUM VITAE**  
**Abbreviated**

*Michael S. Pollanen*

Ontario Forensic Pathology Service  
Forensic Science and Coroner's Complex  
25 Morton Shulman Ave  
Toronto, Ontario, Canada  
M3M 0B1  
Michael.Pollanen@ontario.ca

**EDUCATION**

**Degrees**

BSc, Biology, University of Guelph, 1992

PhD, Pathology, University of Toronto, 1995

MD, University of Toronto, 1999

**Certifications**

FRCPC, Anatomic Pathology, University of Toronto residency program, 2003

DMJ (Path), Forensic Pathology, Society of Apothecaries, 2002

**EMPLOYMENT AND POSITIONS**

**Current**

Chief Forensic Pathologist (founding) of the Ontario Forensic Pathology Service (and Deputy Chief Coroner from 2015), 2009-present

Professor, Department of Laboratory Medicine and Pathobiology, University of Toronto, 2014-present

Vice-Chair (innovation), Department of Laboratory Medicine and Pathobiology, University of Toronto, 2017-present

*Pollanen*

*November 14, 2017*

Director, Forensic Pathology Fellowship Program (international), University of Toronto, 2006-present

Associate Member of Graduate Studies, University of Toronto, 2006-present

### **Past**

Forensic Pathologist, Provincial Forensic Pathology Unit (Chief Forensic Pathologist of Unit from 2006), 2003-2009

Associate Professor, Department of Laboratory Medicine and Pathobiology, University of Toronto, 2003-2014

Program Director (founding), Forensic Pathology Residency, University of Toronto, 2008-2017

Director (founding), Centre for Forensic Science and Medicine, University of Toronto, 2008-2017 (forensic pathology now fully-integrated into Department of Laboratory Medicine and Pathobiology)

Forensic Pathologist, Department of Paediatric Laboratory Medicine, SickKids, 2004-2006

Adjunct Professor, Faculty of Law, University of Toronto, 2003-2006, 2008-2012

Resident in Anatomical Pathology, University of Toronto, with training in the Office of Chief Medical Examiner, Washington, D.C. 1999-2003

### **International consultancy**

Algeria, Department of Foreign Affairs, Canada

Bermuda, Bermuda Police Service

Cambodia, Coalition for International Justice

Chile, Service Medicolegal

East Timor, United Nations

Egypt, International Association of Forensic Science

Haiti, INTERPOL

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International Criminal Court, The Hague

Iraq, International Committee for the Red Cross

Jamaica, United Nations Development Program

Kazakhstan, Department of Foreign Affairs, Canada

Palestine, United Nations Office on Drugs and Crime

Thailand, Department of Foreign Affairs, Canada

Uzbekistan, US Department of State

## **AWARDS AND HONOURS**

### **Awards (selected)**

Vice-Chancellor's award, University of the West Indies, 2018.

Richard G. Hegele Award in Research and Innovation, Department of Laboratory Medicine and Pathobiology, 2017

John B. Walter Prize for Course Design and Development, Department of Laboratory Medicine and Pathobiology, 2016

Distinguished Pathologist's Award, Ontario Association of Pathologists, 2015

Excellence in Postgraduate Medical Education award, University of Toronto, 2015

Interprofessional Team Continuing Education Award, University of Toronto, 2014

Presidential Medal, International Academy of Legal Medicine, 2013

Award for Young Leaders (early career physician), Canadian Medical Association, 2006

Danny Ghazarian Resident Teaching Award, Department of Laboratory Medicine and Pathobiology, 2003

Morrison Finlayson Award, Canadian Association of Neuropathologists, 1999

William J. Deadman Prize in Forensic Medicine, Canadian Society of Forensic Science, 1999.

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Gold Medal of the Governor General of Canada, Government of Canada/University of Toronto, 1995

Studentship, Medical Research Council of Canada, 1993-1995

Morrison Finlayson Award, Canadian Association of Neuropathologists, 1992.

Morrison Finlayson Award, Canadian Association of Neuropathologists, 1990.

Honorable Mention for Mary Tom Award, Canadian Association of Neuropathologists, 1989.

### **Honours**

President, International Association of Forensic Sciences, 2015-2017.

Honorary member, College of Forensic Pathologist, Sri Lanka, 2007

Founder, Forensic Pathology, Royal College of Physicians and Surgeons of Canada, 2010

FRCPath, published works, Royal College of Pathologists, 2001

### **EDITORIAL CONTRIBUTIONS**

#### **Editorial boards**

Forensic Science, Medicine and Pathology

Forensic Science International

Egyptian Journal of Forensic Science

Medicine, Science and Law

Indian Academy of Forensic Medicine

Journal of Forensic Science and Medicine

#### **Ad hoc reviewer**

American Journal of Pathology

Brain Research

Canadian Medical Association Journal

Cardiovascular Pathology

CRC Press (forensic series)

Journal of Clinical Forensic Medicine

Journal of Clinical Pathology

Journal of Neurochemistry

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Journal of Neuropathology and Experimental Neurology  
Journal of Neuroscience Methods  
Forensic Science, Medicine and Pathology  
Forensic Science International  
Egyptian Journal of Forensic Science  
Forensic Science Review (Guest Editor)  
Academic Forensic Pathology (Guest Editor)  
Veterinary Pathology (Guest Editor)

## **COMMITTEES**

### **Current**

Senior Management Committee (and audit subcommittee), Ministry of Community Safety and Correctional Services, 2009-present

Death Investigation Oversight Council, 2009-present

Forensic Pathology Advisory Committee (chair), Ontario Forensic Pathology Service, 2009-present

Appointments and Promotion Committee, Department of Laboratory Medicine and Pathobiology, University of Toronto, 2011-present

Fellowship Committee, Department of Laboratory Medicine and Pathobiology, University of Toronto, 2011-present

Forensic Advisory Board, International Committee for the Red Cross, 2010-present

### **Past**

Founding Chair, Forensic Pathology Section, Canadian Association of Pathologists, 2007-2012

Scientific Advisory Board, Office of the Prosecutor, International Criminal Court, 2015-2017

Pathology Services Expert Panel (Report: Commitment to Quality), Ministry of Health and Long-term Care, 2011-2012.

## **FUNDRAISING**

Raymond Chang Foundation, Fundraising for forensic Pathology fellowship, \$2M endowment, 2012

Raymond Chang Foundation, Fundraising for forensic Pathology fellowship, \$2.25 M (\$1M endowment and \$1.25 M catalyst fund), 2017

## **PUBLICATIONS**

### **Journal articles**

1. **Pollanen MS.** The Pathology of Torture. 2017, Forensic Science International, pending publication. **Sole Author.**
2. Gruspier K, **Pollanen MS.** Forensic Legacy of the Khmer Rouge: The Cambodian Genocide. Acad Forensic Pathol. 2017 Aug; 7(3):415-433. **Coauthor or Collaborator**
3. Corder S, **Pollanen MS.** The West Kingston/Tivoli Gardens Incursion in Kingston, Jamaica. Acad Forensic Pathol. 2017 Aug; 7(3):390-414. **Coauthor or Collaborator**
4. **Pollanen MS.** The Dead Detainee: The Autopsy in Cases of Torture. Acad Forensic Pathol. 2017 Aug; 7(3):340-352. **Sole Author.**
5. Herath JC, **Pollanen MS.** Clinical Examination and Reporting of a Victim of Torture. Acad Forensic Pathol. 2017 Aug; 7(3):330-339. **Coauthor or Collaborator**
6. Peyron PA, **Pollanen MS.** Fatal acute retropharyngeal hemorrhage in neurofibromatosis type 1. Forensic Sci Med Pathol. 2017 Oct 28. doi: 10.1007/s12024-017-9928-8. [Epub ahead of print] PubMed PMID: 29080953. **Senior Responsible Author**
7. Tingey P, Krizova A, Little D, Ross J, Forse C, **Pollanen MS.** Intra-Abdominal Hemorrhage Complicating Electrothermal Arterial Injury During Pelvic Surgery: A Case Report. Am J Forensic Med Pathol. 2017 Oct 24. doi: 10.1097/PAF.0000000000000354. [Epub ahead of print] PubMed PMID: 29068812. **Senior Responsible Author**
8. Seulieman YA, Rasool M, Zaid AA, Ali-Hameed A, Jameel A, Martinez S, **Pollanen MS.** Forensic Pathology and Newborn Screening for Inborn Errors of Metabolism: Implications for the Middle East. Arab Journal of Forensic Science and Medicine. Vol 1. Issue 3. 438-442, 2016. **Senior Responsible Author**
9. Liu NX, **Pollanen MS.** A mimic of sexually-motivated homicide: insect stings and heat exhaustion in a forest. Forensic Sci Med Pathol. 2017. **Senior Responsible Author**
10. Bellis M, Herath J, **Pollanen MS.** Sudden Death Due to Acute Epiglottitis in Adults: A

- Retrospective Review of 11 Postmortem Cases. *Am J Forensic Med Pathol*. 2016 Dec;37(4):275-278. **Senior Responsible Author**
11. **Pollanen MS**. Pitfalls and artefacts in the neck at autopsy. *Academic Forensic Pathology*. 2016 Mar; 6(1):45-62. **Sole Author**.
  12. **Pollanen MS**. The rise of forensic pathology in human medicine – lessons for veterinary pathology. *Vet Pathol*. 2016. Sep;53(5):878-9. **Sole Author**.
  13. **Pollanen MS**. The modern medical autopsy. *Canadian Journal of Pathology*. 2016. **Sole Author**.
  14. Rajapaksha WRAS, **Pollanen MS**. Liver microembolism to lung as a vital reaction: a case report of a decomposed body in a homicide case. *Canadian Journal of Pathology*. 2016. In press. **Senior Responsible Author**
  15. **Pollanen MS**. Fatal rhabdomyolysis after torture by reverse hanging. *Forensic Sci Med Pathol*. 2016 Jun;12(2):170-3. doi: 10.1007/s12024-016-9752-6. Epub 2016 Feb 18. PubMed PMID: 26888609. **Principal Author**
  16. **Pollanen MS**. On the strength of evidence in forensic pathology. *Forensic Sci Med Pathol*. 2016 Mar;12(1):95-7. doi: 10.1007/s12024-015-9740-2. Epub 2016 Jan 12. PubMed PMID: 26759135. **Principal Author**
  17. Rajagopalan A, **Pollanen MS**. Sudden death during struggle in the setting of heterozygosity for a mutation in calsequestrin 2. *Forensic Sci Med Pathol*. 2016 Mar;12(1):86-9. doi: 10.1007/s12024-015-9733-1. Epub 2015 Dec 15. PubMed PMID:26671417. **Senior Responsible Author**.
  18. Kitulwatte ID, **Pollanen MS**. A Comparative Study of Coronary Atherosclerosis in Young and Old. *Am J Forensic Med Pathol*. 2015 Dec;36(4):323-6. doi:10.1097/PAF.0000000000000203. PubMed PMID: 26390307. **Senior Responsible Author**.
  19. Krizova A, Gardner T, Little DL, Arcieri-Piersanti V, **Pollanen MS**. Fatal laryngeal angioedema: a case report and a workup of angioedema in a forensic setting. *Forensic Sci Med Pathol*. 2015 Dec;11(4):558-63. doi:10.1007/s12024-015-9701-9. Epub 2015 Aug 5. PubMed PMID: 26242774. **Senior Responsible Author**.
  20. Kitulwatte ID, Kim PJ, **Pollanen MS**. Acute hemorrhagic leukoencephalomyelitis in a man with viral myocarditis. *Forensic Sci Med Pathol*. 2015 Sep;11(3):416-20. doi: 10.1007/s12024-015-9692-6. Epub 2015 Jul 8. PubMed PMID: 26148811. **Senior Responsible Author**.

21. Krizova A, Little D, **Pollanen MS**. Postmortem CT, gross and microscopic images of hemorrhage along the pulmonary artery sheath due to type A aortic dissection. *Forensic Sci Med Pathol*. 2015 Sep;11(3):455-9. doi: 10.1007/s12024-015-9686-4. Epub 2015 Jun 24. PubMed PMID: 26105786. **Senior Responsible Author**.
22. Kepron C, **Pollanen MS**. Rickets or abuse? A histologic comparison of rickets and child abuse-related fractures. *Forensic Sci Med Pathol*. 2015 Mar;11(1):78-87. doi: 10.1007/s12024-014-9639-3. Epub 2015 Jan 4. PubMed PMID: 25557084. **Senior Responsible Author**.
23. Leditschke J, Rose T, Cordner S, Woodford N, **Pollanen M**. The development of a protocol for postmortem management of Ebola virus disease in the setting of developed countries. *Forensic Sci Med Pathol*. 2015 Jun;11(2):262-7. doi: 10.1007/s12024-014-9652-6. Epub 2015 Jan 24. **Coauthor or Collaborator**
24. **Pollanen MS**, Woodford N. Virtual autopsy: time for a clinical trial. *Forensic Sci Med Pathol*. 2013. Sep;9(3):427-8. doi: 10.1007/s12024-013-9408-8. Epub 2013 Feb 24. **Co-Principal Author**.
25. Martinez S, Miranda E, Kim P, **Pollanen MS**. Giant cell myocarditis associated with amoxicillin hypersensitivity reaction. *Forensic Sci Med Pathol*. 2013 Sep;9(3):403-6.
26. Kodikara S, Paranitharan P, **Pollanen MS**. The role of the Armani-Ebstein lesion, hepatic steatosis, biochemical analysis and second generation anti-psychotic drugs in fatal diabetic ketoacidosis. *J Forensic Legal Medicine*. Feb;20(2):108-11.
27. Kodikara S, **Pollanen MS**. Sudden unexpected death in epilepsy: A retrospective analysis of 24 adult cases. *Forensic science, medicine and pathology*. 2012 Mar;8(1):19-22 Epub 2011 Jul 29. **Senior Responsible Author**.
28. Parai, JL, Kodikara S Milroy CM, **Pollanen MS**. Armani-Ebstein lesion and alcoholic ketoacidosis. *Forensic Sci Med Pathol*. 2012 Mar;8(1):19-22. Epub 2011 Jul 31. **Senior Responsible Author**.
29. Kodikara S, **Pollanen MS**. Fatal pediatric head injury due to toppled television: Does the injury pattern overlap with abusive head trauma? *Legal Medicine*. 2012 July; 14(4):197-200. **Senior Responsible Author**.
30. Kodikara S Cunningham K, **Pollanen MS**. Excited delirium syndrome?: Is it a cause of death? *Leg Med* doi.org/10.1016/ Legal Medicine 2012.04.003. **Senior Responsible Author**.

31. Salvatori M, Kodikara S, **Pollanen M**. Fatal subarachnoid hemorrhage following traumatic rupture of the internal carotid artery. *Legal Medicine*. Nov;14(6):328-30. doi: 10.1016/j.legalmed.2012.06.004. Epub 2012 Jul 21. **Senior Responsible Author**.
32. **Pollanen MS**. Forensic pathology and the miscarriage of justice. *Forensic Sci Med Pathol*. 2012. 2012 Sep;8(3):285-9. doi: 10.1007/s12024-011-9299-5. Epub 2011 Nov 25. **Principal Author**.
33. Kim PJ, **Pollanen MS**. Osmium impregnation detection of pulmonary intravascular fat in sudden death: A study of 65 cases. *J Forensic Leg Med*. 2012. 2012 May;19(4):201-6. doi: 10.1016/j.jflm.2011.12.020. Epub 2012 Feb 3. **Senior Responsible Author**.
34. Kodikara S, **Pollanen MS**. Sudden death due to hemoperitoneum following rupture of cirrhosis-related mesenteric varices. *Egyptian Journal of Forensic Sciences*. 2011; 1: 77-79. **Senior Responsible Author**.
35. Pickup MJ, **Pollanen MS**. Traumatic subarachnoid hemorrhage and the COL3A1 gene: emergence of a potential causal link. *Forensic Sci Med Pathol*. 2011 Jun;7(2):192-7. Epub 2010 Nov 18. **Senior Responsible Author**.
36. **Pollanen MS**. Subdural hemorrhage in infancy: keep an open mind. *Forensic Sci Med Pathol*. 2011 Apr 11. [Epub ahead of print]. **Principal Author**.
37. **Pollanen MS**. Histology in forensic practice. *Forensic Sci Med Pathol*. 2011 Jun 15. [Epub ahead of print]. **Principal Author**.
38. Kepron C, Cusimano M, **Pollanen MS**. Fatal hemorrhage following trans--sphenoidal resection of a pituitary adenoma: a case report and review of the literature. *Forensic Sci Med Pathol*. 2010 Dec;6(4):282-7. Epub 2010 Mar 21. Review. **Senior Responsible Author**.
39. Kitulwatte ID, Kim PJ, **Pollanen MS**. Sudden death related myocarditis: a study of 56 cases. *Forensic Sci Med Pathol*. 2010 Mar;6(1):13-9. Epub 2009 Nov 29. **Senior Responsible Author**.
40. Tanguay J, **Pollanen M**. Sudden death by laryngeal polyp: a case report and review of the literature. *Forensic Science, Medicine and Pathology*. 2009;5(1):17-21. **Senior Responsible Author**.
41. **Pollanen MS**, Perera C, Clutterbuck. Hemorrhagic lividity of the neck: Controlled induction of postmortem hypostatic hemorrhages. *American Journal of Forensic Medicine and Pathology*. 2009 Dec;30(4):322-6. **Principal Author**.

42. Paranitharan P, **Pollanen MS**. The interaction of injury and disease in the elderly: a case report of fatal elder abuse. *Journal of Forensic and Legal Medicine*. 2009 Aug;16(6):346-9. Epub 2009 Jan 29. **Senior Responsible Author**.
43. Dickson BC, **Pollanen MS**. Fatal thromboembolic disease: a risk in physically restrained psychiatric patients. *J Forensic Leg Med*. 2009 Jul;16(5):284-6. Epub 2009 Feb 7. **Senior Responsible Author**.
44. Kitulwatte I, **Pollanen MS**. Electrical injury of the neck and cardiac air embolism: a novel mechanism of death. *Forensic Sci Med Pathol*. 2009;5(1):32-5. Epub 2008 Sep 20. **Senior Responsible Author**.
45. Kepron C, Somers GR, **Pollanen MS**. Sickle cell trait mimicking multiple inflicted injuries in a 5-year-old boy. *J Forensic Sci*. 2009 Sep;54(5):1141-5. Epub 2009 Jun 29. **Senior Responsible Author**.
46. Paranitharan P, Parai JL, **Pollanen MS**. Pseudo-gunshot wound injury from perforating rib fracture: a cautionary case report. *Forensic Science, Medicine, and Pathology*. 2008;4(2):113-5. Epub 2007 Sep 9. **Senior Responsible Author**.
47. Perera C, **Pollanen MS**. Sudden death from sickle cell crisis during law-enforcement restraint. *Journal of Clinical Forensic Medicine*. 2007, 14, 297-300.
48. **Pollanen MS**. Deciding the cause of death after autopsy – revisited. *Journal of Clinical Forensic Medicine*. 2005, 12, 113-121.
49. Srigley JA, **Pollanen MS**. Sudden death from clinically undiagnosed pulmonary hypertension. *Journal of Clinical Forensic Medicine*. 2005, 12, 264-267.
50. **Pollanen MS**. Alleged lethal sorcery in East Timor. *Forensic Science International*. 2004, 139, 17-19.
51. **Pollanen MS**. A Variant of Incaprettamento (Ritual Ligature Strangulation) in East Timor. *American Journal of Forensic Medicine and Science*. 2003, 24, 51-54.
52. Fornazzari L, **Pollanen MS**, Myers V, Wolf A. Solvent abuse toluene leukoencephalopathy: Case report. *Journal of Clinical Forensic Medicine*. 2003, 10, 93-95.
53. **Pollanen MS**, Smith CR, Chaisson DA, Cairns JT, Young J. Fatal child abuse-maltreatment syndrome: A retrospective study in Ontario, Canada, 1990-1995. *Forensic Science International*. 2002, 6, 101-4.

54. **Pollanen MS.** Torture by excision and ingestion of ear helix. *Journal of Clinical Forensic Medicine.* 2002, 9, 184-184.
55. **Pollanen MS.** Subtle Fatal Manual Neck Compression. *Medicine, Science, and the Law.* 41, 135-140, 2001.
56. Borio L, Frank D, Mani V, Chiriboga C, **Pollanen M**, Ripple M, Ali S, DiAngelo C, Lee J, Arden J, Titus J, Fowler D, O'Toole T, Masur H, Bartlett J, Inglesby T. Death due to bioterrorism-related inhalational anthrax: Report of 2 patients. *Journal of the American Medical Association.* 2001, 286(20), 2554-9.
57. **Pollanen MS.** A Triad of Laryngeal Hemorrhages in Strangulation: A Report of Eight Cases. *Journal of Forensic Science.* 45, 614-618, 2000.
58. **Pollanen MS**, Bergeron C. Modeling of a Periodic Instability in Paired Helical Filaments Reveals an Axial Repeat. *Acta Neuropathologica.* 99, 534-538, 2000.
59. Gruspier KL, Pollanen KG. Limbs Found in Water: Investigation using Anthropological Analysis and the Diatom Test. *Forensic Science International.* 112, 1-9, 2000.
60. **Pollanen MS.** Diatoms and homicide. *Forensic Science International.* 91, 29-34, 1998.
61. **Pollanen MS**, McAuliffe DN. Intracartilaginous laryngeal hemorrhages and strangulation. *Forensic Science International.* 92, 13-20, 1998.
62. **Pollanen MS**, Chiasson DA, Cairns J, Young J. Unexpected death related to restraint for excited delirium: a retrospective study of deaths in police custody and in the community. *Canadian Medical Association Journal.* 158, 1603-1607, 1998.
63. **Pollanen MS**, Markiewicz P, Goh MC. Paired helical filaments are twisted ribbons composed of two parallel and aligned components: Image reconstruction and modeling of filament structure using atomic force microscopy. *Journal of Neuropathology and Experimental Neurology.* 56, 79-85, 1997.
64. **Pollanen MS**, Cheung C, Chiasson DA. The diagnostic value of the diatom test for drowning. I. A retrospective study of 771 cases of drowning in Ontario, Canada. *Journal of Forensic Science.* 42, 281-285, 1997.
65. **Pollanen MS.** The diagnostic value of the diatom test for drowning. II. A comparison of diatoms recovered from bone marrow and drowning medium. *Journal of Forensic Science.* 42, 286-290, 1997.

66. Bergeron C, **Pollanen MS**, Weyer L, Black SE, Lang AE. Unusual clinical presentation of cortico-basal ganglionic degeneration. *Annals of Neurology*. 40, 893-900, 1997.
67. **Pollanen MS**, Ubelaker DH. Forensic Significance of the Polymorphism in Hyoid Bone Shape. *Journal of Forensic Sciences*. 42, 890-892, 1997.
68. Bergeron C, **Pollanen MS**, Weyer L, Lang AE. Cortical Degeneration in Progressive Supranuclear Palsy. A comparison with cortical-basal ganglionic degeneration. *Journal of Neuropathology & Experimental Neurology*. 56, 726-734, 1997.
69. **Pollanen MS**, Chiasson DA. The shape of hyoid bones in strangulation: Comparison of fractured and unfractured hyoids from victims of strangulation. *Journal of Forensic Sciences*. 41, 110-113, 1996.
70. Bergeron C, Petrunka C, Weyer L, **Pollanen MS**. Altered neurofilament expression does not contribute to Lewy body formation. *American Journal of Pathology*. 148, 267-272, 1996.
71. **Pollanen MS**, Deck JHN, Blenkinsop B. Injury of the tunica media in fatal rupture of the vertebral artery. *American Journal of Forensic Medicine and Pathology*. 17, 197-201, 1996.
72. **Pollanen MS**, Chiasson DA, Cairns J, Young JG. Sudden unexpected death in Southeast Asia immigrants to Canada: Recognition of the syndrome in Metropolitan Toronto. *Canadian Medical Association Journal*. 155, 537-540, 1996..
73. **Pollanen MS**. The diatom test for drowning in Ontario. *Journal of the Canadian Society of Forensic Sciences*. 29,205-211, 1996..
74. **Pollanen MS**, Bulger B, Chiasson DA. Location of hyoid fracture in strangulation revealed by xeroradiography. *Journal of Forensic Sciences*. 40, 303-305, 1995.
75. Gale M, **Pollanen MS**, Markiewicz P , Goh MC. Sequential assembly of collagen revealed by atomic force microscopy. *Biophysical Journal*. 68, 2124-2128, 1995.
76. **Pollanen MS**, Markiewicz P, Bergeron C, Goh MC. Alzheimer paired helical filaments: Comparison with the Twisted Ribbon Model. *Acta Neuropathologica*. 90, 194-197,1995.
77. **Pollanen MS**. Rigid deformations of Alzheimer paired helical filaments- A novel substrate for fabricating nanostructures. *Nanotechnology*. 6, 101-103, 1995. **Principal Author**.
78. **Pollanen MS**, Markiewicz P, Bergeron C, Goh MC. Fine structure of abnormal filaments isolated from Alzheimer's diseased brain: An application of atomic force microscopy. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*. 87, 213-216, 1994. **Co-**

79. **Pollanen MS**, Markiewicz P, Bergeron C, Goh MC. Twisted ribbon structure of Alzheimer paired helical filaments revealed by atomic force microscopy. *American Journal of Pathology*. 144, 869-873, 1994. **Co-Principal Author**.
80. **Pollanen MS**, Bergeron C, Weyer L. Comparison of a shared epitope in Lewy body fibril and paired helical filament proteins. *Acta Neuropathologica*. 88,1-6, 1994.
81. Lang AE, Bergeron C, **Pollanen MS**, Ashby P. Parietal Pick's disease mimicking corticobasal ganglionic degeneration. *Neurology*. 44, 1436-1440, 1994.
82. **Pollanen MS**, Markiewicz P, Bergeron C, Goh MC. Mallory body filaments become insoluble after normal assembly into intermediate filaments. *American Journal of Pathology*. 145, 1140-1147, 1994.
83. **Pollanen MS**, Bergeron C, Weyer L. Deposition of detergent-resistant neurofilaments into Lewy body fibrils. *Brain Research*. 603, 121-124, 1993.
84. **Pollanen MS**, Dickson DW, Bergeron C. Pathology and biology of the Lewy body. *Journal of Neuropathology and Experimental Neurology*. 52,183-191,1993.
85. **Pollanen MS**, Bergeron C, Weyer L. Absence of protease-resistant prion protein in dementia with neuronal loss and status spongiosus. *Acta Neuropathologica*. 86, 515-517, 1993.
86. **Pollanen MS**. A mathematical theory of embolism. *Acta Biotheoretica*. 41, 191-197, 1993.
87. **Pollanen MS**. On Balzer's small set solution to Russell's paradox. *Journal of Value Inquiry*. 27, 541, 1993.
88. **Pollanen MS**, Deck JHN, Boutilier L, Davidson G. Lesions of the tunica media in traumatic rupture of the vertebral arteries: Histologic and biochemical studies. *Canadian Journal of Neurological Sciences*. 1992, 19, 53-56.
89. **Pollanen MS**, Bergeron C, Weyer L. Detergent-insoluble cortical Lewy body fibrils share epitopes with neurofilament and tau. *Journal of Neurochemistry*. 1992, 58, 1953-1956.
90. **Pollanen MS**, Deck JHN, Blenkinsop B, Farkas EM. Temporal Bone Fracture with Exsanguination: Pathology and Mechanism. *Canadian Journal of Neurological Sciences*. 1992, 19, 196-200.
91. **Pollanen MS**. Dimensional optimization at different levels of the arterial hierarchy. *Journal of Theoretical Biology*. 159, 267-270, 1992.
92. **Pollanen MS**. Behaviour of Suspended Particles at Bifurcations: Implications for Embolism. *Physics in Medicine and Biology*. 1991, 36, 397-401.

93. **Pollanen MS**. A Hempelian explanatory shift in neuropathology: a study in the history and logic of medicine. *Bulletin on Canadian History of Medicine*. 1991,8, 65-76.
94. Catz-Biro L, Chin W, **Pollanen MS**, Hayes MA, Archer MC. Toxicity of N-nitrosodimethylamine, N-nitrosomethylbenzylamine and 1,2-dimethylhydrazine in isolated rat hepatocytes. *Toxicology and Applied Pharmacology*. 1990, 102, 191-194.
95. **Pollanen MS**, Brody BA. Fetal globoid cell leukodystrophy. *Archives of Pathology and Laboratory Medicine*. 1990, 114, 213-216.
96. **Pollanen MS**, Wollenberg GK, Quinn BA, Hayes MA. Reversible mitochondrial swelling in cultured rat hepatocytes exposed to 1,2-dimethylhydrazine. *Experimental Molecular Pathology*. 1990, 52, 170-178.
97. **Pollanen MS**, Deck JHN. The mechanism of embolic watershed infarction: Experimental Studies. *Canadian Journal of Neurological Sciences*. 1990, 17, 395-398.
98. **Pollanen MS**, Deck JHN. Directed embolization is an alternate explanation for cerebral watershed infarction. *Archives of Pathology and Laboratory Medicine*. 1989, 113,1139-1141.
99. Bergeron C, **Pollanen MS**. Alzheimer's disease with Lewy bodies - One disease or two? *Alzheimer's disease and Associated Disorders*. 1989, 3, 197-204.
100. **Pollanen M**, Butany J, Chiasson D. Leiomyosarcoma of the inferior vena cava. *Archives of Pathology and Laboratory Medicine*. 1987,111,1085-1087.

#### **Book chapters**

1. Kodikara S, **Pollanen, MS**. Legal and Forensic Medicine – a Sri Lankan perspective. *Handbook of Legal and Forensic Medicine*. Springer; Germany. In Press.
2. Kodikara, S. Pollanen MS. Shaken Baby Syndrome. *Handbook of Legal and Forensic Medicine*. Springer; Germany. In Press.
3. Kitulwatte I, **Pollanen MS**. Forensic pathology of explosive injury. In: *Forensic investigation of explosions*. 2nd edition. CRC Press; 2012. p. 741-755.
4. **Pollanen MS**. Asphyxia ('rapid anoxial death'). *Wiley Encyclopedia of Forensic Science*. DOI: 10.1002/9780470061589.fsa035.
5. **Pollanen MS**. Chapter 13: Forensic Osteology of Strangulation. In *Forensic Osteological Analysis – A Book of Case Studies*. Charles Thomas Press, 1999.

6. Kumar R, Bergeron C, **Pollanen MS**, Lang AE. Chapter 14: Cortico-basal Ganglionic Degeneration. In Parkinsons disease and Allied Disorders. Williams & Wilkins, 1998.
7. Goh MC, Markiewicz P, Gale M, **Pollanen MS**, Goh MC. Direct visualization of complex biological structures by atomic force microscopy. In The Interplay of Genetic and Physical Processes in the development of biological form D. Beysens et al (eds.), Springer-Verlag, 1996.
8. Bergeron C, **Pollanen MS**. Chapter 6: Pathogenesis of the Lewy body. In Dementia and Lewy bodies. Cambridge University Press, 1996.
9. **Pollanen MS**, Bergeron C. Quantitative analysis of Lewy bodies in Alzheimer's disease. In: Alzheimer's Disease and Related Disorders. K Iqbal, HN Wisniewski and B Winblad (eds.), Alan R Liss Inc., New York, 1989, pp 485-492.

## TEACHING

### Courses

#### Undergraduate

1. Forensic Pathobiology (LMP415H1), Faculty of Arts and Science, Department of Laboratory Medicine and Pathobiology, Pathobiology specialist program, 2010-2016
2. Forensic Evidence: Science, Medicine and the Law (LAW249), Faculty of Law, 2008-2012
3. Forensic Pathology (FSC401), Faculty of Arts and Science, University of Toronto Mississauga, 2003-2006

#### Continuing professional development workshops

1. Forensic Science and Canadian Public Inquiries conference, Continuing Education, Faculty of Medicine, 2016
2. Advancements in the modern autopsy conference (LMP1335), Continuing Education, Faculty of Medicine, 2015
3. Philosophical aspects of forensic evidence, Continuing Education, Faculty of Medicine, 2013
4. Advancements in the modern autopsy conference (LMP1335), Continuing Education, Faculty of Medicine, 2013
5. Expert forensic evidence in criminal proceedings: preventing wrongful convictions conference, Continuing Education, Faculty of Medicine, 2012
6. Inaugural International Forensic Science Conference in Jamaica, Continuing Education, Faculty of Medicine, 2012

7. Forensic Medicine and Death Investigation conference (LMP1005), Continuing Education, Faculty of Medicine, 2012
8. Forensic expert evidence in criminal proceedings: avoiding wrongful convictions conference, Continuing Education, Faculty of Medicine, 2009

### **Mentorship**

#### **Graduate students**

Patrick Kim (MSc, 2009)

#### **Fellows**

1. Dr. Christopher Ball, 2016-17
2. Dr. Chaaminda Perera, 2016-17
3. Dr. Natasha Richards, 2016-17
4. Dr. Trudy Ann Brown, 2016-17
5. Dr. Andrew Williams, 2016-16
6. Dr. Pierre Peyron, 2016-16
7. Dr. Brett Danielson, 2015-16
8. Dr. Ingo Von Both, 2015-16
9. Dr. Althea Neblett, 2015-16
10. Dr. Kona Williams, 2014-16
11. Dr. Rebekah Jacques, 2014-15
12. Dr. Maggie Bellis, 2013-14
13. Dr. Adriana Krizova, 2013-14
14. Dr. Ashwyn Rajagopalan, 2012-13
15. Dr. Angela Guenther, 2012-13
16. Dr. Soledad Martinez, 2012-13
17. Dr. Mandi Pedican, 2011-12
18. Dr. Liza Boucher, 2011-12
19. Dr. Sarathchandra Kodikara, 2010-12
20. Dr. Michael D'Agostino, 2010-11
21. Dr. Chari Kepron, 2009-10
22. Dr. Michael Pickup, 2009-10
23. Dr. Elena Tugaleva, 2008-09
24. Dr. Jeff Tanguay, 2008-09
25. Dr. Indira Kitulwatte, 2007-09
26. Dr. Kris Cunningham, 2007-08
27. Dr. Paranirubasingam Paranitharan, 2006-07
28. Dr. Channa Perera, 2005-06

## CURRENT RESEARCH

### Nodding Syndrome of northern Uganda

Nodding syndrome (NS) is an endemic neurologic disorder of children in East Africa. NS is characterized by stereotypical head dropping movements, cognitive impairment, impaired growth, and seizures. The age of onset is usually 4-10 years of age. As the condition progresses there is often relentless neurologic deterioration leading to death. Although NS has been documented in the Republic of South Sudan and Tanzania, it is currently a major health problem in the subsistence-farming villages of Northern Uganda. The cause of NS is not known. The current leading theory is that NS may be due to an autoimmune reaction to leiomodin-1 on the basis of a shared epitope in *Onchocera volvulus* and the human brain.

We hypothesize that NS is a novel neurodegenerative disease of childhood that results in seizures, cognitive impairment and Parkinsonism. Our goal is to undertake the clinicopathologic and molecular characterization of NS, to help elucidate mechanism of neurodegeneration to ultimately prevent the disease and treat the affected people.

This research is funded by the Chang Catalyst Fund.

This is Exhibit "B" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018



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*Commissioner for Taking Affidavits (or as may be)*

# Standards of Accreditation for Residency Programs in Forensic Pathology

Effective date: July 1, 2018

## INTRODUCTION

The *Standards of Accreditation for Residency Programs in Forensic Pathology* are a national set of standards maintained by the Royal College, for the evaluation and accreditation of Forensic Pathology residency programs. The standards aim to provide an interpretation of the *General Standards of Accreditation for Residency Programs* as they relate to the accreditation of residency programs in Forensic Pathology, and to ensure these programs adequately prepare residents to meet the death investigation needs of government(s) and society at large upon completion of training.

The standards include requirements applicable to residency programs and learning sites<sup>1</sup> and have been written in alignment with a standards organization framework, which aims to provide clarity of expectations, while maintaining flexibility for innovation.

These standards are intended to be read in conjunction with the *General Standards of Accreditation for Residency Programs*, as well as the discipline-specific documents for Forensic Pathology. In instances where the indicators reflected in the *General Standards of Accreditation for Residency Programs* have been modified within this document to reflect a discipline-specific expectation, the indicator as reflected in this document takes precedence.

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<sup>1</sup> Note: The *General Standards of Accreditation for Institutions with Residency Programs* also include standards applicable to learning sites.

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## STANDARDS

### DOMAIN: PROGRAM ORGANIZATION

The *Program Organization* domain includes standards focused on the structural and functional aspects of the residency program, which support and provide structure to meet the *General Standards of Accreditation for Residency Programs*. The Program Organization domain standards aim to

- ensure the organizational structure and personnel are appropriate to support the residency program, teachers, and residents;
- define the high-level expectations of the program director and residency program committee(s); and
- ensure the residency program and its structure are organized to meet and integrate the requirements for the Education Program; Resources; Learners, Teachers and Administrative Personnel; and Continuous Improvement domains.

**STANDARD 1: There is an appropriate organizational structure, leadership and administrative personnel to effectively support the residency program, teachers and residents.**

Refer to Standard 1 and its various components within the *General Standards of Accreditation for Residency Programs*, in addition to elements, requirements, and indicators detailed below.

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**Element 1.2: There is an effective and functional residency program committee structure to support the program director in planning, organizing, evaluating, and advancing the residency program.**

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**1.2.2:** The residency program committee has a clear mandate to manage and evaluate key functions of the residency program.

**1.2.2.4 [Modified]<sup>2</sup>:** The residency program committee structure includes a competence committee responsible for reviewing and making recommendations regarding residents' readiness for increasing professional responsibility, progress in achieving the national standards of Forensic Pathology, promotion, and transition to independent practice.

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<sup>2</sup> "[Modified]" identifies an indicator from the *General Standards of Accreditation for Residency Programs* that has been modified with discipline-specific content.

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**1.2.2.5:** The frequency of competence committee meetings is sufficient for the committee to fulfil its mandate (at a minimum, at the expected end of each stage).

**STANDARD 2: All aspects of the residency program are collaboratively overseen by the program director and the residency program committee.**

Refer to Standard 2 and its various components within the *General Standards of Accreditation for Residency Programs*.

**DOMAIN: EDUCATION PROGRAM**

The *Education Program* domain includes standards focused on the planning, design, and delivery of the residency program, with the overarching outcome to ensure that the residency program prepares residents to be competent to begin independent practice.

*NOTE: Time-based residency programs are planned and organized around educational objectives linked to required experiences, whereas Competency Based Medical Education (CBME) residency programs are planned and organized around competencies required for practice. The Education Program domain standards in the General Standards of Accreditation for Residency Programs have been written to accommodate both.*

**STANDARD 3: Residents are prepared for independent practice.**

Refer to Standard 3 and its various components within the *General Standards of Accreditation for Residency Programs*, in addition to elements, requirements, and indicators detailed below.

**Element 3.1: The residency program's educational design is based on outcomes-based competencies and/or objectives that prepare residents to meet the needs of the population(s) they will serve in independent practice.**

<b>Requirement(s)</b>	<b>Indicator(s)</b>
<b>3.1.1:</b> Educational competencies and/or objectives are in place to ensure residents	<b>3.1.1.1 [Modified]:</b> The competencies and/or objectives meet the specialty-specific requirements for Forensic Pathology, as outlined in the <i>Forensic Pathology Competencies</i> and the <i>Forensic Pathology Training Experiences</i> .

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progressively meet all required standards for the discipline and address societal needs.

**Element 3.2: The residency program provides educational experiences designed to facilitate residents' attainment of the outcomes-based competencies and/or objectives.**

Requirement(s)	Indicator(s)
<b>3.2.1:</b> The residency program's competencies and/or objectives are used to guide the educational experiences while providing residents with opportunities for increasing professional responsibility at each stage or level of training.	<b>3.2.1.2 [Modified]:</b> The educational experiences meet the specialty-specific requirements for Forensic Pathology, as outlined in the <i>Forensic Pathology Competencies</i> and the <i>Forensic Pathology Training Experiences</i> . <b>3.2.1.3 [Modified]:</b> The educational experiences and supervision are appropriate for residents' stage or level of training and support residents' achievement of increasing professional responsibility. <b>3.2.1.5:</b> The educational experiences provide residents with training in an environment where the experience includes decision-making regarding whether a post-mortem examination needs to be conducted, the appropriateness of tissue/organ procurement in medico-legal cases, risk management issues arising from tissue/organ retention following an autopsy, and the certification of death. <b>3.2.1.6:</b> The educational experiences include the opportunity for residents to provide interpretation and relevance of post-mortem and laboratory findings to clinical colleagues, coroners, law enforcement personnel, judges and lawyers, or others involved in medico-legal investigations or legal proceedings. <b>3.2.1.7:</b> The educational experiences provide residents with an opportunity to witness expert testimony and participate in a real or mock trial.
<b>3.2.2:</b> The residency program uses a comprehensive curriculum plan, which is specific to the discipline and addresses all of the CanMEDS Roles.	<b>3.2.2.7:</b> The curriculum plan includes opportunities for residents to gain knowledge and a thorough understanding of the legal framework for death investigation in the jurisdiction in which they are training. <b>3.2.2.8:</b> The curriculum plan includes opportunities for residents to perform post-mortem examinations, with appropriate use of special dissections and ancillary testing, including the production of timely reports that are complete, accurate, and well organized. <b>3.2.2.9:</b> The curriculum plan includes opportunities that support acquisition of knowledge and expertise of specialized forensic dissection techniques.

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**3.2.2.10:** The curriculum plan includes opportunities that support acquisition of knowledge of ancillary investigations/tests and special forensic consultations.

**3.2.2.11:** The curriculum plan includes opportunities that provide exposure to forensic-related fields.

**3.2.2.12:** The curriculum plan includes opportunities for residents to acquire knowledge of the various levels of the judicial system and sections of the Criminal Code of Canada relevant to Forensic Pathology.

**3.2.2.13:** The curriculum plan includes opportunities that support resident acquisition of skills related to court testimony and effective communication with coroners/medical examiners, law enforcement personnel, legal professionals, and other involved in medicolegal investigations.<sup>3</sup>

**3.2.2.14:** The curriculum plan includes opportunities for residents to learn and develop collaborative skills that enable residents to work effectively with law enforcement personnel, legal professionals, and others involved in medico-legal investigations and legal proceedings.

**3.2.2.15:** The curriculum plan includes opportunities for residents to acquire knowledge of the management principles of a forensic pathology unit, as well as knowledge in quality assurance specific to Forensic Pathology, and autopsy suite and laboratory safety, including universal precautions.

**3.2.2.16 [Exemplary]:** *The residency program incorporates the Forensic Pathology Pathway to Competence in its curriculum plan.*

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<sup>3</sup> Residents should be able to provide clear and thorough explanations of post-mortem findings in the context of the history and/or scene investigation and convey potential limitations of such interpretations. Residents should be able to convey the cause, manner, and mechanism of death. Residents should also be able to convey the limitations of Forensic Pathology.

STANDARDS OF ACCREDITATION FOR RESIDENCY PROGRAMS IN FORENSIC PATHOLOGY  
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**Element 3.3: Teachers facilitate residents' attainment of competencies and/or objectives.**

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<b>Requirement(s)</b>	<b>Indicator(s)</b>
<b>3.3.1:</b> Resident learning needs, stage or level of training, and other relevant factors are used to guide all teaching, supporting resident attainment of competencies and/or objectives.	<b>3.3.1.6:</b> Teachers play an active role in supervision, education, and assessment of residents, as well as in curriculum development.

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**Element 3.4: There is an effective, organized system of resident assessment.**

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<b>Requirement(s)</b>	<b>Indicator(s)</b>
<b>3.4.1:</b> The residency program has a planned, defined and implemented system of assessment.	<b>3.4.1.8:</b> The system of assessment meets the requirements of the <i>Forensic Pathology Portfolio</i> . <b>3.4.1.9:</b> The system of assessment includes an analysis of a resident logbook <sup>4</sup> as well as other tools to assess resident competencies.
<b>3.4.3:</b> There is a well-articulated process for decision-making regarding resident progression, including the decision on satisfactory completion of training.	<b>3.4.3.1 [Modified]:</b> The competence committee regularly reviews (at a minimum, at the expected end of each stage) residents' readiness for increasing professional responsibility, promotion, and transition to independent practice, based on demonstrated achievement of expected competencies and/or objectives for each level or stage of training. <b>3.4.3.5 [Exemplary]:</b> <i>The competence committee's recommendations regarding learner status are consistent with the Royal College's guidelines for Competence by Design.</i>
<b>3.4.4:</b> The system of assessment allows for timely identification of and support for residents who are not attaining the required competencies as expected.	<b>3.4.4.2 [Modified]:</b> Residents who are not progressing as expected are provided with the required support and opportunity to improve their performance, as appropriate.

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<sup>4</sup> The logbook includes court attendance, death scene attendance, special dissections and autopsies (including the age of the deceased, and the cause and manner of death).

## **DOMAIN: RESOURCES**

The *Resources* domain includes standards focused on ensuring resources are sufficient for the delivery of the education program and to ultimately ensure that residents are prepared for independent practice. The Resources domain standards aim to ensure the adequacy of the residency program's clinical, physical, technical, human and financial resources.

*NOTE: In those cases where a university has sufficient resources to provide most of the training in Forensic Pathology but lacks one or more essential elements, the program may still be accredited provided that formal arrangements have been made to send residents to another accredited residency program for periods of appropriate training.*

### **STANDARD 4: The delivery and administration of the residency program is supported by appropriate resources.**

Refer to Standard 4 and its various components within the *General Standards of Accreditation for Residency Programs*, in addition to elements, requirements, and indicators detailed below.

**Element 4.1: The residency program has the clinical, physical, technical, and financial resources to provide all residents with educational experiences needed to acquire all competencies.**

<b>Requirement(s)</b>	<b>Indicator(s)</b>
<b>4.1.1:</b> The patient population is adequate to ensure that residents experience the breadth of the discipline.	<b>4.1.1.3:</b> The volume and diversity of pathological material available to the residency program must be sufficient to provide opportunities for each resident in the program to <ul style="list-style-type: none"><li>• acquire the knowledge, skills, and behaviours relating to population aspects of age, gender, culture, and ethnicity appropriate to Forensic Pathology;</li><li>• evaluate a minimum of 30 death investigation scenes, through a combination of on-site scene evaluation and provided documentation;</li><li>• perform a minimum of 100 completed medico-legal post-mortem examinations, including those of infants, children, and adults, on a wide range of natural and unnatural deaths, with at least 30% of the cases being complex in nature, including but not limited to homicides and criminally suspicious deaths; and</li><li>• acquire knowledge of infant autopsy techniques and examination of placentas.</li></ul>

*STANDARDS OF ACCREDITATION FOR RESIDENCY PROGRAMS IN FORENSIC PATHOLOGY  
(2018 VERSION 1.0)*

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**4.1.2:** Clinical and consultative facilities and services are organized and adequate to ensure that residents experience the breadth of the discipline.

**4.1.2.4:** The residency program has access to toxicologists and other laboratory scientists to assist residents in interpretation of reports and test results.

**4.1.2.5** The residency program has access to services in the forensic fields of neuropathology, cardiac pathology, forensic anthropology, and forensic odontology.

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**4.1.3:** Diagnostic and laboratory services and facilities are organized and adequate to ensure that residents experience the breadth of the discipline.

**4.1.3.1 [Modified]:** The residency program has ready access to appropriate laboratory and diagnostic services, to meet both residents' competency requirements and the delivery of quality forensic pathology, including but not limited to

- a pathology laboratory with routine histology, special stains, and immunohistology;
- biochemistry and microbiology laboratories;
- accredited centres for forensic testing (e.g., toxicology, chemistry, biology including DNA); and
- medical imaging.

**4.1.3.2:** The residency program has access to resources to ensure that residents are exposed to forensic science disciplines, which may include toxicology, chemistry, biology (including DNA testing), firearm and tool mark examination, forensic photography, blood pattern analysis, fingerprint analysis, entomology, and other specialties as appropriate with specific medico-legal cases.

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**4.1.5:** There is appropriate liaison with other programs and services to ensure that residents experience the breadth of the discipline

**4.1.5.2:** The university sponsors an accredited program in Anatomical Pathology and/or General Pathology.<sup>5</sup>

**4.1.5.3:** The university sponsoring the Forensic Pathology program is affiliated with a provincial forensic centre.<sup>6</sup>

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<sup>5</sup> The forensic pathology unit may be integrated within a department of pathology in a university-affiliated tertiary care hospital.

<sup>6</sup> A provincial centre may be associated with more than one university.

STANDARDS OF ACCREDITATION FOR RESIDENCY PROGRAMS IN FORENSIC PATHOLOGY  
(2018 VERSION 1.0)

**Element 4.2: The residency program has the appropriate human resources to provide all residents with the required educational experiences.**

Requirement(s)	Indicator(s)
<b>4.2.1:</b> The number, credentials, competencies, and duties of the teachers are appropriate to teach the residency curriculum, supervise and assess trainees, contribute to the program, and role model effective practice.	<b>4.2.1.1 [Modified]:</b> The number, credentials, competencies, and scope of practice of the teachers <sup>7</sup> are adequate to provide required clinical teaching, academic teaching, assessment, and feedback to residents, including teaching in the basic and clinical sciences related to Forensic Pathology.
	<b>4.2.1.2 [Modified]:</b> The number, credentials, competencies, and scope of practice of the teachers are sufficient to supervise residents at all levels and in all aspects of Forensic Pathology, including when residents are on call, attending scenes, acting as a consultant, and testifying in court or at inquests.
	<b>4.2.1.5:</b> The residency program has appropriate professional staff, including death investigators/coroners, and pathology assistants/autopsy technicians, to provide teaching related to their area of expertise in Forensic Pathology.
	<b>4.2.1.6 [Exemplary]:</b> The program director has Royal College certification in Forensic Pathology or equivalent qualifications acceptable to the Royal College.

**DOMAIN: LEARNERS, TEACHERS, AND ADMINISTRATIVE PERSONNEL**

The *Learners, Teachers, and Administrative Personnel* domain includes standards focused on supporting teachers, learners, and administrative personnel – “people services and supports”. The Learners, Teachers, and Administrative Personnel domain program standards aim to ensure

- a safe and positive learning environment for all (i.e. residents, teachers, and administrative personnel); and
- value of and support for administrative personnel.

**STANDARD 5: Safety and wellness is promoted throughout the learning environment.**

Refer to Standard 5 and its various components within the *General Standards of Accreditation for Residency Programs*, in addition to elements, requirements, and indicators detailed below.

<sup>7</sup> A qualified teaching Forensic Pathologist is someone with a 50% time commitment to Forensic Pathology, who has either completed formal training in Forensic Pathology or has more than five years’ experience in Forensic Pathology.

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**Element 5.1: The safety and wellness of residents are actively promoted.**

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Requirement(s)	Indicator(s)
5.1.1: Residents are appropriately supervised.	5.1.1.1 [Modified]: Residents and teachers follow the centralized and any program-specific policies regarding supervision of residents, including ensuring the physical presence of the appropriate supervisor, when mandated, during acts or procedures performed by the resident, as appropriate to their stage or level of training. This includes supervision of residents when on call, attending scenes, acting as a consultant, and testifying in court or at inquests.

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**STANDARD 6: Residents are treated fairly and adequately supported throughout their progression through the residency program.**

Refer to Standard 6 and its various components within the *General Standards of Accreditation for Residency Programs*, in addition to elements, requirements, and Indicators detailed below.

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**Element 6.1: The progression of residents through the residency program is supported, fair, and transparent.**

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Requirement(s)	Indicator(s)
6.1.1: There are effective, clearly defined, transparent, formal processes for the selection and progression of residents.	6.1.1.3: The residency program has effective policies and procedures, or complies with and effectively implements centralized policies and procedures, to address residents who are not progressing as expected through the stages of training.

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**STANDARD 7: Teachers effectively deliver and support all aspects of the residency program.**

Refer to Standard 7 and its various components within the *General Standards of Accreditation for Residency Programs*.

**STANDARD 8: Administrative personnel are valued and supported in the delivery of the residency program.**

Refer to Standard 8 and its various components within the *General Standards of Accreditation for Residency Programs*.

## **DOMAIN: CONTINUOUS IMPROVEMENT**

The *Continuous Improvement* domain includes standards focused on ensuring a culture of continuous improvement is present throughout the residency program, with the aim of ensuring continuous improvement of residency programs.

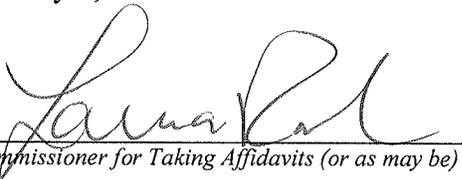
*NOTE: To reinforce and create clarity with respect to the expectations related to continuous improvement, the requirements under the element mimic the continuous improvement cycle (Plan, Do, Study, Act).*

### **STANDARD 9: There is continuous improvement of the educational experiences to improve the residency program and ensure residents are prepared for independent practice.**

Refer to Standard 9 and its various components within the *General Standards of Accreditation for Residency Programs*.

*Approved – Specialty Standards Review Committee &  
Office of Specialty Education – November 2017  
Editorial revision – Office of Specialty Education – March 2018*

This is Exhibit "C" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018

A handwritten signature in cursive script, appearing to read "Laura K. [unclear]". The signature is written in black ink and is positioned above a horizontal line.

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*Commissioner for Taking Affidavits (or as may be)*

**2018**  
**VERSION 1.0**

*These training requirements apply to those who begin training on or after July 1, 2018.*

## **ELIGIBILITY REQUIREMENTS**

Royal College certification in Anatomical Pathology or General Pathology, or enrolment in a Royal College-accredited residency program in these areas (see requirements for these qualifications). All candidates must be certified in Anatomical Pathology or General Pathology in order to be eligible to write the Royal College examination in Forensic Pathology.

## **TRANSITION TO DISCIPLINE (TTD)**

*The focus of this stage is on the orientation of new trainees to the roles within the interprofessional team, and institutional policies and regulations related to practising Forensic Pathology, including health and safety policies as well as legal and regulatory frameworks. During this stage, residents will be assessed on their autopsy skills, specifically: performing pre-autopsy assessments, demonstrating procedural abilities, and writing autopsy reports.*

### **Required training experiences (TTD stage):**

1. Clinical training experiences
  - 1.1. Autopsy suite
2. Other training experiences
  - 2.1. Formal teaching in
    - 2.1.1. Health and safety with respect to forensic pathology (e.g., post-mortem room)
    - 2.1.2. Privacy and confidentiality in the medico-legal context
  - 2.2. Orientation to
    - 2.2.1. Autopsy suite policies and procedures
    - 2.2.2. The legal and regulatory framework of the program's jurisdiction
    - 2.2.3. Hospital and/or institutional policies and procedures
    - 2.2.4. The members of the Interprofessional team and their roles
    - 2.2.5. Competency-based education in Forensic Pathology

## **FOUNDATIONS OF DISCIPLINE (F)**

*The focus of this stage is to develop the skills required for forensic pathology investigations under clinical supervision, including the appropriate stewardship of time and resources. For routine cases, trainees are required to review and interpret information from death scenes, as well as perform forensic pathology examinations, including forensic autopsies and select dissections. They will use the information gathered to formulate opinions and report on the findings for routine death investigations. Trainees gain additional experience providing assistance in more complex pediatric cases or those considered to be of a suspicious nature.*

### **Required training experiences (Foundations stage):**

1. Clinical training experiences
  - 1.1. Remote review of death scene investigation, using paperwork, images, and other documentation
  - 1.2. Autopsy suite
2. Other training experiences
  - 2.1. Formal instruction in
    - 2.1.1. Principles of death scene interpretation
    - 2.1.2. Death investigation systems in Canada
    - 2.1.3. Cultural and religious accommodations relevant to forensic pathology
    - 2.1.4. Ethical issues, policies, and laws associated with organ retention
    - 2.1.5. Principles of quality assurance, and risk management strategies

### **Recommended training experiences (Foundations stage):**

3. Clinical training experiences
  - 3.1. Death scene attendance
4. Other training experiences
  - 4.1. Formal instruction in
    - 4.1.1. Social geography and epidemiology of the local jurisdiction
  - 4.2. Observation of expert witness role in court
  - 4.3. Observation of case conferences

## **CORE OF DISCIPLINE (C)**

*The focus of this stage is to demonstrate the core skills of a Forensic Pathologist, not only demonstrating procedural and interpretive skills required for complex cases, dissections, and examinations, but also taking on more responsibility for safety, quality assurance, and teaching and supervising junior colleagues. Residents build on the skills of the previous stage to provide case management of a death scene, manage a larger case load, and participate in organ and tissue donation decisions.*

### **Required training experiences (Core stage):**

1. Clinical training experiences
  - 1.1. Death scene attendance
  - 1.2. Autopsy suite
  - 1.3. After-hours coverage for forensic pathology service
  
2. Other training experiences
  - 2.1. Formal instruction in
    - 2.1.1. Pathophysiology of death, including post-mortem changes
    - 2.1.2. Mechanisms of injury and/or death
      - 2.1.2.1. Blunt force injuries
      - 2.1.2.2. Sharp force injuries
      - 2.1.2.3. Transportation injuries
      - 2.1.2.4. Asphyxia
      - 2.1.2.5. Firearm injuries
      - 2.1.2.6. Hostile environment deaths
      - 2.1.2.7. Toxicological deaths
      - 2.1.2.8. Sudden natural deaths, including maternal deaths and complications of medical therapy
      - 2.1.2.9. Pediatric deaths, including forensic pathology issues associated with neonatal deaths
      - 2.1.2.10. Child maltreatment, elder abuse and neglect
      - 2.1.2.11. Deaths in custody
      - 2.1.2.12. Sexual assault-related trauma
      - 2.1.2.13. Explosion-related trauma
    - 2.1.3. Forensic neuropathology
    - 2.1.4. Ancillary testing other than toxicology (e.g., biochemistry, microbiology)
    - 2.1.5. Principles of death certification and causation
    - 2.1.6. Principles of being an expert witness
    - 2.1.7. Principles of managing multiple victim fatalities
  - 2.2. Observership in forensic science disciplines, which may include anthropology, biology, chemistry, odontology, toxicology, entomology, blood pattern analysis,

## FORENSIC PATHOLOGY TRAINING EXPERIENCES 2018

firearm and tool mark examination, and fingerprint analysis

### **Recommended training experiences (Core stage):**

3. Clinical training experiences
  - 3.1. Coroner/medical examiner/death investigator shadowing
  - 3.2. Real or mock trial participation
  - 3.3. Case conferences/meetings participation
  - 3.4. Court preparation with lawyers
  - 3.5. Defense and/or civil consultations
  - 3.6. Living victim of assault consultations
  - 3.7. Mass incident exercise or review
4. Other training experiences
  - 4.1. Observership in forensic photography
  - 4.2. Attendance at a Forensic Pathology scientific meeting

### **TRANSITION TO PRACTICE (TTP)**

*The focus of this stage is to demonstrate the consolidation of skills required to perform death investigations for any case while managing a full forensic pathology caseload in addition to administering and managing all aspects of a forensic pathology practice. Trainees are expected to demonstrate a contribution to their field as professionals, including participating in consultations for the criminal and civil justice system and leading initiatives to enhance Forensic Pathology.*

### **Required training experiences (TTP stage):**

1. Clinical training experiences
  - 1.1. Triage and scheduling of forensic pathology service activities
  - 1.2. Death scene attendance
  - 1.3. Autopsy suite
  - 1.4. After-hours coverage of forensic pathology service
2. Other training experiences
  - 2.1. Formal teaching in relevant sections of the Criminal Code of Canada
  - 2.2. Real or mock trial participation

### **Recommended training experiences (TTP stage):**

3. Clinical training experiences
  - 3.1. Performance of an autopsy observed by an external reviewer

## FORENSIC PATHOLOGY TRAINING EXPERIENCES 2018

### 4. Other training experiences

- 4.1. Formal teaching in legal and regulatory framework for jurisdiction of expected Canadian practice

### **MODEL DURATION OF TRAINING**

Progress in training occurs through demonstration of competence and advancement through the stages of the Competence Continuum. There is no mandated period of training; historically, training in Forensic Pathology has required one year. Individual duration of training may be influenced by many factors, which may include but are not limited to the student's singular progression through the stages, the availability of teaching and learning resources and/or differences in program implementation. Duration of training for any one individual is therefore at the discretion of the Faculty of Medicine, the Competence Committee, and the program director.

For planning purposes, the stages of the Competence Continuum in Forensic Pathology are generally no longer than two weeks for Transition to Discipline, three months for Foundations of Discipline, seven months for Core of Discipline, and two months for Transition to Practice.

### **CERTIFICATION REQUIREMENTS**

Royal College certification in Forensic Pathology requires all of the following:

1. Royal College certification in Anatomical Pathology or General Pathology;
2. Successful completion of the Royal College examination in Forensic Pathology; and
3. Successful completion of the Forensic Pathology Portfolio.

This document is to be reviewed by the Specialty Committee in Forensic Pathology by December 31, 2019.

*Created – Specialty Committee in Forensic Pathology – October 2016  
Approved – Specialty Standards Review Committee – December 2016*

This is Exhibit "D" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018



*Laura K. [unclear]*

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*Commissioner for Taking Affidavits (or as may be)*

**2018**  
**VERSION 1.0**

*Effective for residents who enter training on or after July 1, 2018.*

*NOTE: Throughout this document, references to stakeholders are intended to include persons from one or more of the following groups: families of the deceased, law enforcement personnel, legal professionals, or others involved in medico-legal investigations or legal proceedings.*

*Throughout this document, references to lawyers are intended to include Crown attorneys and defense counsel.*

## **DEFINITION**

Forensic Pathology is a medical subspecialty of Anatomical Pathology and General Pathology that applies pathologic principles and methodologies to support the medico-legal and judicial systems in determining cause and manner of death, support the investigation of circumstances surrounding deaths, and assist in the interpretation of post-mortem findings of medico-legal significance. These principles may also be applied to injuries in the living.

## **FORENSIC PATHOLOGY PRACTICE**

Forensic Pathologists serve the public by providing unbiased, evidence-informed opinions based on the findings of medico-legal investigations. This work is of relevance to a broad group of stakeholders that includes families of the deceased, law enforcement personnel, legal professionals, or others involved in medico-legal investigations or legal proceedings. Canadian jurisdictions operate within one of two death investigation systems: a coroner system, in which the pathologist assists the coroner by performing an autopsy and determining the cause of death; or a medical examiner system, in which the Forensic Pathologist oversees death investigations and certifies deaths, in addition to performing post-mortem examinations.

The findings of medico-legal death investigations can impact the health and safety of vulnerable populations and society at large. Forensic Pathologists engage with various agencies concerned with public safety, acting as advocates for measures to prevent injuries and untimely deaths. Public safety, government policy, health research funding, and legal issues are informed by the work of Forensic Pathologists who can assess deaths in an unbiased manner and provide evidence-informed opinions.

Forensic Pathologists function as expert consultants to coroners, law enforcement personnel, judges, lawyers, and other physicians. They consult and collaborate with other medical specialists such as neuropathologists, cardiac pathologists, and pediatric

## FORENSIC PATHOLOGY COMPETENCIES (2018)

pathologists, as well as other forensic experts. Forensic Pathologists may practise in academic health centres, major regional hospitals, or centralized forensic pathology units.

### ELIGIBILITY REQUIREMENTS

Royal College certification in Anatomical Pathology or General Pathology, or enrolment in a Royal College-accredited residency program in these areas (see requirements for these qualifications). All candidates must be certified in Anatomical Pathology or General Pathology in order to be eligible to write the Royal College examination in Forensic Pathology.

### FORENSIC PATHOLOGY COMPETENCIES

#### Medical Expert

##### *Definition:*

As *Medical Experts*, Forensic Pathologists integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional values in their provision of high-quality and safe delivery of services. Medical Expert is the central physician Role in the CanMEDS Framework and defines the physician's clinical scope of practice.

***Key and Enabling Competencies: Forensic Pathologists are able to...***

#### **1. Practise medicine within their defined scope of practice and expertise**

- 1.1. Demonstrate a commitment to high-quality delivery of services
- 1.2. Integrate the CanMEDS Intrinsic Roles into their practice of Forensic Pathology
- 1.3. Apply knowledge of the clinical and biomedical sciences, as well as issues of medical jurisprudence, relevant to forensic pathology
  - 1.3.1. Anatomy and physiology
  - 1.3.2. The basis for and appearance of post-mortem changes and embalming artifacts
  - 1.3.3. Principles of histology and pathophysiology as they relate to death investigations
  - 1.3.4. Principles of the various fields of forensic sciences, including but not limited to toxicology, chemistry, biology (including DNA testing), firearm and tool mark examination, entomology, forensic photography, blood pattern analysis, fingerprint analysis, trace evidence, and alternate light source examinations
  - 1.3.5. Principles of the interpretation of toxicological results
  - 1.3.6. Principles of forensic neuropathology, forensic anthropology, and forensic odontology
  - 1.3.7. Principles of the various types of death investigation systems in Canada
  - 1.3.8. Principles of death investigation and the role of the post-mortem examination in such investigations

*FORENSIC PATHOLOGY COMPETENCIES (2018)*

- 1.3.9. Sections of the Criminal Code of Canada relevant to Forensic Pathology
- 1.3.10. Principles of consent, privacy, and confidentiality
- 1.3.11. Relevant laws and regulations in relation to tissue/organ procurement and tissue retention
  
- 1.4. Perform appropriately timed assessments with evidence-informed opinions that are presented in an organized manner
  - 1.4.1. Function in the role of a Forensic Pathologist at the scene of a fatality
  - 1.4.2. Conduct a death investigation
  - 1.4.3. Act as a consultant to clinical colleagues, coroners, law enforcement personnel, judges, and lawyers, on the interpretation and relevance of pathological findings
  
- 1.5. Carry out professional duties in the face of multiple competing demands
- 1.6. Recognize and respond to the complexity, uncertainty, and ambiguity inherent in the practice of forensic pathology
  - 1.6.1. Describe the information and limitations that pathological findings can provide, including but not limited to determination of time of death
  
- 2. Conduct a death investigation, including determination of the identification of the deceased, and the cause and manner of death**
  - 2.1. Prioritize issues to be addressed in a forensic encounter
    - 2.1.1. Determine whether organ and tissue donation is permissible
  
  - 2.2. Assess a death scene
  - 2.3. Establish identification of the deceased, with consultation where appropriate
    - 2.3.1. Establishment of identification in multiple victim fatalities with appropriate consultations
  
  - 2.4. Maintain the chain of custody of evidence
  - 2.5. Perform a complete post-mortem examination in a range of natural and unnatural deaths, with appropriate description of the external and internal findings, including gross and microscopic examinations. This includes the following:
    - 2.5.1. Review of the death scene information and clinical history
    - 2.5.2. Establishment of the identity of the body
    - 2.5.3. External examination of the body
    - 2.5.4. Identification of the circumstances wherein toxicological and other ancillary investigations/tests may be appropriate, and application of the procedures for sampling tissues, fluids and other evidence for these additional investigations

*FORENSIC PATHOLOGY COMPETENCIES (2018)*

- 2.5.5. Recognition of the need for consultations, including but not limited to neuropathology, cardiovascular pathology, forensic anthropology, and/or forensic odontology, and retention of appropriate specimens
  - 2.5.6. Evisceration of organs and gross dissection
  - 2.5.7. Performance of special examinations and/or dissections, and sample procurement
  - 2.5.8. Examination of tissues microscopically
  - 2.5.9. Preparation of written descriptions of the findings
  - 2.5.10. Review of toxicology and/or other ancillary test results
  - 2.5.11. Interpretation of post-mortem findings in light of the clinical history and/or scene investigation and appreciation of potential limitations of such interpretations
  - 2.5.12. Formulation of conclusions regarding cause, manner, and mechanism of death, using an evidence-informed approach
- 2.6. Obtain photographic documentation of the post-mortem examination

**3. Plan and perform procedures for the purpose of death investigation**

- 3.1. Determine the most appropriate procedures to accurately assess cause, manner, and mechanism of death
- 3.2. Ensure appropriate legal authority is obtained for procedures
- 3.3. Prioritize a procedure, taking into account available resources
- 3.4. Perform a procedure in a skillful and safe manner, adapting to unanticipated findings or changing clinical circumstances
  - 3.4.1. Opening the calvarium, and removal of the brain
  - 3.4.2. Collection of cerebral spinal fluid
  - 3.4.3. Removal of the spinal cord
  - 3.4.4. Exposure of the optic nerves and posterior eyes, or removal of the eyes, as necessary
  - 3.4.5. Examination of the middle ear
  - 3.4.6. Dissection of the face
  - 3.4.7. Anterior layer-by-layer dissection of the neck with tongue removal
  - 3.4.8. Dissection of the posterior neck
  - 3.4.9. Evaluation of the vertebral artery
  - 3.4.10. Evaluation of the cardiac conduction system
  - 3.4.11. Layered dissection of the anterior and/or posterior torso
  - 3.4.12. Dissection of the extremities
  - 3.4.13. Removal of the testes

## FORENSIC PATHOLOGY COMPETENCIES (2018)

- 3.4.14. Dissection of the perineum and pelvic block
- 3.4.15. Pediatric autopsy techniques
- 3.4.16. Examination of the placenta

### **4. Establish plans for ongoing cases and, when appropriate, timely consultation**

- 4.1. Implement an action plan that supports ongoing cases, follow-up on investigations, response to stakeholder needs, and further consultation

### **5. Actively contribute, as an individual and as a member of a team, to the continuous improvement of death investigation**

- 5.1. Recognize and respond to errors in death investigation
  - 5.1.1. Prevent contamination of the death scene
- 5.2. Adopt strategies that promote safety and address human and system factors
  - 5.2.1. Describe CBRNE (chemical, biological, radiological, nuclear, and explosive) safety considerations for post-mortem examinations
  - 5.2.2. Demonstrate knowledge of reportable and communicable infectious diseases, and determine the need for communication with the appropriate authorities

## **Communicator**

### **Definition:**

As *Communicators*, Forensic Pathologists form relationships with stakeholders, which may include families, to facilitate the gathering and sharing of essential information for effective delivery of service.

### **Key and Enabling Competencies: Forensic Pathologists are able to...**

#### **1. Establish professional relationships with stakeholders**

- 1.1. Communicate using an approach that encourages trust and is characterized by empathy, respect, and compassion
- 1.2. Optimize the physical environment for the dignity and privacy of the deceased person
- 1.3. Recognize when the values, biases, or perspectives of stakeholders or health care professionals may have an impact on the quality of services
- 1.4. Manage disagreements and emotionally charged conversations
- 1.5. Adapt to the unique needs and preferences of stakeholders and to their circumstances

## FORENSIC PATHOLOGY COMPETENCIES (2018)

- 1.5.1. Apply knowledge of cultural and religious accommodations in scheduling and selection of techniques for post-mortem examinations and death investigations, while ensuring that the death investigation is not compromised

### **2. Elicit and synthesize accurate and relevant information**

- 2.1. Seek and synthesize relevant information from a variety of sources, including stakeholders and other experts

### **3. Share death investigation information with stakeholders, where appropriate**

- 3.1. Share information and provide explanations that are clear, accurate, and timely, while assessing for understanding

### **4. Document and share written and electronic information about the death investigation to optimize decision-making, confidentiality, and privacy**

- 4.1. Document death investigations in an accurate, complete, timely, and accessible manner, in compliance with regulatory and legal requirements
  - 4.1.1. Communicate post-mortem findings
- 4.2. Communicate effectively using written, electronic, or other digital technology
- 4.3. Share information with stakeholders and others in a manner that respects privacy and confidentiality and enhances understanding
  - 4.3.1. Communicate information appropriately, including evidence-informed opinions and conclusions, to law enforcement personnel, coroners/medical examiners, and lawyers

## **Collaborator**

### ***Definition:***

As *Collaborators*, Forensic Pathologists work effectively in a medico-legal team to achieve optimal delivery of services.

### ***Key and Enabling Competencies: Forensic Pathologists are able to...***

#### **1. Work effectively with physicians and other colleagues in the medico-legal team**

- 1.1. Establish and maintain positive relationships with physicians and other colleagues in the medico-legal team to support collaborative services
- 1.2. Negotiate overlapping and shared responsibilities with physicians and other colleagues in the medico-legal team
- 1.3. Engage in respectful shared decision-making with physicians and other colleagues in the medico-legal team

## FORENSIC PATHOLOGY COMPETENCIES (2018)

- 1.3.1. Demonstrate an interprofessional approach for a death investigation in collaboration with other members of the medico-legal team
- 1.3.2. Participate in death investigation team meetings when needed, demonstrating the ability to consider and respect the opinion of other team members
- 1.3.3. Use referral and consultation as opportunities to improve quality of death investigation and outcomes by sharing expertise

### **2. Work with physicians and other colleagues in the medico-legal team to promote understanding, manage differences, and resolve conflicts**

- 2.1. Show respect toward collaborators
- 2.2. Implement strategies to promote understanding, manage differences, and resolve conflict in a manner that supports a collaborative culture
  - 2.2.1. Demonstrate awareness of medico-legal death investigation as a collaborative effort between individuals and groups with different skills and experience working toward a common goal

### **Leader**

#### ***Definition:***

As *Leaders*, Forensic Pathologists engage with others to contribute to a vision of high-quality medico-legal and health care systems and take responsibility for the delivery of excellent services through their activities as physicians, administrators, scholars or teachers.

#### ***Key and Enabling Competencies: Forensic Pathologists are able to...***

### **1. Contribute to the improvement of the death investigation system**

- 1.1. Apply the science of quality improvement to contribute to improving death investigations
- 1.2. Contribute to a culture that promotes safety
  - 1.2.1. Apply the principles of laboratory safety and universal precautions
- 1.3. Analyze safety incidents to enhance systems of care
- 1.4. Use informatics to improve the quality of death investigations

### **2. Engage in the stewardship of resources**

- 2.1. Allocate resources for optimal delivery of services
- 2.2. Apply evidence and management processes to achieve cost-appropriate services

**3. Demonstrate leadership in professional practice**

- 3.1. Demonstrate leadership skills to enhance medico-legal or health care systems
  - 3.1.1. Describe the principles of laboratory management
  - 3.1.2. Engage personnel and procedures effectively in death investigations, including but not limited to maintaining the legal chain of custody of evidence
- 3.2. Facilitate change in forensic pathology procedures and investigative approaches to enhance services and outcomes

**4. Manage career planning, finances, and human resources**

- 4.1. Set priorities and manage time to integrate practice and personal life
  - 4.1.1. Complete clinical responsibilities in a timely fashion
- 4.2. Manage a career and a practice
  - 4.2.1. Develop and maintain a curriculum vitae with formatting and content appropriate for use in medico-legal proceedings
- 4.3. Implement processes to ensure personal practice improvement
  - 4.3.1. Apply the methods of professional quality assurance to Forensic Pathology practice

**Health Advocate**

**Definition:**

As *Health Advocates*, Forensic Pathologists contribute their expertise and influence as they work with communities or populations to improve health. They work with those they serve to determine and understand needs, speak on behalf of others when required, and support the mobilization of resources to effect change.

**Key and Enabling Competencies: Forensic Pathologists are able to...**

**1. Respond to health needs by advocating within and beyond the death investigation system**

- 1.1. Incorporate disease prevention, health promotion, and health surveillance into interactions with individual cases
  - 1.1.1. Identify hereditary diseases and inform family members to protect the health of living relatives

## FORENSIC PATHOLOGY COMPETENCIES (2018)

### **2. Respond to the needs of the communities or populations they serve by advocating with them for system-level change in a socially accountable manner**

- 2.1. Contribute to a process to improve health in the community or population they serve
  - 2.1.1. Contribute to mortality surveillance systems to reduce population mortality and morbidity
  - 2.1.2. Collaborate with public health officials to identify threats to public health

### **Scholar**

#### ***Definition:***

As *Scholars*, Forensic Pathologists demonstrate a lifelong commitment to excellence in practice through continuous learning, and by teaching others, evaluating evidence, and contributing to scholarship.

#### ***Key and Enabling Competencies: Forensic Pathologists are able to...***

- 1. Engage in the continuous enhancement of their professional activities through ongoing learning**
  - 1.1. Develop, implement, monitor, and revise a personal learning plan to enhance professional practice
  - 1.2. Identify opportunities for learning and improvement by regularly reflecting on and assessing their performance using various Internal and external data sources
    - 1.2.1. Participate in peer review for purposes of personal practice improvement
  - 1.3. Engage in collaborative learning to continuously improve personal practice and contribute to collective improvements in practice
  
- 2. Teach students, residents, the public, other health care professionals, and members of the medico-legal team**
  - 2.1. Recognize the influence of role-modelling and the impact of the formal, Informal, and hidden curriculum on learners
  - 2.2. Promote a safe learning environment
  - 2.3. Ensure integrity of the death investigation is maintained when learners are involved
  - 2.4. Plan and deliver learning activities
    - 2.4.1. Identify the learning needs and desired learning outcomes of others collaboratively, including but not limited to peers, junior learners, law enforcement personnel, coroners/medical examiners, lawyers, and other members of the medico-legal team
  - 2.5. Provide feedback to enhance learning and performance

## FORENSIC PATHOLOGY COMPETENCIES (2018)

- 2.6. Assess and evaluate learners, teachers, and programs in an educationally appropriate manner

### 3. Integrate best available evidence into practice

- 3.1. Recognize practice uncertainty and knowledge gaps in medico-legal and other professional encounters, and generate focused questions that can address them
- 3.2. Identify, select, and navigate pre-appraised resources
- 3.3. Critically evaluate the integrity, reliability, and applicability of medico-legal research and literature
- 3.4. Integrate evidence into decision-making

### 4. Contribute to the creation and dissemination of knowledge and practices applicable to Forensic Pathology

- 4.1. Demonstrate an understanding of the scientific principles of research and scholarly inquiry and the role of research evidence in Forensic Pathology
- 4.2. Identify ethical principles for research and incorporate them into obtaining ethics approval and permission from the custodian of the mortality database (e.g., the chief coroner or chief medical examiner), considering potential harms and benefits, and considering vulnerable populations
- 4.3. Contribute to the work of a research program
- 4.4. Pose questions amenable to scholarly investigation and select appropriate methods to address them
- 4.5. Summarize and communicate to professional and lay audiences the findings of relevant research and scholarly inquiry

## Professional

### Definition:

As *Professionals*, Forensic Pathologists are committed to the integrity of the medico-legal and health systems, and the well-being of society through ethical practice, high personal standards of behaviour, accountability to the profession and society, physician-led regulation, and maintenance of personal health.

### Key and Enabling Competencies: Forensic Pathologists are able to...

#### 1. Demonstrate a commitment to death investigations by applying best practices and adhering to high ethical standards

- 1.1. Exhibit appropriate professional behaviours and relationships in all aspects of practice, demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality
  - 1.1.1. Demonstrate respect for the deceased and the death investigation in publications and teaching presentations

## FORENSIC PATHOLOGY COMPETENCIES (2018)

- 1.2. Demonstrate a commitment to excellence in all aspects of practice
    - 1.2.1. Demonstrate an appreciation of the limitations of certain findings, individual professional limitations, and the necessity of seeking appropriate second opinions
    - 1.2.2. Recognize the need for a balanced approach when addressing controversial issues and/or competing findings and presenting forensic pathology information in the medico-legal setting
  - 1.3. Recognize and respond to ethical issues encountered in practice
    - 1.3.1. Ethical issues in organ retention
  - 1.4. Recognize and manage conflicts of interest
  - 1.5. Exhibit professional behaviours in the use of technology-enabled communication
- 2. Demonstrate a commitment to society by recognizing and responding to societal expectations in death investigations**
- 2.1. Demonstrate accountability to stakeholders, society, and the profession by responding to societal expectations of physicians
  - 2.2. Demonstrate a commitment to public safety and quality improvement
- 3. Demonstrate a commitment to the profession by adhering to standards and participating in physician-led regulation**
- 3.1. Fulfil and adhere to the professional and ethical codes, standards of practice, and laws governing practice
    - 3.1.1. Fulfil the requirements of the physician's duty to report, including but not limited to communicable disease, and suspected child, domestic, or elder abuse
    - 3.1.2. Demonstrate an understanding of criminal, civil, and Inquest procedures, the role of the Crown and the defense, and the rules of evidence
    - 3.1.3. Meet legal, ethical, procedural, and behavioural requirements when testifying
  - 3.2. Recognize and respond to unprofessional and unethical behaviours in physicians and colleagues in the death investigation system
  - 3.3. Participate in peer assessment and standard setting
    - 3.3.1. Demonstrate a commitment to excellence in the discipline by participating in regular peer review

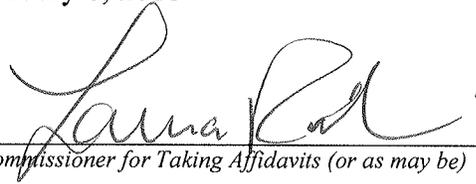
*FORENSIC PATHOLOGY COMPETENCIES (2018)*

- 4. Demonstrate a commitment to physician health and well-being to foster optimal delivery of services**
- 4.1. Exhibit self-awareness and manage influences on personal well-being and professional performance
  - 4.2. Manage personal and professional demands for a sustainable practice throughout the physician life cycle
  - 4.3. Promote a culture that recognizes, supports, and responds effectively to colleagues in need

This document is to be reviewed by the Specialty Committee in Forensic Pathology by December 31, 2019.

*Created – Specialty Committee in Forensic Pathology – October 2016  
Approved – Specialty Standards Review Committee – December 2016*

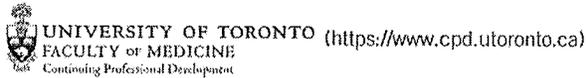
This is Exhibit "E" referred to in the Affidavit of Michael S.  
Pollanen affirmed July 6, 2018



Larina K. Ed.

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*Commissioner for Taking Affidavits (or as may be)*



Home (<http://www.cpd.utoronto.ca/fo>)  
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 Agenda (<https://www.cpd.utoronto.ca>)  
 Venue (<https://www.cpd.utoronto.ca/fo>)  
 Fees (<https://www.cpd.utoronto.ca/fo>)

## Elder Abuse Conference

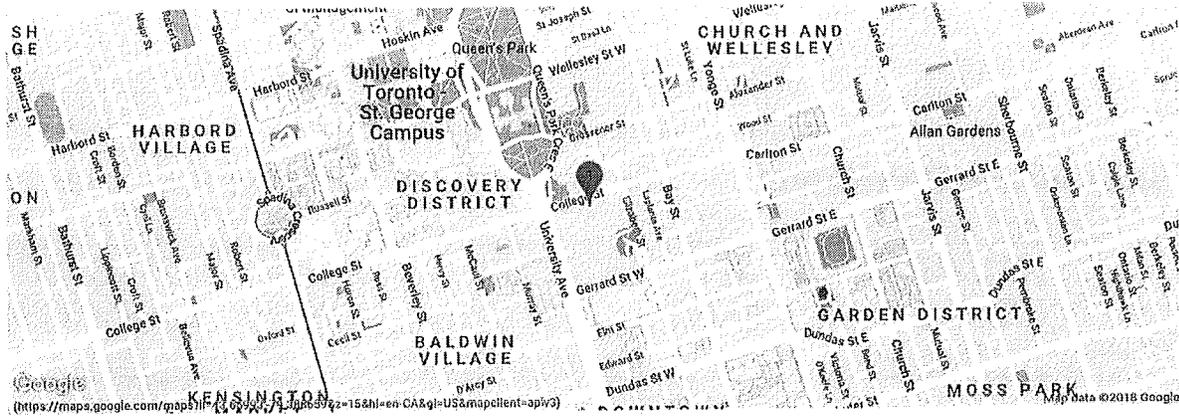
February 2nd, 2017 - MaRS – 101 College St.

### Agenda

#### February 2, 2017

Each presentation will include 10 minutes for questions and discussion

<b>MORNING:</b>	
8:15	Registration and Continental Breakfast
8:45	Introduction and Welcome Michael Pollanen
9:00	Systemic Factors and the Social Determinants of Health in Elder Neglect Michael Pollanen
9:45	Elder Abuse and Neglect: The Geriatrics Perspective Raeanne Rideout
10:30	Refreshment Break
10:45	The Pathology of Elder Abuse and Neglect Rebekah Jacques
11:30	Elder Abuse and Neglect: The Police Perspective Tammy Rankin and TBC
12:15	Lunch (Provided)
<b>AFTERNOON:</b>	
1:30	Elder Abuse and Neglect: The Advocacy Perspective Judith Wahl
2:15	Elder Abuse and Neglect in First Nations Kona Williams
3:00	Panel Discussion
3:45	Closing Remarks Michael Pollanen
4:00	Evaluation and Adjournment



**MaRS Auditorium**

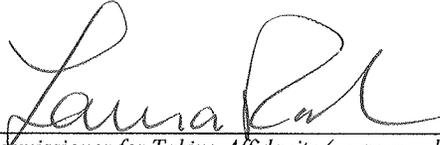
101 College St.  
Toronto

More Venue Information (<https://www.cpd.utoronto.ca/forensics/location/>)

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 500 University Avenue, Suite 650 Toronto, Ontario, M5G 1V7  
 Tel: 416.978.2719 / Toll free: 1.888.512.8173  
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[LMP1735@cpdutoronto.ca?subject=Website Inquiry: Elder Abuse Conference](mailto:LMP1735@cpdutoronto.ca?subject=Website%20Inquiry%3A%20Elder%20Abuse%20Conference)

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This is Exhibit "F" referred to in the Affidavit of Michael S.  
Pollanen affirmed July 6, 2018

A handwritten signature in black ink, appearing to read "Laura K." followed by a stylized flourish.

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*Commissioner for Taking Affidavits (or as may be)*

## Coroners Act

### R.S.O. 1990, CHAPTER C.37

**Consolidation Period:** From January 1, 2018 to the e-Laws currency date.

Last amendment: 2017, c. 34, Sched. 46, s. 9.

Legislative History: 1993, c. 27, Sched.; 1994, c. 27, s. 136; 1997, c. 39, s. 4-6; 1998, c. 18, Sched. B, s. 3; 1998, c. 18, Sched. G, s. 47; 1999, c. 6, s. 15; 1999, c. 12, Sched. P, s. 1, 2; 2001, c. 13, s. 10; 2002, c. 33, s. 142; 2005, c. 5, s. 15; 2005, c. 29, s. 2; 2006, c. 19, Sched. C, s. 1 (1); 2006, c. 19, Sched. D, s. 4; 2006, c. 21, Sched. C, s. 104; 2006, c. 24, s. 2; 2007, c. 8, s. 201; 2008, c. 14, s. 50; 2009, c. 15; 2009, c. 33, Sched. 8, s. 11; 2009, c. 33, Sched. 9, s. 3; 2009, c. 33, Sched. 18, s. 6; 2017, c. 7, s. 1; 2017, c. 14, Sched. 4, s. 8; 2017, c. 25, Sched. 9, s. 91; 2017, c. 34, Sched. 46, s. 9.

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## Definitions

1 (1) In this Act,

“Chief Coroner” means the Chief Coroner for Ontario; (“coroner en chef”)

“Chief Forensic Pathologist” means the Chief Forensic Pathologist for Ontario; (“médecin légiste en chef”)

“Deputy Chief Coroner” means a Deputy Chief Coroner for Ontario; (“coroner en chef adjoint”)

“Deputy Chief Forensic Pathologist” means a Deputy Chief Forensic Pathologist for Ontario; (“médecin légiste en chef adjoint”)

“forensic pathologist” means a pathologist who has been certified by the Royal College of Physicians and Surgeons of Canada in forensic pathology or has received equivalent certification in another jurisdiction; (“médecin légiste”)

“mine” means a mine as defined in the *Occupational Health and Safety Act*; (“mine”)

“mining plant” means a mining plant as defined in the *Occupational Health and Safety Act*; (“installation minière”)

“Minister” means the Minister of Community Safety and Correctional Services or the minister of the Crown to whom the powers and duties under this Act are assigned or transferred under the *Executive Council Act*; (“ministre”)

“Oversight Council” means the Death Investigation Oversight Council established under section 8; (“Conseil de surveillance”)

“pathologist” means a physician who has been certified by the Royal College of Physicians and Surgeons of Canada as a specialist in anatomical or general pathology or has received equivalent certification in another jurisdiction; (“pathologiste”)

“pathologists register” means the register of pathologists maintained under section 7.1; (“registre des pathologistes”)

“spouse” means a person,

(a) to whom the deceased was married immediately before his or her death,

(b) with whom the deceased was living in a conjugal relationship outside marriage immediately before his or her death, if the deceased and the other person,

(i) had cohabited for at least one year,

(ii) were together the parents of a child, or

(iii) had together entered into a cohabitation agreement under section 53 of the *Family Law Act*; (“conjoint”) “tissue” includes an organ or part of an organ. (“tissu”) R.S.O. 1990, c. C.37, s. 1; 1999, c. 6, s. 15 (1); 2005, c. 5, s. 15 (1, 2); 2009, c. 15, s. 1 (1); 2017, c. 34, Sched. 46, s. 9 (1).

#### **Interpretation of body**

(2) A reference in this Act to the body of a person includes part of the body of a person. 2009, c. 15, s. 1 (2).

#### **Section Amendments with date in force (d/m/y)**

1999, c. 6, s. 15 (1) - 01/03/2000

2005, c. 5, s. 15 (1, 2) - 09/03/2005

2009, c. 15, s. 1 (1, 2) - 27/07/2009

2017, c. 34, Sched. 46, s. 9 (1) - 01/01/2018

#### **Effect of Act**

##### **Repeal of common law functions**

2 (1) In so far as it is within the jurisdiction of the Legislature, the common law as it relates to the functions, powers and duties of coroners within Ontario is repealed. R.S.O. 1990, c. C.37, s. 2 (1).

##### **Inquest not criminal court of record**

(2) The powers conferred on a coroner to conduct an inquest shall not be construed as creating a criminal court of record. R.S.O. 1990, c. C.37, s. 2 (2).

##### **Appointment of coroners**

3 (1) The Lieutenant Governor in Council may appoint one or more legally qualified medical practitioners to be coroners for Ontario who, subject to subsections (2), (3) and (4), shall hold office during pleasure. R.S.O. 1990, c. C.37, s. 3 (1).

##### **Tenure**

(2) A coroner ceases to hold office on ceasing to be a legally qualified medical practitioner. 2005, c. 29, s. 2.

##### **Chief Coroner to be notified**

(3) The College of Physicians and Surgeons of Ontario shall forthwith notify the Chief Coroner where the licence of a coroner for the practice of medicine is revoked, suspended or cancelled. R.S.O. 1990, c. C.37, s. 3 (3).

##### **Resignation**

(4) A coroner may resign his or her office in writing. R.S.O. 1990, c. C.37, s. 3 (4).

##### **Residential areas**

(5) The Lieutenant Governor in Council may by regulation establish areas of Ontario and the appointment and continuation in office of a coroner is subject to the condition that he or she is ordinarily resident in the area named in the appointment. R.S.O. 1990, c. C.37, s. 3 (5).

##### **Crown Attorney notified of appointment**

(6) A copy of the order appointing a coroner shall be sent by the Minister to the Crown Attorney of any area in which the coroner will ordinarily act. R.S.O. 1990, c. C.37, s. 3 (6).

##### **Appointments continued**

(7) All persons holding appointments as coroners under *The Coroners Act*, being chapter 87 of the Revised Statutes of Ontario, 1970, shall be deemed to have been appointed in accordance with this Act. R.S.O. 1990, c. C.37, s. 3 (7).

#### **Section Amendments with date in force (d/m/y)**

1998, c. 18, Sched. G, s. 47 - 1/02/1999

2005, c. 29, s. 2 - 12/12/2006

##### **Chief Coroner and duties**

4 (1) The Lieutenant Governor in Council may appoint a coroner to be Chief Coroner for Ontario who shall,

- (a) administer this Act and the regulations;

- (b) supervise, direct and control all coroners in Ontario in the performance of their duties;
- (c) conduct programs for the instruction of coroners in their duties;
- (d) bring the findings and recommendations of coroners' investigations and coroners' juries to the attention of appropriate persons, agencies and ministries of government;
- (e) prepare, publish and distribute a code of ethics for the guidance of coroners;
- (f) perform such other duties as are assigned to him or her by or under this or any other Act or by the Lieutenant Governor in Council. R.S.O. 1990, c. C.37, s. 4 (1); 2009, c. 15, s. 2 (1, 2).

#### **Deputy Chief Coroners**

(2) The Lieutenant Governor in Council may appoint one or more coroners to be Deputy Chief Coroners for Ontario and a Deputy Chief Coroner shall act as and have all the powers and authority of the Chief Coroner if the Chief Coroner is absent or unable to act or if the Chief Coroner's position is vacant. 2009, c. 15, s. 2 (3).

#### **Delegation**

(3) The Chief Coroner may delegate in writing any of his or her powers and duties under this Act to a Deputy Chief Coroner, subject to any limitations, conditions and requirements set out in the delegation. 2009, c. 15, s. 2 (4).

#### **Section Amendments with date in force (d/m/y)**

1999, c. 12, Sched. P, s. 1 - 04/02/2000

2009, c. 15, s. 2 (1-4) - 27/07/2009

#### **Regional coroners**

5 (1) The Lieutenant Governor in Council may appoint a coroner as a regional coroner for such region of Ontario as is described in the appointment. R.S.O. 1990, c. C.37, s. 5 (1).

#### **Duties**

(2) A regional coroner shall assist the Chief Coroner in the performance of his or her duties in the region and shall perform such other duties as are assigned to him or her by the Chief Coroner. R.S.O. 1990, c. C.37, s. 5 (2).

#### **Ontario Forensic Pathology Service**

6 The Minister shall establish the Ontario Forensic Pathology Service, to be known in French as Service de médecine légale de l'Ontario, the function of which shall be to facilitate the provision of pathologists' services under this Act. 2009, c. 15, s. 3.

#### **Section Amendments with date in force (d/m/y)**

1998, c. 18, Sched. B, s. 3 - 18/12/1998

2009, c. 15, s. 3 - 27/07/2009

#### **Chief Forensic Pathologist and Deputies**

7 (1) The Lieutenant Governor in Council may appoint a forensic pathologist to be Chief Forensic Pathologist for Ontario who shall,

- (a) be responsible for the administration and operation of the Ontario Forensic Pathology Service;
- (b) supervise and direct pathologists in the provision of services under this Act;
- (c) conduct programs for the instruction of pathologists who provide services under this Act;
- (d) prepare, publish and distribute a code of ethics for the guidance of pathologists in the provision of services under this Act;
- (e) perform such other duties as are assigned to him or her by or under this or any other Act or by the Lieutenant Governor in Council. 2009, c. 15, s. 3.

#### **Deputy Chief Forensic Pathologists**

(2) The Lieutenant Governor in Council may appoint one or more forensic pathologists to be Deputy Chief Forensic Pathologists for Ontario and a Deputy Chief Forensic Pathologist shall act as and have all the powers and authority of the Chief Forensic Pathologist if the Chief Forensic Pathologist is absent or unable to act or if the Chief Forensic Pathologist's position is vacant. 2009, c. 15, s. 3.

### **Delegation**

(3) The Chief Forensic Pathologist may delegate in writing any of his or her powers and duties under this Act to a Deputy Chief Forensic Pathologist, subject to any limitations, conditions and requirements set out in the delegation. 2009, c. 15, s. 3.

### **Section Amendments with date in force (d/m/y)**

1998, c. 18, Sched. B, s. 3 - 18/12/1998

2009, c. 15, s. 3 - 27/07/2009

### **Pathologists register**

**7.1** (1) The Chief Forensic Pathologist shall maintain a register of pathologists who are authorized by the Chief Forensic Pathologist to provide services under this Act. 2009, c. 15, s. 3.

### **Notification re loss of medical licence**

(2) The College of Physicians and Surgeons of Ontario shall forthwith notify the Chief Forensic Pathologist if the licence for the practice of medicine of a pathologist who is on the pathologists register is revoked, suspended or cancelled. 2009, c. 15, s. 3.

### **Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 3 - 27/07/2009

### **Oversight Council**

**8** (1) There is hereby established a council to be known in English as the Death Investigation Oversight Council and in French as Conseil de surveillance des enquêtes sur les décès. 2009, c. 15, s. 4.

### **Membership**

(2) The composition of the Oversight Council shall be as provided in the regulations, and the members shall be appointed by the Lieutenant Governor in Council. 2009, c. 15, s. 4.

### **Chair, vice-chairs**

(3) The Lieutenant Governor in Council may designate one of the members of the Oversight Council to be the chair and one or more members of the Oversight Council to be vice-chairs and a vice-chair shall act as and have all the powers and authority of the chair if the chair is absent or unable to act or if the chair's position is vacant. 2009, c. 15, s. 4.

### **Employees**

(4) Such employees as are considered necessary for the proper conduct of the affairs of the Oversight Council may be appointed under Part III of the *Public Service of Ontario Act, 2006*. 2009, c. 15, s. 4.

### **Delegation**

(5) The chair may authorize one or more members of the Oversight Council to exercise any of the Oversight Council's powers and perform any of its duties. 2009, c. 15, s. 4.

### **Quorum**

(6) The chair shall determine the number of members of the Oversight Council that constitutes a quorum for any purpose. 2009, c. 15, s. 4.

### **Annual report**

(7) The Oversight Council shall prepare an annual report that includes reporting on the Oversight Council's activities under subsection 8.1 (1), and shall provide the report to the Minister and make it available to the public. 2017, c. 34, Sched. 46, s. 9 (2).

### **Same**

(7.1) The Oversight Council shall include such content in the annual report as the Minister may require. 2017, c. 34, Sched. 46, s. 9 (2).

### **Tabling of annual report**

(7.2) The Minister shall table the Oversight Council's annual report in the Assembly. 2017, c. 34, Sched. 46, s. 9 (2).

### **Additional reports**

(8) The Minister may request additional reports from the Oversight Council on its activities, including its activities under subsection 8.1 (1), at any time and the Oversight Council shall submit such reports as requested and may also submit additional reports on the same matters at any time on its own initiative. 2009, c. 15, s. 4.

### **Expenses**

(9) The money required for the Oversight Council's purposes shall be paid out of the amounts appropriated by the Legislature for that purpose. 2009, c. 15, s. 4.

#### **Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 4 - 16/12/2010

2017, c. 34, Sched. 46, s. 9 (2) - 01/01/2018

### **Functions of Oversight Council**

#### **Advice and recommendations to Chief Coroner and Chief Forensic Pathologist**

**8.1** (1) The Oversight Council shall oversee the Chief Coroner and the Chief Forensic Pathologist by advising and making recommendations to them on the following matters:

1. Financial resource management.
2. Strategic planning.
3. Quality assurance, performance measures and accountability mechanisms.
4. Appointment and dismissal of senior personnel.
5. The exercise of the power to refuse to review complaints under subsection 8.4 (10).
6. Compliance with this Act and the regulations.
7. Any other matter that is prescribed. 2009, c. 15, s. 4.

#### **Reports to Oversight Council**

(2) The Chief Coroner and the Chief Forensic Pathologist shall report to the Oversight Council on the matters set out in subsection (1), as may be requested by the Oversight Council. 2009, c. 15, s. 4.

#### **Advice and recommendations to Minister**

(3) The Oversight Council shall advise and make recommendations to the Minister on the appointment and dismissal of the Chief Coroner and the Chief Forensic Pathologist. 2009, c. 15, s. 4.

#### **Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 4 - 16/12/2010

### **Complaints committee**

**8.2** (1) There shall be a complaints committee of the Oversight Council composed, in accordance with the regulations, of members of the Oversight Council appointed by the chair of the Oversight Council. 2009, c. 15, s. 4.

#### **Chair**

(2) The chair of the Oversight Council shall designate one member of the complaints committee to be the chair of the committee. 2009, c. 15, s. 4.

#### **Delegation**

(3) The chair of the complaints committee may delegate any of the functions of the committee to one or more members of the committee. 2009, c. 15, s. 4.

#### **Quorum**

(4) The chair of the complaints committee shall determine the number of members of the complaints committee that constitutes a quorum for any purpose, and may determine that one member constitutes a quorum. 2009, c. 15, s. 4.

#### **Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 4 - 16/12/2010

### **Confidentiality**

**8.3** (1) Every member and employee of the Oversight Council and of the complaints committee shall keep confidential all information that comes to his or her knowledge in the course of performing his or her duties under this Act. 2009, c. 15, s. 4.

### **Exception**

(2) An individual described in subsection (1) may disclose confidential information for the purposes of the administration of this Act or the *Regulated Health Professions Act, 1991* or as otherwise required by law. 2009, c. 15, s. 4.

### **Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 4 - 16/12/2010

### **Complaints**

#### **Right to make a complaint**

**8.4** (1) Any person may make a complaint to the complaints committee about a coroner, a pathologist or a person, other than a coroner or pathologist, with powers or duties under section 28. 2009, c. 15, s. 4.

#### **Form of complaint**

(2) The complaint must be in writing. 2009, c. 15, s. 4.

#### **Matters that may not be the subject of a complaint**

(3) A complaint about the following matters shall not be dealt with under this section:

1. A coroner's decision to hold an inquest or to not hold an inquest.
2. A coroner's decision respecting the scheduling of an inquest.
3. A coroner's decision relating to the conduct of an inquest, including a decision made while presiding at the inquest. 2009, c. 15, s. 4.

#### **Complaints about coroners**

(4) Subject to subsection (8), the complaints committee shall refer every complaint about a coroner, other than the Chief Coroner, to the Chief Coroner and the Chief Coroner shall review every such complaint. 2009, c. 15, s. 4.

#### **Complaints about pathologists**

(5) Subject to subsection (8), the complaints committee shall refer every complaint about a pathologist, other than the Chief Forensic Pathologist, to the Chief Forensic Pathologist and the Chief Forensic Pathologist shall review every such complaint. 2009, c. 15, s. 4.

#### **Complaints about Chiefs**

(6) Subject to subsection (8), the complaints committee shall review every complaint made about the Chief Coroner or the Chief Forensic Pathologist. 2009, c. 15, s. 4.

#### **Referral to other persons or bodies**

(7) The complaints committee shall refer every complaint about a person, other than a coroner or pathologist, with powers or duties under section 28 to a person or organization that has power to deal with the complaint and that the committee considers is the appropriate person or organization to deal with the complaint. 2009, c. 15, s. 4.

#### **Same**

(8) If the complaints committee is of the opinion that a complaint about a coroner or pathologist is more appropriately dealt with by the College of Physicians and Surgeons of Ontario or another person or organization that has power to deal with the complaint, the complaints committee shall refer the complaint to the College or that other person or organization. 2009, c. 15, s. 4.

#### **Notice of referral**

(9) If the complaints committee refers a complaint to the College of Physicians and Surgeons of Ontario or another person or organization under subsection (8), the committee shall promptly give notice in writing to the complainant, the coroner or pathologist who is the subject of the complaint, and the Oversight Council. 2009, c. 15, s. 4.

#### **Refusal to review a complaint**

(10) Despite subsections (4) and (5), the Chief Coroner and the Chief Forensic Pathologist may refuse to review a complaint referred to him or her if, in his or her opinion,

- (a) the complaint is trivial or vexatious or not made in good faith;
- (b) the complaint does not relate to a power or duty of a coroner or a pathologist under this Act; or
- (c) the complainant was not directly affected by the exercise or performance of, or the failure to exercise or perform, the power or duty to which the complaint relates. 2009, c. 15, s. 4.

**Same**

(11) Despite subsection (6), the complaints committee may refuse to review a complaint if, in its opinion,

- (a) the complaint is trivial or vexatious or not made in good faith;
- (b) the complaint does not relate to a power or duty of the Chief Coroner or the Chief Forensic Pathologist; or
- (c) the complainant was not directly affected by the exercise or performance of, or the failure to exercise or perform, the power or duty to which the complaint relates. 2009, c. 15, s. 4.

**Reports after review or decision to not review**

(12) The Chief Coroner and the Chief Forensic Pathologist shall, promptly after completing his or her review of a complaint referred to him or her or deciding to not review the complaint, report in writing to the complainant, the person who is the subject of the complaint and the complaints committee on the results of the review or the decision to not review the complaint, as the case may be. 2009, c. 15, s. 4.

**Same**

(13) The complaints committee shall, promptly after completing its review of a complaint or deciding to not review the complaint, report in writing to the complainant, the person who is the subject of the complaint, the Oversight Council and the Minister on the results of the review or the decision to not review the complaint, as the case may be. 2009, c. 15, s. 4.

**Request for review by complaints committee**

(14) If a complaint is made about a coroner or pathologist, other than the Chief Coroner or the Chief Forensic Pathologist, and the complainant or the coroner or pathologist who is the subject of the complaint is not satisfied with the results of the review of the complaint or the decision to not review the complaint by the Chief Coroner or the Chief Forensic Pathologist, he or she may request in writing that the complaints committee review the complaint and the complaints committee shall review the complaint and shall, promptly after completing its review or deciding to not review the complaint, report in writing to the complainant, the person who is the subject of the complaint and the Chief Coroner or the Chief Forensic Pathologist, as appropriate, on the results of the review or the decision to not review the complaint, as the case may be. 2009, c. 15, s. 4.

**Refusal to review a complaint on request**

(15) The complaints committee may refuse to review a complaint pursuant to a request made under subsection (14) if, in its opinion,

- (a) the complaint is trivial or vexatious or not made in good faith;
- (b) the complaint does not relate to a power or duty of a coroner or a pathologist under this Act; or
- (c) the complainant was not directly affected by the exercise or performance of, or the failure to exercise or perform, the power or duty to which the complaint relates. 2009, c. 15, s. 4.

**Annual reports to Oversight Council**

(16) The complaints committee shall submit an annual report on its activities to the Oversight Council at the end of each calendar year. 2009, c. 15, s. 4.

**Additional reports**

(17) The Oversight Council may request additional reports from the complaints committee on its activities or on a specific complaint or complaints about a specific person at any time and the complaints committee shall submit such reports as requested and may also submit additional reports as described at any time on its own initiative. 2009, c. 15, s. 4.

**Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 4 - 16/12/2010

### Police assistance

9 (1) The police force having jurisdiction in the locality in which a coroner has jurisdiction shall make available to the coroner the assistance of such police officers as are necessary for the purpose of carrying out the coroner's duties. 2009, c. 15, s. 5.

### Same

(2) The Chief Coroner in any case he or she considers appropriate may request that another police force or the criminal investigation branch of the Ontario Provincial Police provide assistance to a coroner in an investigation or inquest. 2009, c. 15, s. 5.

### Section Amendments with date in force (d/m/y)

2009, c. 15, s. 5 - 27/07/2009

### Duty to give information

10 (1) Every person who has reason to believe that a deceased person died,

- (a) as a result of,
  - (i) violence,
  - (ii) misadventure,
  - (iii) negligence,
  - (iv) misconduct, or
  - (v) malpractice;
- (b) by unfair means;
- (c) during pregnancy or following pregnancy in circumstances that might reasonably be attributable thereto;
- (d) suddenly and unexpectedly;
- (e) from disease or sickness for which he or she was not treated by a legally qualified medical practitioner;
- (f) from any cause other than disease; or
- (g) under such circumstances as may require investigation,

shall immediately notify a coroner or a police officer of the facts and circumstances relating to the death, and where a police officer is notified he or she shall in turn immediately notify the coroner of such facts and circumstances. R.S.O. 1990, c. C.37, s. 10 (1).

### Deaths to be reported

(2) Where a person dies while resident or an in-patient in,

- (a) REPEALED: 2007, c. 8, s. 201 (1).
- (b) a children's residence under Part IX (Licensing) of the *Child and Family Services Act* or premises approved under subsection 9 (1) of Part I (Flexible Services) of that Act;

Note: On a day to be named by proclamation of the Lieutenant Governor, clause 10 (2) (b) of the Act is repealed and the following substituted: (See: 2017, c. 14, Sched. 4, s. 8 (1))

- (b) a children's residence under Part IX (Residential Licensing) of the *Child, Youth and Family Services Act, 2017* or premises that had been approved under subsection 9 (1) of Part I (Flexible Services) of the *Child and Family Services Act*, as it read before its repeal;
- (c) REPEALED: 1994, c. 27, s. 136 (1).
- (d) a supported group living residence or an intensive support residence under the *Services and Supports to Promote the Social Inclusion of Persons with Developmental Disabilities Act, 2008*;
- (e) a psychiatric facility designated under the *Mental Health Act*;
- (f) REPEALED: 2009, c. 33, Sched. 18, s. 6.
- (g) REPEALED: 1994, c. 27, s. 136 (1).

- (h) a public or private hospital to which the person was transferred from a facility, institution or home referred to in clauses (a) to (g),

**Note:** On a day to be named by proclamation of the Lieutenant Governor, clause 10 (2) (h) of the Act is amended by striking out “public or private hospital” and substituting “hospital”. (See: 2017, c. 25, Sched. 9, s. 91 (1))

the person in charge of the hospital, facility, institution, residence or home shall immediately give notice of the death to a coroner, and the coroner shall investigate the circumstances of the death and, if as a result of the investigation he or she is of the opinion that an inquest ought to be held, the coroner shall hold an inquest upon the body. R.S.O. 1990, c. C.37, s. 10 (2); 1994, c. 27, s. 136 (1); 2001, c. 13, s. 10; 2007, c. 8, s. 201 (1); 2008, c. 14, s. 50; 2009, c. 15, s. 6 (1); 2009, c. 33, Sched. 8, s. 11; 2009, c. 33, Sched. 18, s. 6.

#### **Deaths in long-term care homes**

(2.1) Where a person dies while resident in a long-term care home to which the *Long-Term Care Homes Act, 2007* applies, the person in charge of the home shall immediately give notice of the death to a coroner and, if the coroner is of the opinion that the death ought to be investigated, he or she shall investigate the circumstances of the death and if, as a result of the investigation, he or she is of the opinion that an inquest ought to be held, the coroner shall hold an inquest upon the body. 2007, c. 8, s. 201 (2); 2009, c. 15, s. 6 (3).

#### **Deaths off premises of psychiatric facilities, correctional institutions, youth custody facilities**

(3) Where a person dies while,

- (a) a patient of a psychiatric facility;
- (b) committed to a correctional institution;
- (c) committed to a place of temporary detention under the *Youth Criminal Justice Act* (Canada); or
- (d) committed to secure or open custody under section 24.1 of the *Young Offenders Act* (Canada), whether in accordance with section 88 of the *Youth Criminal Justice Act* (Canada) or otherwise,

but while not on the premises or in actual custody of the facility, institution or place, as the case may be, subsection (2) applies as if the person were a resident of an institution named in subsection (2). 2009, c. 15, s. 6 (4).

#### **Death on premises of detention facility or lock-up**

(4) Where a person dies while detained in and on the premises of a detention facility established under section 16.1 of the *Police Services Act* or a lock-up, the officer in charge of the facility or lock-up shall immediately give notice of the death to a coroner and the coroner shall hold an inquest upon the body. 2009, c. 15, s. 6 (4).

#### **Death on premises of place of temporary detention**

(4.1) Where a person dies while committed to and on the premises of a place of temporary detention under the *Youth Criminal Justice Act* (Canada), the officer in charge of the place shall immediately give notice of the death to a coroner and the coroner shall hold an inquest upon the body. 2009, c. 15, s. 6 (4).

#### **Death on premises of place of secure custody**

(4.2) Where a person dies while committed to and on the premises of a place or facility designated as a place of secure custody under section 24.1 of the *Young Offenders Act* (Canada), whether in accordance with section 88 of the *Youth Criminal Justice Act* (Canada) or otherwise, the officer in charge of the place or facility shall immediately give notice of the death to a coroner and the coroner shall hold an inquest upon the body. 2009, c. 15, s. 6 (4).

#### **Death on premises of correctional institution**

(4.3) Where a person dies while committed to and on the premises of a correctional institution, the officer in charge of the institution shall immediately give notice of the death to a coroner and the coroner shall investigate the circumstances of the death and shall hold an inquest upon the body if as a result of the investigation he or she is of the opinion that the person may not have died of natural causes. 2009, c. 15, s. 6 (4).

#### **Non-application of subs. (4.3)**

(4.4) If a person dies in circumstances referred to in subsection (4), (4.1) or (4.2) on the premises of a lock-up, place of temporary detention or place or facility designated as a place of secure custody that is located in a correctional institution, subsection (4.3) does not apply. 2009, c. 15, s. 6 (4).

#### **Death in custody off premises of correctional institution**

(4.5) Where a person dies while committed to a correctional institution, while off the premises of the institution and while in the actual custody of a person employed at the institution, the officer in charge of the institution shall immediately give notice

of the death to a coroner and the coroner shall investigate the circumstances of the death and shall hold an inquest upon the body if as a result of the investigation he or she is of the opinion that the person may not have died of natural causes. 2009, c. 15, s. 6 (4).

#### **Other deaths in custody**

(4.6) If a person dies while detained by or in the actual custody of a peace officer and subsections (4), (4.1), (4.2), (4.3) and (4.5) do not apply, the peace officer shall immediately give notice of the death to a coroner and the coroner shall hold an inquest upon the body. 2009, c. 15, s. 6 (4).

#### **Death while restrained on premises of psychiatric facility, etc.**

(4.7) Where a person dies while being restrained and while detained in and on the premises of a psychiatric facility within the meaning of the *Mental Health Act* or a hospital within the meaning of Part XX.1 (Mental Disorder) of the *Criminal Code* (Canada), the officer in charge of the psychiatric facility or the person in charge of the hospital, as the case may be, shall immediately give notice of the death to a coroner and the coroner shall hold an inquest upon the body. 2009, c. 15, s. 6 (4).

#### **Death while restrained in secure treatment program**

(4.8) Where a person dies while being restrained and while committed or admitted to a secure treatment program within the meaning of Part VI of the *Child and Family Services Act*, the person in charge of the program shall immediately give notice of the death to a coroner and the coroner shall hold an inquest upon the body. 2009, c. 15, s. 6 (4).

**Note: On a day to be named by proclamation of the Lieutenant Governor, subsection 10 (4.8) of the Act is repealed and the following substituted: (See: 2017, c. 14, Sched. 4, s. 8 (2))**

#### **Death while restrained in secure treatment program**

(4.8) Where a person dies while being restrained and while committed or admitted to a secure treatment program within the meaning of Part VII of the *Child, Youth and Family Services Act, 2017*, the person in charge of the program shall immediately give notice of the death to a coroner and the coroner shall hold an inquest upon the body. 2017, c. 14, Sched. 4, s. 8 (2).

#### **Notice of death resulting from accident at or in construction project, mining plant or mine**

(5) Where a worker dies as a result of an accident occurring in the course of the worker's employment at or in a construction project, mining plant or mine, including a pit or quarry, the person in charge of such project, mining plant or mine shall immediately give notice of the death to a coroner and the coroner shall hold an inquest upon the body. R.S.O. 1990, c. C.37, s. 10 (5); 2009, c. 15, s. 6 (5).

#### **Certificate as evidence**

(6) A statement as to the notification or non-notification of a coroner under this section, purporting to be certified by the coroner is without proof of the appointment or signature of the coroner, receivable in evidence as proof, in the absence of evidence to the contrary of the facts stated therein for all purposes in any action, proceeding or prosecution. R.S.O. 1990, c. C.37, s. 10 (6).

**Note: On a day to be named by proclamation of the Lieutenant Governor, section 10 of the Act is amended by adding the following subsection: (See: 2017, c. 25, Sched. 9, s. 91 (2))**

#### **Definition**

(7) In this section,

“hospital” means a public hospital within the meaning of the *Public Hospitals Act* or a community health facility within the meaning of the *Oversight of Health Facilities and Devices Act, 2017* that was formerly licensed under the *Private Hospitals Act, 2017*, c. 25, Sched. 9, s. 91 (2).

#### **Section Amendments with date in force (d/m/y)**

1994, c. 27, s. 136 (1, 2) - 01/03/1995

2001, c. 13, s. 10 - 30/11/2001

2006, c. 19, Sched. D, s. 4 (1, 2) - 22/06/2006

2007, c. 8, s. 201 (1, 2) - 01/07/2010

2008, c. 14, s. 50 - 01/01/2011

2009, c. 15, s. 6 (1, 2, 4, 5) - 27/07/2009; 2009, c. 15, s. 6 (3) - 01/07/2010; 2009, c. 33, Sched. 8, s. 11 - 01/01/2011; 2009, c. 33, Sched. 18, s. 6 - 15/12/2009

2017, c. 14, Sched. 4, s. 8 (1, 2) - not in force; 2017, c. 25, Sched. 9, s. 91 (1, 2) - not in force

### **Medical assistance in dying**

**10.1** (1) Where a person dies as a result of medical assistance in dying, the physician or nurse practitioner who provided the medical assistance in dying shall give notice of the death to a coroner and, if the coroner is of the opinion that the death ought to be investigated, the coroner shall investigate the circumstances of the death and if, as a result of the investigation, the coroner is of the opinion that an inquest ought to be held, the coroner shall hold an inquest upon the body. 2017, c. 7, s. 1.

### **Requirements re giving of notice**

(2) The physician or nurse practitioner who provided the medical assistance in dying shall provide the coroner with any information about the facts and circumstances relating to the death that the coroner considers necessary to form an opinion about whether the death ought to be investigated, and any other person who has knowledge of the death shall provide such information on the request of the coroner. 2017, c. 7, s. 1.

### **Non-application of clause 10 (1) (f)**

(3) Clause 10 (1) (f) does not apply in respect of a deceased person who died as a result of medical assistance in dying. 2017, c. 7, s. 1.

### **Review**

(4) The Minister shall, within two years after the *Medical Assistance in Dying Statute Law Amendment Act, 2017* receives Royal Assent, establish a process to review the provisions of this section. 2017, c. 7, s. 1.

### **Definitions**

(5) In this section,

“medical assistance in dying” means medical assistance in dying within the meaning of section 241.1 of the *Criminal Code* (Canada); (“aide médicale à mourir”)

“nurse practitioner” means a registered nurse who holds an extended certificate of registration under the *Nursing Act, 1991*; (“infirmière praticienne ou infirmier praticien”)

“physician” means a member of the College of Physicians and Surgeons of Ontario. (“médecin”) 2017, c. 7, s. 1.

### **Section Amendments with date in force (d/m/y)**

2017, c. 7, s. 1 - 10/05/2017

### **Interference with body**

**11** No person who has reason to believe that a person died in any of the circumstances mentioned in section 10 shall interfere with or alter the body or its condition in any way until the coroner so directs by a warrant. R.S.O. 1990, c. C.37, s. 11.

### **Power of coroner to take charge of wreckage**

**12** (1) Where a coroner has issued a warrant to take possession of the body of a person who has met death by violence in a wreck, the coroner may, with the approval of the Chief Coroner, take charge of the wreckage and place one or more police officers in charge of it so as to prevent persons from disturbing it until the jury at the inquest has viewed it, or the coroner has made such examination as he or she considers necessary. R.S.O. 1990, c. C.37, s. 12 (1).

### **View to be expedited**

(2) The jury or coroner, as the case may be, shall view the wreckage at the earliest moment possible. R.S.O. 1990, c. C.37, s. 12 (2).

### **Shipment of bodies outside Ontario**

**13** (1) Subject to section 14, no person shall accept for shipment or ship or take a dead body from any place in Ontario to any place outside Ontario unless a certificate of a coroner has been obtained certifying that there exists no reason for further examination of the body. R.S.O. 1990, c. C.37, s. 13 (1).

### **Fee for certificate**

(2) An applicant for a certificate under subsection (1) shall pay to the coroner such fee as is prescribed therefor. R.S.O. 1990, c. C.37, s. 13 (2).

**Embalming, etc., prohibited**

(3) No person who has reason to believe that a dead body will be shipped or taken to a place outside Ontario shall embalm or make any alteration to the body or apply any chemical to the body, internally or externally, until the certificate required by subsection (1) has been issued. R.S.O. 1990, c. C.37, s. 13 (3).

**Transportation of a body out of Ontario for *post mortem***

14 A coroner may in writing authorize the transportation of a body out of Ontario for *post mortem* examination and, in such case a provision in any Act or regulation requiring embalming and preparation by a funeral director does not apply. R.S.O. 1990, c. C.37, s. 14.

**Coroner's investigation**

15 (1) Where a coroner is informed that there is in his or her jurisdiction the body of a person and that there is reason to believe that the person died in any of the circumstances mentioned in section 10, the coroner shall issue a warrant to take possession of the body and shall examine the body and make such investigation as, in the opinion of the coroner, is necessary in the public interest to enable the coroner,

- (a) to determine the answers to the questions set out in subsection 31 (1);
- (b) to determine whether or not an inquest is necessary; and
- (c) to collect and analyze information about the death in order to prevent further deaths in similar circumstances. 2009, c. 15, s. 7 (1).

**Idem**

(2) Where the Chief Coroner has reason to believe that a person died in any of the circumstances mentioned in section 10 and no warrant has been issued to take possession of the body, he or she may issue the warrant or direct any coroner to do so. R.S.O. 1990, c. C.37, s. 15 (2).

**Jurisdiction**

(3) After the issue of the warrant, no other coroner shall issue a warrant or interfere in the case, except the Chief Coroner. R.S.O. 1990, c. C.37, s. 15 (3); 2009, c. 15, s. 7 (2).

**Expert assistance**

(4) Subject to the approval of the Chief Coroner, a coroner may obtain assistance or retain expert services for all or any part of his or her investigation or inquest. R.S.O. 1990, c. C.37, s. 15 (4).

**No warrant**

(5) A coroner may proceed with an investigation without taking possession of the body where the body has been destroyed in whole or in part or is lying in a place from which it cannot be recovered or has been removed from Ontario. R.S.O. 1990, c. C.37, s. 15 (5).

**Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 7 (1, 2) - 27/07/2009

**Investigative powers**

16 (1) A coroner may,

- (a) examine or take possession of any dead body, or both; and
- (b) enter and inspect any place where a dead body is and any place from which the coroner has reasonable grounds for believing the body was removed. R.S.O. 1990, c. C.37, s. 16 (1); 2009, c. 15, s. 8.

**Idem**

(2) A coroner who believes on reasonable and probable grounds that to do so is necessary for the purposes of the investigation may,

- (a) inspect any place in which the deceased person was, or in which the coroner has reasonable grounds to believe the deceased person was, prior to his or her death;
- (b) inspect and extract information from any records or writings relating to the deceased or his or her circumstances and reproduce such copies therefrom as the coroner believes necessary;

- (c) seize anything that the coroner has reasonable grounds to believe is material to the purposes of the investigation. R.S.O. 1990, c. C.37, s. 16 (2).

#### **Delegation of powers**

- (3) A coroner may authorize a legally qualified medical practitioner or a police officer to exercise all or any of the coroner's powers under subsection (1). R.S.O. 1990, c. C.37, s. 16 (3).

#### **Idem**

- (4) A coroner may, where in his or her opinion it is necessary for the purposes of the investigation, authorize a legally qualified medical practitioner or a police officer to exercise all or any of the coroner's powers under clauses (2) (a), (b) and (c) but, where such power is conditional on the belief of the coroner, the requisite belief shall be that of the coroner personally. R.S.O. 1990, c. C.37, s. 16 (4).

#### **Return of things seized**

- (5) Where a coroner seizes anything under clause (2) (c), he or she shall place it in the custody of a police officer for safekeeping and shall return it to the person from whom it was seized as soon as is practicable after the conclusion of the investigation or, where there is an inquest, of the inquest, unless the coroner is authorized or required by law to dispose of it otherwise. R.S.O. 1990, c. C.37, s. 16 (5).

#### **Obstruction of coroner**

- (6) No person shall knowingly,

- (a) hinder, obstruct or interfere with or attempt to hinder, obstruct or interfere with; or
- (b) furnish with false information or refuse or neglect to furnish information to,

a coroner in the performance of his or her duties or a person authorized by the coroner in connection with an investigation. R.S.O. 1990, c. C.37, s. 16 (6).

#### **Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 8 - 27/07/2009

#### **Appointment of persons with coroners' investigative powers and duties**

- 16.1** (1) The Chief Coroner may appoint any person, in accordance with the regulations, to exercise the investigative powers and duties of a coroner. 2009, c. 15, s. 9.

#### **Same**

- (2) Subject to subsection (3) and the regulations, this Act applies with necessary modifications to a person appointed under subsection (1) as if he or she were a coroner. 2009, c. 15, s. 9.

#### **Limitation**

- (3) A person appointed under subsection (1) cannot determine whether or not an inquest is necessary or hold an inquest. 2009, c. 15, s. 9.

#### **Report**

- (4) A person appointed under subsection (1) shall report his or her findings to the Chief Coroner or a coroner specified by the Chief Coroner, who shall then determine whether or not an inquest is necessary. 2009, c. 15, s. 9.

#### **Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 9 - 27/07/2009

#### **Transfer of investigation**

- 17** (1) A coroner may at any time transfer an investigation to another coroner where in his or her opinion the investigation may be continued or conducted more conveniently by that other coroner or for any other good and sufficient reason. R.S.O. 1990, c. C.37, s. 17 (1).

#### **Investigation and inquest**

- (2) The coroner to whom an investigation is transferred shall proceed with the investigation in the same manner as if he or she had issued the warrant to take possession of the body. R.S.O. 1990, c. C.37, s. 17 (2).

### **Notification of Chief Coroner**

(3) The coroner who transfers an investigation to another coroner shall notify the Chief Coroner of the transfer, and the Chief Coroner shall assist in the transfer upon request. R.S.O. 1990, c. C.37, s. 17 (3).

### **Transmitting results of first investigation**

(4) The coroner who transfers an investigation to another coroner shall transmit to that other coroner the report of the *post mortem* examination of the body, if any, and his or her signed statement setting forth briefly the result of his or her investigation and any evidence to prove the fact of death and the identity of the body. R.S.O. 1990, c. C.37, s. 17 (4).

### **Inquest unnecessary**

**18** (1) Where the coroner determines that an inquest is unnecessary, the coroner shall forthwith transmit to the Chief Coroner a signed statement setting forth briefly the results of the investigation, and shall also forthwith transmit to the division registrar a notice of the death in the form prescribed by the *Vital Statistics Act*. 2009, c. 15, s. 10.

### **Recommendations**

(2) The coroner may make recommendations to the Chief Coroner with respect to the prevention of deaths in circumstances similar to those of the death that was the subject of the coroner's investigation. 2009, c. 15, s. 10.

### **Disclosure to the public**

(3) The Chief Coroner shall bring the findings and recommendations of a coroner's investigation, which may include personal information as defined in the *Freedom of Information and Protection of Privacy Act*, to the attention of the public, or any segment of the public, if the Chief Coroner reasonably believes that it is necessary in the interests of public safety to do so. 2009, c. 15, s. 10.

### **Record of investigations**

(4) Every coroner shall keep a record of the cases reported in which an inquest has been determined to be unnecessary, showing for each case the coroner's findings of facts to determine the answers to the questions set out in subsection 31 (1), and such findings, including the relevant findings of the *post mortem* examination and of any other examinations or analyses of the body carried out, shall be available to the spouse, parents, children, brothers and sisters of the deceased and to his or her personal representative, upon request. 2009, c. 15, s. 10.

### **Section Amendments with date in force (d/m/y)**

1999, c. 6, s. 15 (2) - 01/03/2000

2005, c. 5, s. 15 (3) - 09/03/2005

2009, c. 15, s. 10 - 27/07/2009

### **Coroner's report if death suspected not of natural causes**

**18.1** If the coroner is of the opinion, based on his or her investigation, that the deceased person may not have died of natural causes, the coroner shall advise the regional coroner of that opinion and the regional coroner shall so advise the Crown Attorney. 2009, c. 15, s. 11.

### **Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 11 - 27/07/2009

### **Determination to hold an inquest**

**19** Where the coroner determines that an inquest is necessary, the coroner shall,

- (a) forthwith notify the Chief Coroner of that determination and give the Chief Coroner a brief summary of the results of the investigation and of the grounds upon which the coroner made that determination; and
- (b) hold an inquest. 2009, c. 15, s. 12.

### **Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 12 - 27/07/2009

### **What coroner shall consider and have regard to**

**20** When making a determination whether an inquest is necessary or unnecessary, the coroner shall have regard to whether the holding of an inquest would serve the public interest and, without restricting the generality of the foregoing, shall consider,

- (a) whether the matters described in clauses 31 (1) (a) to (e) are known;
- (b) the desirability of the public being fully informed of the circumstances of the death through an inquest; and
- (c) the likelihood that the jury on an inquest might make useful recommendations directed to the avoidance of death in similar circumstances. R.S.O. 1990, c. C.37, s. 20.

**Where body destroyed or removed from Ontario**

**21** Where a coroner has reason to believe that a death has occurred in circumstances that warrant the holding of an inquest but, owing to the destruction of the body in whole or in part or to the fact that the body is lying in a place from which it cannot be recovered, or that the body has been removed from Ontario, an inquest cannot be held except by virtue of this section, he or she shall report the facts to the Chief Coroner who may direct an inquest to be held touching the death, in which case an inquest shall be held by the coroner making the report or by such other coroner as the Chief Coroner directs, and the law relating to coroners and coroners' inquests applies with such modifications as are necessary in consequence of the inquest being held otherwise than on or after a view of the body. R.S.O. 1990, c. C.37, s. 21.

**22 REPEALED:** 2009, c. 15, s. 13.

**Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 13 - 27/07/2009

**Inquest mandatory**

**22.1** A coroner shall hold an inquest under this Act into the death of a child upon learning that the child died in the circumstances described in clauses 72.2 (a), (b) and (c) of the *Child and Family Services Act*. 2006, c. 24, s. 2 (1).

**Note:** On a day to be named by proclamation of the Lieutenant Governor, section 22.1 of the Act is repealed and the following substituted: (See: 2017, c. 14, Sched. 4, s. 8 (3))

**Inquest mandatory**

**22.1** A coroner shall hold an inquest under this Act into the death of a child upon learning that the child died in the circumstances described in clauses 128 (a), (b) and (c) of the *Child, Youth and Family Services Act, 2017*. 2017, c. 14, Sched. 4, s. 8 (3).

**Section Amendments with date in force (d/m/y)**

2006, c. 24, s. 2 (1) - 19/10/2006

2017, c. 14, Sched. 4, s. 8 (3) - not in force

**23 REPEALED:** 2009, c. 15, s. 14.

**Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 14 - 27/07/2009

**Chief Coroner may direct that body be disinterred**

**24** Despite anything in the *Funeral, Burial and Cremation Services Act, 2002* or a regulation made under that Act, the Chief Coroner may, at any time where he or she considers it necessary for the purposes of an investigation or an inquest, direct that a body be disinterred under and subject to such conditions as the Chief Coroner considers proper. R.S.O. 1990, c. C.37, s. 24; 2002, c. 33, s. 142; 2009, c. 15, s. 15.

**Section Amendments with date in force (d/m/y)**

2002, c. 33, s. 142 - 01/07/2012

2009, c. 15, s. 15 - 27/07/2009

**Direction by Chief Coroner**

**25 (1)** The Chief Coroner may direct any coroner in respect of any death to issue a warrant to take possession of the body, conduct an investigation or hold an inquest, or may direct any other coroner to do so or may intervene to act as coroner personally for any one or more of such purposes. R.S.O. 1990, c. C.37, s. 25 (1).

**Inquest into multiple deaths**

(2) Where two or more deaths appear to have occurred in the same event or from a common cause, the Chief Coroner may direct that one inquest be held into all of the deaths. R.S.O. 1990, c. C.37, s. 25 (2).

### **Direction to replace coroner**

(3) If the Chief Coroner is of the opinion that a coroner is unable to continue presiding over an inquest for any reason, the Chief Coroner may direct another coroner to continue the inquest. 1994, c. 27, s. 136 (3).

### **Section Amendments with date in force (d/m/y)**

1994, c. 27, s. 136 (3) - 09/12/1994

### **Request by relative for inquest**

26 (1) Where the coroner determines that an inquest is unnecessary, the spouse, parent, child, brother, sister or personal representative of the deceased person may request the coroner in writing to hold an inquest, and the coroner shall give the person requesting the inquest an opportunity to state his or her reasons, either personally, by the person's agent or in writing, and the coroner shall advise the person in writing within sixty days of the receipt of the request of the coroner's final decision and where the decision is to not hold an inquest shall deliver the reasons therefor in writing. R.S.O. 1990, c. C.37, s. 26 (1); 1999, c. 6, s. 15 (3); 2005, c. 5, s. 15 (4).

### **Review of refusal**

(2) Where the final decision of a coroner under subsection (1) is to not hold an inquest, the person making the request may, within twenty days after the receipt of the decision of the coroner, request the Chief Coroner to review the decision and the Chief Coroner shall review the decision of the coroner after giving the person requesting the inquest an opportunity to state his or her reasons either personally, by the person's agent or in writing. R.S.O. 1990, c. C.37, s. 26 (2).

### **Decision final**

(3) The decision of the Chief Coroner is final. R.S.O. 1990, c. C.37, s. 26 (3); 2009, c. 15, s. 16.

### **Section Amendments with date in force (d/m/y)**

1999, c. 6, s. 15 (3) - 01/03/2000

2005, c. 5, s. 15 (4) - 09/03/2005

2009, c. 15, s. 16 - 27/07/2009

### **Where criminal offence charged**

27 (1) Where a person is charged with an offence under the *Criminal Code* (Canada) arising out of a death, an inquest touching the death shall be held only upon the direction of the Chief Coroner and, when held, the person charged is not a compellable witness. R.S.O. 1990, c. C.37, s. 27 (1); 2009, c. 15, s. 17 (1).

### **Idem**

(2) Where during an inquest a person is charged with an offence under the *Criminal Code* (Canada) arising out of the death, the coroner shall discharge the jury and close the inquest, and shall then proceed as if he or she had determined that an inquest was unnecessary, but the Chief Coroner may direct that the inquest be reopened. R.S.O. 1990, c. C.37, s. 27 (2); 2009, c. 15, s. 17 (2).

### **Where charge or appeal finally disposed of**

(3) Despite subsections (1) and (2), where a person is charged with an offence under the *Criminal Code* (Canada) arising out of the death and the charge or any appeal from a conviction or an acquittal of the offence charged has been finally disposed of or the time for taking an appeal has expired, the coroner may hold an inquest and the person charged is a compellable witness at the inquest. R.S.O. 1990, c. C.37, s. 27 (3); 2009, c. 15, s. 17 (3).

### **Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 17 (1-3) - 27/07/2009

### **Post mortem examination**

28 (1) A coroner may at any time during an investigation issue a warrant for a pathologist to perform a *post mortem* examination of the body. 2009, c. 15, s. 18.

### **Other examinations and analyses**

(2) A coroner may at any time during an investigation conduct examinations and analyses that the coroner considers appropriate in the circumstances or direct any person, other than the pathologist to whom the warrant is issued, to conduct such examinations and analyses. 2009, c. 15, s. 18.

### **Pathologist's duty**

(3) The pathologist to whom the warrant is issued shall perform the *post mortem* examination of the body. 2009, c. 15, s. 18.

### **Power to examine body**

(4) The pathologist to whom the warrant is issued or, if no warrant has been issued, a pathologist who has been notified of the death by a coroner or police officer and who reasonably believes that a coroner's warrant will be issued to him or her under subsection (1) may,

- (a) enter and inspect any place where the dead body is and examine the body; and
- (b) enter and inspect any place from which the pathologist has reasonable grounds for believing the body was removed. 2009, c. 15, s. 18.

### **Notice to coroner**

(5) A pathologist who exercises a power under subsection (4) shall notify,

- (a) the coroner who issued the warrant; or
- (b) if no warrant has been issued, the coroner by whom the pathologist believes the warrant will be issued. 2009, c. 15, s. 18.

### **Other examinations and analyses**

(6) The pathologist who performs the *post mortem* examination may conduct or direct any person other than a coroner to conduct such other examinations and analyses as he or she considers appropriate in the circumstances. 2009, c. 15, s. 18.

### **Direction of Chief Forensic Pathologist**

(7) The Chief Forensic Pathologist may direct a pathologist or any other person, other than a coroner, to conduct any examinations and analyses that the Chief Forensic Pathologist considers appropriate in the circumstances. 2009, c. 15, s. 18.

### **Assistance**

(8) The pathologist who performs the *post mortem* examination may obtain the assistance of any person or persons in performing the *post mortem* examination and in conducting any other examinations and analyses. 2009, c. 15, s. 18.

### **Pathologist from register**

(9) The coroner may issue a warrant under subsection (1) only to a pathologist whose name is on the pathologists register. 2009, c. 15, s. 18.

### **Assignment to another pathologist**

(10) The Chief Forensic Pathologist may at any time during an investigation assign another pathologist whose name is on the pathologists register to perform the *post mortem* examination in place of the pathologist named on the coroner's warrant, and in that case, every reference in this section to the pathologist to whom the warrant is issued applies to the pathologist assigned to the investigation by the Chief Forensic Pathologist. 2009, c. 15, s. 18.

### **Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 18 - 27/07/2009

### **Reports of *post mortem* findings**

29 (1) The pathologist who performed the *post mortem* examination of a body under section 28 shall forthwith report in writing his or her findings from the *post mortem* examination and from any other examinations or analyses that he or she conducted to the coroner who issued the warrant, the regional coroner and, if the pathologist who performed the *post mortem* examination is not the Chief Forensic Pathologist, the Chief Forensic Pathologist. 2009, c. 15, s. 18.

### **Same**

(2) A person, other than the pathologist who performed the *post mortem* examination, who conducted any other examination or analysis under section 28 shall forthwith report his or her findings in writing to the pathologist who performed the *post mortem* examination, the coroner who issued the warrant, the regional coroner and, if the pathologist who performed the *post mortem* examination is not the Chief Forensic Pathologist, the Chief Forensic Pathologist. 2009, c. 15, s. 18.

### **Further *post mortem*s**

(3) If, after a *post mortem* examination of a body is performed, the Chief Forensic Pathologist is of the opinion that a second or further *post mortem* examination of the body is necessary, he or she shall so advise the Chief Coroner, and the Chief Coroner shall issue a warrant for a second or further *post mortem* examination of the body. 2009, c. 15, s. 18.

**Section Amendments with date in force (d/m/y)**

1999, c. 6, s. 15 (4) - 01/03/2000

2005, c. 5, s. 15 (5) - 09/03/2005

2009, c. 15, s. 18 - 27/07/2009

**Crown counsel**

**30** (1) Every coroner before holding an inquest shall notify the Crown Attorney of the time and place at which it is to be held and the Crown Attorney or a barrister and solicitor or any other person designated by him or her shall attend the inquest and shall act as counsel to the coroner at the inquest. R.S.O. 1990, c. C.37, s. 30 (1).

**Counsel for Minister**

(2) The Minister may be represented at an inquest by counsel and shall be deemed to be a person with standing at the inquest for the purpose. R.S.O. 1990, c. C.37, s. 30 (2).

**Purposes of inquest**

**31** (1) Where an inquest is held, it shall inquire into the circumstances of the death and determine,

- (a) who the deceased was;
- (b) how the deceased came to his or her death;
- (c) when the deceased came to his or her death;
- (d) where the deceased came to his or her death; and
- (e) by what means the deceased came to his or her death. R.S.O. 1990, c. C.37, s. 31 (1).

**Idem**

(2) The jury shall not make any finding of legal responsibility or express any conclusion of law on any matter referred to in subsection (1). R.S.O. 1990, c. C.37, s. 31 (2).

**Authority of jury to make recommendations**

(3) Subject to subsection (2), the jury may make recommendations directed to the avoidance of death in similar circumstances or respecting any other matter arising out of the inquest. R.S.O. 1990, c. C.37, s. 31 (3).

**Improper finding**

(4) A finding that contravenes subsection (2) is improper and shall not be received. R.S.O. 1990, c. C.37, s. 31 (4).

**Failure to make proper finding**

(5) Where a jury fails to deliver a proper finding it shall be discharged. R.S.O. 1990, c. C.37, s. 31 (5).

**Inquest public**

**32** An inquest shall be open to the public except where the coroner is of the opinion that national security might be endangered or where a person is charged with an indictable offence under the *Criminal Code* (Canada) in which cases the coroner may hold the hearing concerning any such matters in the absence of the public. R.S.O. 1990, c. C.37, s. 32.

**Juries**

**33** (1) Every inquest shall be held with a jury composed of five persons. R.S.O. 1990, c. C.37, s. 33 (1); 2009, c. 15, s. 19 (1).

**Jurors**

(2) The coroner shall direct a constable to select from the list of names of persons provided under subsection 34 (2) five persons who in his or her opinion are suitable to serve as jurors at an inquest and the constable shall summon them to attend the inquest at the time and place appointed. R.S.O. 1990, c. C.37, s. 33 (2).

**Idem**

(3) Where fewer than five of the jurors so summoned attend at the inquest, the coroner may name and appoint so many persons then present or who can be found as will make up a jury of five. R.S.O. 1990, c. C.37, s. 33 (3).

(4) REPEALED: 2009, c. 15, s. 19 (2).

**Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 19 (1, 2) - 27/07/2009

#### **List of jurors**

**34** (1) A coroner may by his or her warrant require the sheriff for the area in which an inquest is to be held to provide a list of the names of such number of persons as the coroner specifies in the warrant taken from the jury roll prepared under the *Juries Act*. R.S.O. 1990, c. C.37, s. 34 (1).

#### **Idem**

(2) Upon receipt of the warrant, the sheriff shall provide the list containing names of persons in the number specified by the coroner, taken from the jury roll prepared under the *Juries Act*, together with their ages, places of residence and occupations. R.S.O. 1990, c. C.37, s. 34 (2).

#### **Eligibility**

(3) No person who is ineligible to serve as a juror under the *Juries Act* shall be summoned to serve or shall serve as a juror at an inquest. R.S.O. 1990, c. C.37, s. 34 (3).

#### **Idem**

(4) An officer, employee or inmate of a hospital or an institution referred to in subsection 10 (2) or (3) shall not serve as a juror at an inquest upon the death of a person who died therein. R.S.O. 1990, c. C.37, s. 34 (4).

#### **Excusing from service**

(5) The coroner may excuse any person on the list from being summoned or from serving as a juror on the grounds of illness or hardship. R.S.O. 1990, c. C.37, s. 34 (5).

#### **Exclusion of juror with interest**

(6) The coroner presiding at an inquest may exclude a person from being sworn as a juror where the coroner believes there is a likelihood that the person, because of interest or bias, would be unable to render a verdict in accordance with the evidence. R.S.O. 1990, c. C.37, s. 34 (6).

#### **Excusing of juror for illness**

(7) Where in the course of an inquest the coroner is satisfied that a juror should not, because of illness or other reasonable cause, continue to act, the coroner may discharge the juror. R.S.O. 1990, c. C.37, s. 34 (7).

#### **Continuation with reduced jury**

(8) Where in the course of an inquest a member of the jury dies or becomes incapacitated from any cause or is excluded or discharged by the coroner under subsection (6) or (7) or is found to be ineligible to serve, the jury shall, unless the coroner otherwise directs and if the number of jurors is not reduced below three, be deemed to remain properly constituted for all purposes of the inquest. R.S.O. 1990, c. C.37, s. 34 (8).

#### **Report to sheriff re jury service**

**35** On or before the 31st day of December in each year, the coroner shall advise the sheriff of the names of persons who have received fees for service as jurors at inquests and the number of each such name on the jury roll. R.S.O. 1990, c. C.37, s. 35.

#### **Jury irregularities not to affect outcome**

**36** The omission to observe any of the provisions of this Act or the regulations respecting the eligibility and selection of jurors is not a ground for impeaching or quashing a verdict. R.S.O. 1990, c. C.37, s. 36.

#### **Jury's duties, powers**

##### **View of place**

**37** (1) The jury shall view any place that the coroner directs them to view. 2009, c. 15, s. 20.

##### **Questions**

(2) The jurors are entitled to ask relevant questions of each witness. R.S.O. 1990, c. C.37, s. 37 (2).

##### **Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 20 - 27/07/2009

##### **Majority verdict**

**38** A verdict or finding may be returned by a majority of the jurors sworn. R.S.O. 1990, c. C.37, s. 38.

### **Service of summonses**

**39** A summons to a juror or to a witness may be served,

- (a) by personal service;
- (b) by leaving a copy, in a sealed envelope addressed to the person summoned, at his or her place of residence with anyone who appears to be an adult member of the same household; or
- (c) by sending it by registered mail addressed to the place of residence of the person summoned. 2009, c. 15, s. 21.

### **Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 21 - 27/07/2009

### **Summonses**

**40** (1) A coroner may require any person by summons,

- (a) to give evidence on oath or affirmation at an inquest; and
- (b) to produce in evidence at an inquest documents and things specified by the coroner, relevant to the subject-matter of the inquest and admissible. R.S.O. 1990, c. C.37, s. 40 (1).

### **Form and service of summonses**

(2) A summons issued under subsection (1) shall be in the form approved by the Minister and shall be signed by the coroner. 2009, c. 15, s. 22.

### **Bench warrants**

(3) Upon proof to the satisfaction of a judge of the Superior Court of Justice of the service of a summons under this section upon a person and that,

- (a) such person has failed to attend or to remain in attendance at an inquest in accordance with the requirements of the summons; and
- (b) the person's presence is material to the inquest,

the judge may, by a warrant in the prescribed form, directed to any police officer, cause such witness to be apprehended anywhere within Ontario and forthwith to be brought to the inquest and to be detained in custody as the judge may order until the person's presence as a witness at the inquest is no longer required, or, in the discretion of the judge, to be released on a recognizance (with or without sureties) conditioned for appearance to give evidence. R.S.O. 1990, c. C.37, s. 40 (3); 1997, c. 39, s. 4 (2); 2006, c. 19, Sched. C, s. 1 (1); 2009, c. 33, Sched. 9, s. 3 (1).

### **Proof of service**

(4) Service of a summons may be proved by affidavit in an application under subsection (3). R.S.O. 1990, c. C.37, s. 40 (4).

### **Certificate of facts**

(5) Where an application under subsection (3) is made on behalf of a coroner, the coroner may certify to the judge the facts relied on to establish that the presence of the person summoned is material for the purposes of the inquest and such certificate may be accepted by the judge as proof of such facts. R.S.O. 1990, c. C.37, s. 40 (5).

### **Section Amendments with date in force (d/m/y)**

1997, c. 39, s. 4 (1, 2) - 30/04/1999

2006, c. 19, Sched. C, s. 1 (1) - 22/06/2006

2009, c. 15, s. 22 - 27/07/2009; 2009, c. 33, Sched. 9, s. 3 (1) - 15/12/2009

### **Persons with standing at inquest**

**41** (1) On the application of any person before or during an inquest, the coroner shall designate the person as a person with standing at the inquest if the coroner finds that the person is substantially and directly interested in the inquest. R.S.O. 1990, c. C.37, s. 41 (1); 1993, c. 27, Sched.; 1999, c. 12, Sched. P, s. 2.

### **Rights of persons with standing at inquest**

(2) A person designated as a person with standing at an inquest may,

- (a) be represented by a person authorized under the *Law Society Act* to represent the person with standing;

- (b) call and examine witnesses and present arguments and submissions;
- (c) conduct cross-examinations of witnesses at the inquest relevant to the interest of the person with standing and admissible. R.S.O. 1990, c. C.37, s. 41 (2); 2006, c. 21, Sched. C, s. 104 (1).

#### **Costs of representation**

(3) If the coroner in an inquest into the death of a victim as defined in the *Victims' Bill of Rights, 1995* designates a spouse, same-sex partner or parent of the victim as a person with standing at the inquest, the person may apply to the Minister to have the costs that the person incurs for representation by legal counsel in connection with the inquest paid out of the victims' justice fund account continued under subsection 5 (1) of the *Victims' Bill of Rights, 1995*. 2006, c. 24, s. 2 (2).

#### **Payment**

(4) Subject to the approval of Management Board of Cabinet, payment of the costs described in subsection (3) may be made out of the victims' justice fund account. 2006, c. 24, s. 2 (2).

#### **Section Amendments with date in force (d/m/y)**

1993, c. 27, Sched.- 31/12/1991; 1999, c. 12, Sched. P, s. 2 - 04/02/2000

2006, c. 21, Sched. C, s. 104 (1) - 01/05/2007; 2006, c. 24, s. 2 (2) - 19/10/2006

#### **Protection for witnesses**

42 (1) A witness at an inquest shall be deemed to have objected to answer any question asked the witness upon the ground that his or her answer may tend to criminate the witness or may tend to establish his or her liability to civil proceedings at the instance of the Crown, or of any person, and no answer given by a witness at an inquest shall be used or be receivable in evidence against the witness in any trial or other proceedings against him or her thereafter taking place, other than a prosecution for perjury in giving such evidence. R.S.O. 1990, c. C.37, s. 42 (1).

#### **Right to object under *Canada Evidence Act***

(2) Where it appears at any stage of the inquest that the evidence that a witness is about to give would tend to criminate the witness, it is the duty of the coroner and of the Crown Attorney to ensure that the witness is informed of his or her rights under section 5 of the *Canada Evidence Act*. R.S.O. 1990, c. C.37, s. 42 (2).

#### **Rights of witnesses to representation**

43 (1) A witness at an inquest is entitled to be advised as to his or her rights by a person authorized under the *Law Society Act* to advise him or her, but such person may take no other part in the inquest without leave of the coroner. 2006, c. 21, Sched. C, s. 104 (2).

#### **Same**

(2) Where an inquest is held in the absence of the public, a person advising a witness under subsection (1) is not entitled to be present except when that witness is giving evidence. 2006, c. 21, Sched. C, s. 104 (2).

#### **Section Amendments with date in force (d/m/y)**

2006, c. 21, Sched. C, s. 104 (2) - 01/05/2007

#### **Admissibility of evidence**

##### **What is admissible in evidence at inquest**

44 (1) Subject to subsections (2) and (3), a coroner may admit as evidence at an inquest, whether or not admissible as evidence in a court,

- (a) any oral testimony; and
- (b) any document or other thing,

relevant to the purposes of the inquest and may act on such evidence, but the coroner may exclude anything unduly repetitious or anything that the coroner considers does not meet such standards of proof as are commonly relied on by reasonably prudent persons in the conduct of their own affairs and the coroner may comment on the weight that ought to be given to any particular evidence. R.S.O. 1990, c. C.37, s. 44 (1).

##### **What is inadmissible in evidence at inquest**

(2) Nothing is admissible in evidence at an inquest,

- (a) that would be inadmissible in a court by reason of any privilege under the law of evidence; or

(b) that is inadmissible by the statute under which the proceedings arise or any other statute. R.S.O. 1990, c. C.37, s. 44 (2).

#### **Conflicts**

(3) Nothing in subsection (1) overrides the provisions of any Act expressly limiting the extent to or purposes for which any oral testimony, documents or things may be admitted or used in evidence. R.S.O. 1990, c. C.37, s. 44 (3).

#### **Copies**

(4) Where the coroner is satisfied as to their authenticity, a copy of a document or other thing may be admitted as evidence at an inquest. R.S.O. 1990, c. C.37, s. 44 (4).

#### **Photocopies**

(5) Where a document has been filed in evidence at an inquest, the coroner may, or the person producing it or entitled to it may with the leave of the coroner, cause the document to be photocopied and the coroner may authorize the photocopy to be filed in evidence in the place of the document filed and release the document filed, or may furnish to the person producing it or the person entitled to it a photocopy of the document filed certified by the coroner. R.S.O. 1990, c. C.37, s. 44 (5).

#### **Taking evidence**

45 (1) The evidence upon an inquest or any part of it shall be recorded by a person appointed by the coroner and approved by the Crown Attorney and who before acting shall make oath or affirmation that he or she will truly and faithfully record the evidence. R.S.O. 1990, c. C.37, s. 45 (1).

#### **Transcription of evidence**

(2) It is not necessary to transcribe the evidence unless the Chief Coroner or Crown Attorney orders it to be done or unless any other person requests a copy of the transcript and pays the fees therefor except that the coroner may prohibit the transcribing of all or any part of evidence taken in the absence of the public. R.S.O. 1990, c. C.37, s. 45 (2); 2009, c. 15, s. 23.

#### **Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 23 - 27/07/2009

#### **Adjournments**

46 An inquest may be adjourned from time to time by the coroner of his or her own motion or where it is shown to the satisfaction of the coroner that the adjournment is required to permit an adequate hearing to be held. R.S.O. 1990, c. C.37, s. 46.

#### **Maintenance of order at inquest**

47 A coroner may make such orders or give such directions at an inquest as he or she considers necessary for the maintenance of order at the inquest, and, if any person disobeys or fails to comply with any such order or direction, the coroner may call for the assistance of any peace officer to enforce the order or direction, and every peace officer so called upon shall take such action as is necessary to enforce the order or direction and may use such force as is reasonably required for that purpose. R.S.O. 1990, c. C.37, s. 47.

#### **Interpreters and constables**

##### **Interpreters**

48 (1) A coroner may, and if required by the Crown Attorney or requested by the witness shall, employ a person to act as interpreter for a witness at an inquest, and such person may be summoned to attend the inquest and before acting shall make oath or affirm that he or she will truly and faithfully translate the evidence. R.S.O. 1990, c. C.37, s. 48 (1).

##### **Constables**

(2) A coroner may appoint such persons as constables as the coroner considers necessary for the purpose of assisting the coroner in an inquest and, on the request of the coroner, the police force having jurisdiction in the locality in which an inquest is held shall provide a police officer for the purpose and, before acting, every such constable shall take oath or affirm that he or she will faithfully perform his or her duties. R.S.O. 1990, c. C.37, s. 48 (2).

##### **Administration of oaths**

49 The coroner conducting an inquest has power to administer oaths and affirmations for the purpose of the inquest. R.S.O. 1990, c. C.37, s. 49.

## **Further powers of coroner**

### **Abuse of processes**

50 (1) A coroner may make such orders or give such directions at an inquest as the coroner considers proper to prevent abuse of its processes. R.S.O. 1990, c. C.37, s. 50 (1).

### **Limitation on cross-examination**

(2) A coroner may reasonably limit further cross-examination of a witness where the coroner is satisfied that the cross-examination of the witness has been sufficient to disclose fully and fairly the facts in relation to which the witness has given evidence or where the coroner is of the opinion that the questions being asked are irrelevant, unduly repetitious or abusive. 2009, c. 15, s. 24.

### **Exclusion of representatives**

(3) A coroner may exclude from a hearing anyone, other than a person licensed under the *Law Society Act*, advising a witness if the coroner finds that such person is not competent properly to advise the witness, or does not understand and comply at the inquest with the duties and responsibilities of an adviser. 2006, c. 21, Sched. C, s. 104 (3).

### **Section Amendments with date in force (d/m/y)**

2006, c. 21, Sched. C, s. 104 (3) - 01/05/2007

2009, c. 15, s. 24 - 27/07/2009

### **Rules of procedure for inquests**

50.1 The Chief Coroner may make additional rules of procedure for inquests. 2009, c. 15, s. 25.

### **Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 25 - 27/07/2009

### **Contempt proceedings**

51 Where any person without lawful excuse,

- (a) on being duly summoned as a witness or a juror at an inquest makes default in attending at the inquest; or
- (b) being in attendance as a witness at an inquest, refuses to take an oath or to make an affirmation legally required by the coroner to be taken or made, or to produce any document or thing in his or her power or control legally required by the coroner to be produced by the person or to answer any question to which the coroner may legally require an answer; or
- (c) does any other thing that would, if the inquest had been a court of law having power to commit for contempt, have been contempt of that court,

the coroner may state a case to the Divisional Court setting out the facts and that court may, on application on behalf of and in the name of the coroner, inquire into the matter and, after hearing any witnesses who may be produced against or on behalf of that person and after hearing any statement that may be offered in defence, punish or take steps for the punishment of that person in like manner as if he or she had been guilty of contempt of the court. R.S.O. 1990, c. C.37, s. 51.

### **Conclusion of inquest**

#### **Return of verdict**

52 (1) The coroner shall forthwith after an inquest return the verdict or finding, with the evidence where the Crown Attorney or Chief Coroner has ordered it to be transcribed, to the Chief Coroner, and shall transmit a copy of the verdict and recommendations to the Crown Attorney. R.S.O. 1990, c. C.37, s. 52 (1); 2009, c. 15, s. 26.

#### **Release of exhibits**

(2) After an inquest is concluded, the coroner shall, upon request, release documents and things put in evidence at the inquest to the lawful owner or person entitled to possession thereof. R.S.O. 1990, c. C.37, s. 52 (2).

### **Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 26 - 27/07/2009

#### **Protection from personal liability**

53 No action or other proceeding shall be instituted against any person exercising a power or performing a duty under this Act for any act done in good faith in the execution or intended execution of any such power or duty or for any alleged neglect or default in the execution in good faith of any such power or duty. 2009, c. 15, s. 27.

**Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 27 - 27/07/2009

**Seals not necessary**

54 In proceedings under this Act, it is not necessary for a person to affix a seal to a document, and no document is invalidated by reason of the lack of a seal, even though the document purports to be sealed. R.S.O. 1990, c. C.37, s. 54.

**Offences**

55 Any person who contravenes section 10, 11, 13 or subsection 16 (6) is guilty of an offence and on conviction is liable to a fine of not more than \$1,000 or to imprisonment for a term of not more than six months, or to both. R.S.O. 1990, c. C.37, s. 55.

**Regulations and fees**

56 (1) The Lieutenant Governor in Council may make regulations,

- (a) prescribing powers and duties of the Chief Coroner;
- (b) prescribing powers and duties of the Chief Forensic Pathologist;
- (c) prescribing the composition of the Oversight Council and of the complaints committee of the Oversight Council;
- (d) prescribing matters for the purpose of paragraph 7 of subsection 8.1 (1);
- (e) respecting the making, referral and reviewing of complaints under section 8.4;
- (f) defining “restrain” for the purpose of subsections 10 (4.7) and (4.8);
- (g) governing the retention, storage and disposal of tissue samples, implanted devices and body fluids obtained in performing a *post mortem* examination of a body or conducting examinations or analyses under section 28. 2009, c. 15, s. 28 (1); 2009, c. 33, Sched. 9, s. 3 (2).

**Same**

(2) The Minister may make regulations,

- (a) respecting the appointment of persons under section 16.1;
- (b) prescribing limits on the powers of persons appointed under section 16.1;
- (c) providing for the selecting, recording, summoning, attendance and service of persons as jurors at inquests;
- (d) prescribing matters that may be grounds for disqualification because of interest or bias of jurors for the purposes of subsection 34 (6);
- (e) prescribing the contents of oaths and affirmations required or authorized by this Act;
- (f) prescribing the form of a warrant for the purpose of subsection 40 (3);
- (g) prescribing fees and allowances that shall be paid to persons rendering services in connection with coroners’ investigations and inquests and providing for the adjustment of such fees and allowances in special circumstances;
- (h) requiring and governing the disclosure, collection and use of information, including personal information within the meaning of the *Freedom of Information and Protection of Privacy Act*, about coroners, pathologists and other members of the College of Physicians and Surgeons of Ontario among the Chief Coroner, the Chief Forensic Pathologist, the Oversight Council and the College of Physicians and Surgeons of Ontario. 2009, c. 15, s. 28 (1).

**Coroners’ fees and allowances**

(3) The Minister may set fees and allowances for coroners for services performed under this or any other Act and may provide for the adjustment of such fees and allowances in special circumstances. 1997, c. 39, s. 5 (2).

**Non-application of *Legislation Act, 2006*, Part III**

(4) Part III (Regulations) of the *Legislation Act, 2006* does not apply to,

- (a) any rules made by the Chief Forensic Pathologist respecting the maintenance of the register of pathologists under section 7.1 or the authorization of pathologists to provide services under this Act; or
- (b) the rules of procedure for inquests made by the Chief Coroner under section 50.1. 2009, c. 15, s. 28 (2).

**Section Amendments with date in force (d/m/y)**

1997, c. 39, s. 5 (1, 2) - 01/05/1998

2009, c. 15, s. 28 (1, 2) - 27/07/2009; 2009, c. 33, Sched. 9, s. 3 (2) - 15/12/2009

**Forms**

**57** (1) The Minister may approve forms for the purposes of this Act and provide for their use. 2009, c. 15, s. 29.

**Same**

(2) Where the Minister approves a form and requires its use, the form shall be available on the website of the ministry of the Minister. 2009, c. 15, s. 29.

**Section Amendments with date in force (d/m/y)**

2009, c. 15, s. 29 - 27/07/2009

Forms 1, 2 REPEALED: 1997, C. 39, S. 6.

**Section Amendments with date in force (d/m/y)**

1997, c. 39, s. 6 - 30/04/1999

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Français

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[https://du0tsrdospf80.cloudfront.net/docs/90c37\\_e.doc](https://du0tsrdospf80.cloudfront.net/docs/90c37_e.doc)

This is Exhibit "G" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018



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*Commissioner for Taking Affidavits (or as may be)*

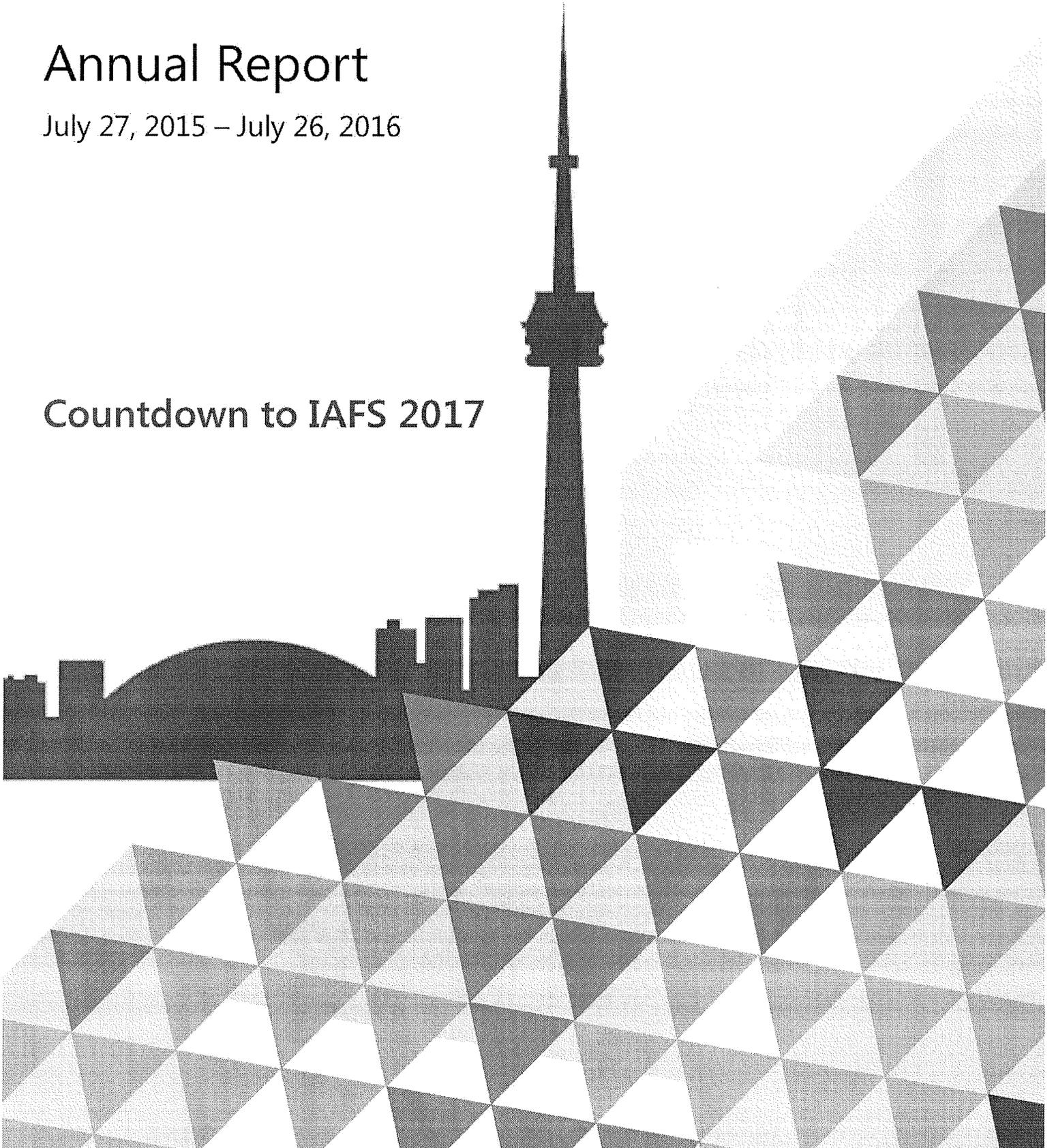


# Ontario Forensic Pathology Service

## Annual Report

July 27, 2015 – July 26, 2016

Countdown to IAFS 2017





On the cover: The OFPS is proud to be a host of the 21st Triennial Meeting of the International Association of Forensic Sciences in Toronto in August 2017.

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## Chief Forensic Pathologist's Report

This has been a busy year! In addition to our usual core duties of performing medicolegal autopsies, testifying in court and teaching forensic pathology to residents, fellows and other learners, we have been busy with a once-in-a-lifetime opportunity: planning IAFS2017.

In 1969, Douglas Lucas, who was a forensic scientist and director of the Centre of Forensic Sciences, hosted the seventh Triennial Meeting of the International Association of Forensic Sciences (IAFS) here, in our great City of Toronto. Back then, Toronto was known as "Toronto the Good" and was home to only one professional sports team, the Toronto Maple Leafs. The CN Tower only existed in the imagination of architect John Andrews. Toronto was also home to the famous Yorkville Village, a bastion of hippies and bohemian clubs that were the launching pads for singers Joni Mitchell, Neil Young, Gordon Lightfoot and Carly Simon, to name a few.

Fast forward almost 50 years and we proudly support the Toronto FC, our Blue Jays, Raptors and the Leafs, no matter where they are in the standings. The CN Tower is no longer the world's tallest free-standing structure and Yorkville Village is now home to some of the most

expensive real estate in Canada and the Mink Mile shopping strip.

How things have changed.

Today, Toronto has grown into a great city recognized for its arts, culture, sports and diversity. It is also recognized for its commitment to science and research, so it is fitting that it houses the headquarters of the Ontario Forensic Pathology Service (OFPS).

It is a great honour to be able to host the 21st Triennial Meeting of the IAFS in 2017. As the current President of the IAFS, I have had the pleasure over the last three years of advancing the mission of the IAFS, which complements the institutional values and commitments of the OFPS. Both organizations promote the fair use of medical/scientific evidence to foster truth-seeking and justice, and to improve the health and well-being of societies around the world.

As planners of IAFS2017, we chose the theme *Inter-Professional Collaboration in Forensic Science*. This reflects the interest of the OFPS and our collaborators in promoting best practices in forensic science worldwide,

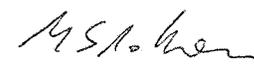
through a multi-disciplinary approach. This theme also supports an important goal of IAFS 2017, which is to promote forensic capacity development in developing countries. Specifically, we focused on obtaining financial sponsorship and support to allow emerging young and mid-career forensic scientists from low and middle income countries to travel to Toronto and present their work to an international audience. This reflects the importance of creating a world-wide community of experts in forensic science to benefit our global community. In this way, the forensic sciences can be unified to:

- Support the rule of law
- Protect human rights
- Narrow the impunity gap that allows crimes against humanity, and
- Advance the 'science' in forensic science

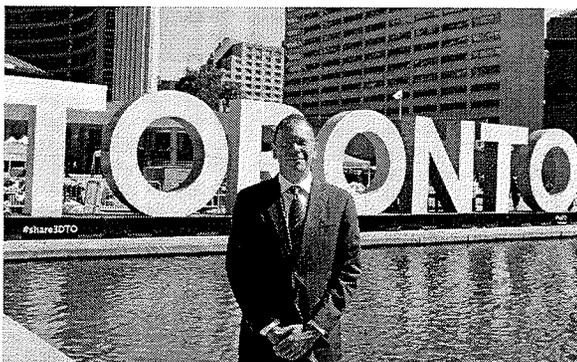
Our goal is ambitious: to make Toronto a centre of forensic collaboration. The opportunity to host IAFS 2017 is an important step in realising that goal.

All members of the OFPS community and our multidisciplinary collaborators, including scientists, lawyers, police, jurists and academics, have graciously

contributed to the creation of an exciting and stimulating agenda for IAFS2017. With two days of practical workshops hosted at our state-of-the-art Forensic Services and Coroner's Complex in the north part of the city, and three days of scientific programming which includes, platform presentations and poster presentations in the heart of Toronto, the conference will be an unprecedented event in the forensic science calendar for 2017.



Michael S. Pollanen MD PhD FRCPath DMJ (Path) FRCPC  
Founder, forensic pathology  
Chief Forensic Pathologist and Deputy Chief Coroner for Ontario  
Director, Centre for Forensic Science and Medicine  
Professor, Department of Laboratory Medicine and Pathobiology, University of Toronto  
President, International Association of Forensic Sciences (IAFS), 2014-2017



Dr. Pollanen with a medical student from the University of Baghdad.



Dr. Pollanen speaking to the Victorian Chapter of the Australian Academy of Forensic Sciences.

## About Us

The Ontario Forensic Pathology Service (OFPS) provides forensic pathology services under the Coroners Act. The OFPS works closely with the Office of the Chief Coroner (OCC) to ensure a coordinated and collaborative approach to death investigation in the public interest. Together, the Chief Forensic Pathologist and Chief Coroner provide collaborative leadership for Ontario's death investigation system.

Pathologists are specialized medical doctors who have undertaken five years of additional training after medical school in pathology, the study of disease. Forensic pathologists have additional post-graduate training in forensic pathology, the application of medicine and science to legal issues, usually in the context of sudden death. Forensic pathology is the branch of medicine that underlies death investigation as recognized by the Royal College of Physicians and Surgeons of Canada, the National Academy of Sciences of the United States and other professional bodies.

Most deaths in Ontario are due to natural causes and do not require medicolegal investigation. However, deaths that are sudden and unexpected require investigation by a coroner. These include deaths from accidents, suicides, homicides, and sudden deaths from previously undiagnosed diseases.

When a coroner requires an autopsy to answer questions about a death, an autopsy is ordered from the OFPS. Of the approximately 15,000 deaths investigated by coroners annually, about 6,400 undergo a medicolegal autopsy performed by pathologists working under the OFPS. These autopsies are conducted in Forensic Pathology Units and community hospitals across the province. In some of these cases, the death is considered to be "routine" (e.g., sudden natural deaths and some accidents and suicides), while "complex" cases include homicides, criminally suspicious cases and pediatric deaths.

The OFPS and the OCC share a vision, mission and values.

Our vision is a high quality death investigation system for a safer and healthier Ontario.

Our mission is to provide high quality death investigation services that support the administration of justice, the prevention of premature death, and is responsive to Ontario's diverse needs.

Our values are:

- Integrity. We remember that the pursuit of truth, honesty and impartiality are the cornerstones of our work.
- Responsiveness. We embrace opportunities, change and innovation.
- Excellence. We constantly strive for best practice and best quality.
- Accountability. We recognize the importance of our work and will accept responsibility for our actions.
- Diversity. We have a diverse team with different backgrounds, professional training and skills.

The OFPS applies these core values by embracing an independent and evidence-based approach that emphasizes the importance of thinking objectively in pursuit of the truth. The OFPS is committed to service, research and teaching.

## Our Legislation

The Coroners Act defines the roles and responsibilities of pathologists and coroners in death investigation and enhances the quality, organization and accountability of forensic pathology services. The Coroners Act:

- defines the OFPS as the unified system under which pathologists provide forensic pathology services, including autopsies
- defines the position of the Chief Forensic Pathologist as overseer of forensic pathology services
- defines the positions of the Deputy Chief Forensic Pathologist and pathologist
- requires a registry of pathologists accredited to perform medicolegal autopsies
- requires the Chief Forensic Pathologist to communicate with the College of Physicians and Surgeons of Ontario on any adverse findings related to competency and professionalism of a registered pathologist

Registered pathologists have legal authority under the Coroners Act to attend scenes and to order ancillary tests as required, pursuant to their duties.

## Our Governance

The OFPS and the OCC are part of the Ministry of Community Safety and Correctional Services and are accountable to the Minister of Community Safety and Correctional Services, The Honourable Marie-France Lalonde. The Deputy Minister of Community Safety and Correctional Services, Matthew Torigian, provides direction on administrative matters.

The Death Investigation Oversight Council (DIOC) ensures that death investigation services are effective and accountable. As an independent advisory agency, DIOC provides oversight of the OFPS and OCC, administers a public complaints process, and provides advice and recommendations to the Chief Coroner and Chief Forensic Pathologist. The current Chair is The Honourable Joseph C.M. James.

## Our Structure

### Ontario Forensic Pathology Service (OFPS)

Under the Coroners Act, the Chief Forensic Pathologist administers and operates the OFPS. Specifically, the Chief Forensic Pathologist:

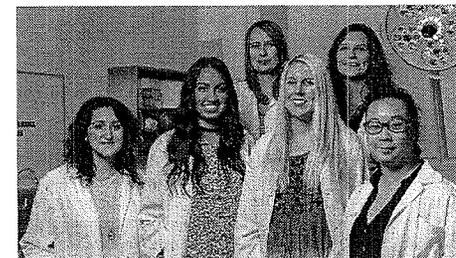
- supervises and directs pathologists in the provision of services
- conducts programs for the instruction of pathologists
- prepares, publishes and distributes a code of ethics
- maintains a register of pathologists authorized to provide services

The Deputy Chief Forensic Pathologist has all the powers and authorities of the Chief Forensic Pathologist in the event the Chief Forensic Pathologist is absent or unable to act, or if the Chief Forensic Pathologist's position becomes vacant. The Deputy Chief Forensic Pathologist also supports the Chief Forensic Pathologist in the administration, oversight and quality management of the OFPS. Dr. Toby Rose has been the Deputy Chief Forensic Pathologist since 2011.

The head office of the OFPS is located at the Forensic Sciences and Coroner's Complex (FSCC) in northwestern Toronto with the Provincial Forensic Pathology Unit, the OCC, the Centre of Forensic Sciences (CFS) and the Office of the Fire Marshal and Emergency Management (OFMEM) to facilitate communication and professional collaboration. The OFPS and the OCC are supported by Operational Services. In 2015, Martin Chicilo joined the OFPS/OCC as the new Director to oversee quality and information management, business planning, financial control and communications.

### Provincial Forensic Pathology Unit (PFPU)

The forensic pathologists of the Provincial Forensic Pathology Unit (PFPU) perform approximately 2,700

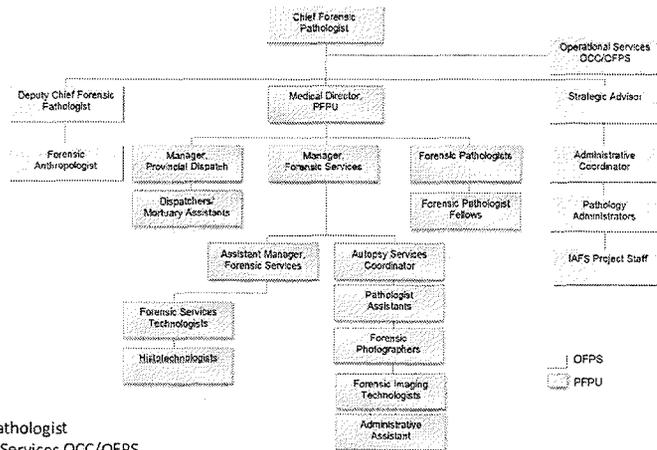


Provincial Forensic Pathology Unit

autopsies per year, mainly from the Greater Toronto Area. The PFFU, affiliated with the University of Toronto, is also the central referral facility for many complex autopsies from across the province, including homicides, skeletal remains and suspicious infant and child deaths. The Medical Director of the PFFU reports to the Chief Forensic Pathologist. Dr. Jayantha Herath is the Medical Director of the PFFU.

The operation of the PFFU includes professional and technical roles in addition to forensic pathologists. These include forensic anthropologists, pathologist assistants, technologists and imaging specialists, as well as administrative and management personnel.

### OFPS Directorate and Provincial Forensic Pathology Unit (PFFU) Organizational Model



#### Chief Forensic Pathologist

- Operational Services OCC/OFPS
- Deputy Chief Forensic Pathologist
  - Forensic Anthropologist
- Strategic Advisor
  - Administrative Coordinator
  - Pathology Administrators
  - IAFS Project Staff
- Medical Director, PFFU
  - Manager, Provincial Dispatch
    - Dispatchers/Mortuary Assistants
  - Manager Forensic Services
    - Assistant Manager, Forensic Services
      - Forensic Services Technologists
      - Histotechnologists
    - Autopsy Services Coordinator
      - Pathology Assistants
      - Forensic Photographers
      - Forensic Imaging Technologists
      - Administrative Assistant

### Forensic Pathology Units

Forensic Pathology Units are located in university teaching hospitals in Hamilton, Kingston, London, Ottawa, Sault Ste. Marie and Sudbury. These units provide expertise in forensic pathology for approximately 2,600 routine and complex autopsies annually, including homicides and pediatric cases. The Ministry of Community Safety and Correctional Services, through the OFPS, provides funding to these units.

Complex forensic autopsies are performed by qualified forensic pathologists, most of whom work at a Forensic Pathology Unit or at the Provincial Forensic Pathology Unit in Toronto. Some non-suspicious pediatric autopsies are performed at the Hospital for Sick Children in Toronto and the Children's Hospital of Eastern Ontario in Ottawa. Perinatal autopsies are also performed at Mount Sinai Hospital in Toronto. Occasionally, pediatric forensic cases from Northwestern Ontario are transferred to Winnipeg for autopsy by pathologists registered in Ontario.

### Community Hospitals

Pathologists working in 22 community hospitals support the work of the OFPS by conducting routine medicolegal autopsies in their facilities on a fee-for-service basis.

### Our Partners and Working Relationships

Our major partners are the OCC, municipal and provincial police agencies, the Office of the Fire Marshal and Emergency Management, the Special Investigations Unit (SIU), the Centre of Forensic Sciences and the criminal justice system.

The OFPS also collaborates with universities on research, education and training. Furthermore, the OFPS provides services to organizations outside Ontario such as Canada's Department of National Defence.



Sheraton Centre Lobby credit sheratontoronto.com

## Our Services

The OFPS provides a range of services in support of the death investigation, justice and health care systems.

### 1. Pre-autopsy consultations

Forensic pathologists consult with Regional Supervising Coroners to determine the appropriate location for an autopsy based on the complexity of a case and the skills of local pathologists.

Forensic pathologists work with Regional Supervising Coroners to facilitate organ and tissue donation through the Trillium Gift of Life in appropriate cases, in accordance with the wishes of the deceased and the family of the deceased.

### 2. Scene visits

Pathologists attend scenes to gain necessary information as part of a complete autopsy. Some forensic pathologists have been appointed as Coroners. These Forensic Pathologist-Coroners perform coroner's duties for suspicious deaths and homicides, including scene visits as well as certification of cause and manner of deaths.

In some cases, photographs, video recordings and other imaging techniques are used instead of the scene visit.

### 3. Autopsies

Pathologists conduct autopsies and observe, document and interpret findings to help determine cause of death. There are five steps to a medicolegal autopsy:

- review of case history, scene and circumstances
- external examination, including photographic documentation
- internal examination by dissection, including photographic documentation as indicated
- ancillary tests: may include imaging, histology, cardiovascular, neuropathology, anthropology and odontology consultations, toxicology, metabolic screening and DNA testing
- opinion and report writing

Most autopsies are performed under authority of an Ontario Coroner's Warrant. Forensic pathologists in the

OFPS also provide autopsy services to other jurisdictions like Nunavut, as well as to the Department of National Defence for military personnel who die outside of Canada.

### 4. Consultations and expert opinions

Forensic pathologists and other consultants:

- participate in case conferences with other death investigation partners
- assist in identification of unidentified remains and missing persons
- provide consultations and expert opinions on complicated and 'cold' cases from Ontario and other jurisdictions. These requests may come from police agencies, crown prosecutors, defence attorneys or the Criminal Conviction Review Group
- provide occasional consultations and expert opinions on injuries on living individuals to assist with investigations

### 5. Testimony in trials and other hearings

Forensic pathologists and other consultants testify as expert witnesses at coroner's inquests, at all levels of court and at public inquiries. This contribution to the justice system is of the utmost importance to the public.

### 6. Collaboration with coroners

Forensic pathologists serve on OCC death review committees that have quality assurance and death prevention mandates:

- Maternal and Perinatal Death Review Committee
- Geriatric and Long-Term Care Review Committee
- Patient Safety Review Committee
- Paediatric Death Review Committee
- Deaths Under Five Committee

### 7. Special services

Special services are provided on request to other agencies, including international groups and non-governmental organizations. In cases of multiple fatalities, these services may include disaster victim identification or human rights death investigations.

## Our Activities (July 27, 2016 - July 26, 2017)

### Administration and Operation of the OFPS

#### Our Plan 2: 2015

The OFPS has a joint five-year strategic plan with the OCC that sets out four priorities to guide the death investigation system in Ontario:

1. A sustainable and effectively resourced system: Provincial complement of highly qualified human resources, supported by modern processes, systems, infrastructure, and technology.
2. Effective, relevant and reliable services: System delivers effective and efficient investigation and certification of deaths, and high quality forensic medicine and autopsy services.
3. Leverage data, build knowledge and provide education: Robust data creates knowledge and drives education and innovation in death investigation and forensic medicine.
4. Improve the health and safety of Ontarians: Enhanced review mechanisms and stronger partnerships contribute to a safer and healthier Ontario.

The OFPS also has a supporting implementation plan to follow our successful start-up plan (Our Plan, 2009-2014) that responded to the Inquiry into Pediatric Forensic Pathology and amendments to the Coroners Act in 2009. The OFPS has addressed all the objectives outlined in our start-up plan to provide the basis for continued growth.

Our Plan 2 focuses on capacity development and sustainability, and establishes measurable objectives to implement the four strategic priorities of the OFPS/OCC Plan.

Highlights of Our Plan 2 include:

- adding resources across the province including the North
- addressing the needs of First Nations and remote communities
- enhancing the provision of autopsies using imaging modalities
- expanding the role of Forensic Pathologist-Coroners at

- Forensic Pathology Units and for broader case types
- identifying human remains that are persistently unidentified
- maintaining residency training programs in forensic pathology
- maintaining training programs for less developed countries
- maintaining educational activities for pathologist assistants, police, physicians, lawyers and other learners
- encouraging peer-reviewed publications and presentations
- impacting public health and safety through tissue donation, molecular autopsy, multiple fatality planning, family-consent autopsies.

#### Forensic Pathology Advisory Committee

The Forensic Pathology Advisory Committee provides advice to the Chief Forensic Pathologist regarding professional medicolegal autopsy practices. This committee includes the Directors of the Forensic Pathology Units, the President of the Ontario Association of Pathologists and the Chief Coroner.

During the reporting period, the committee convened once to discuss policy issues, including:

- problems with limited toxicology testing
- approach to Sudden Infant Death
- external examinations on hanging Cases by Category B pathologists

#### Forensic Services Advisory Committee

The Forensic Services Advisory Committee was created to strengthen the objectivity of the OFPS and to improve communication with key external stakeholders such as police, Crowns and defense attorneys, who are represented on the committee. The committee meets as required to provide advice to the Chief Forensic Pathologist on topics that advance the quality and independence of medicolegal autopsies.

During the reporting period, the committee did not meet.

## Register of Pathologists

Under the Coroners Act, medicolegal autopsies may be performed only by pathologists who are appropriately credentialed and registered by the OFPS. On the basis of their qualifications, registered pathologists may be approved to perform:

- all medicolegal autopsies including homicide and criminally suspicious cases (Category A)
- routine cases only (Category B)
- non-suspicious pediatric cases only (Category C)

As of July 26, 2016, a total of 111 registered pathologists were active, including 39 Category A pathologists permitted to conduct all types of autopsies. These 39 pathologists are recognized as having additional experience, training and/or certification in forensic pathology.

The Credentialing Subcommittee of the Forensic Pathology Advisory Committee reviews applications and provides advice to the Chief Forensic Pathologist regarding acceptance and renewal to the register. Pathologists are registered for a five-year term after which their appointments are considered for renewal. The Quality Team assembles data for review by the Credentialing Subcommittee, including:

- case load, cumulative over five years and year-by-year
- turnaround time for post-mortem examination reports
- peer review history
- complaints, incident reports and critical incidents, and remediation by Chief Forensic Pathologist and by College of Physicians and Surgeons of Ontario (CPSO), where applicable

The OFPS Register is available publicly through the Ministry's website (<http://ontario.ca/c877>).

Performance management of registered pathologists related to quality of medicolegal autopsies is the responsibility of the Chief Forensic Pathologist. When there is professional misconduct or incompetence, the Chief Forensic Pathologist is obligated by law to report the issue to the College of Physicians and Surgeons of Ontario.

## Supervision and Direction of Pathologists

To promote consistent and high quality practices across Ontario and to assist registered pathologists in their work, the OFPS provides a Practice Manual and Toolkit, updated in 2014.

The Practice Manual includes the Code of Ethics, practice guidelines for medicolegal autopsies, and explanations of the peer review system and Register. Together, these

documents provide the professional and policy foundation for the OFPS.

The Code of Ethics was adapted from the Forensic Pathology Section of the Canadian Association of Pathologists.

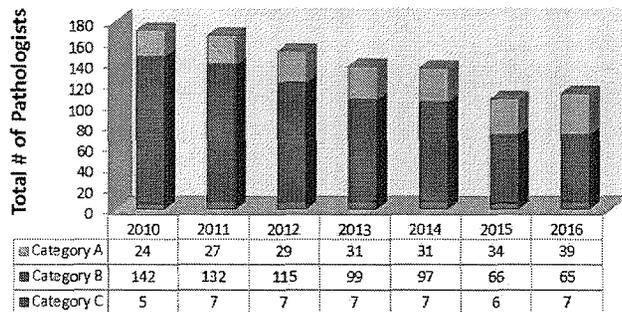
## Pathology Information Management System (PIMS)

The OFPS uses the Pathology Information Management System (PIMS) to collect information about autopsies performed across Ontario. All registered pathologists contribute information to the system through the Post-mortem Examination (PME) record. This record, an electronic form used to capture high level data about autopsies, is completed and submitted to the OFPS directly after the autopsy. The record is reviewed daily by a senior forensic pathologist to ensure that autopsies are done according to guidelines. The collected information is also used to evaluate resources, as well as to provide statistics about performance and quality. PIMS, in conjunction with the PME record, facilitates accountability and the oversight of autopsies by the Chief Forensic Pathologist.

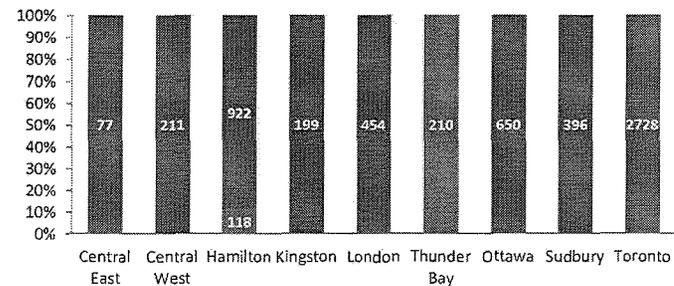
## Caseload Statistics

Caseload statistics are derived from Post-mortem Examination Records submitted during the reporting period. Each OFPS case begins with a coroner's request for an autopsy by warrant to a pathologist. Autopsies on homicides, criminally suspicious and pediatric cases, deaths involving firearms and routine (non-suspicious) autopsies are performed in Forensic Pathology Units by appropriately qualified forensic pathologists. Some non-suspicious (medical type) autopsies of children are performed at pediatric sites. Routine autopsies are conducted in community hospitals. Eighty-three per cent (83%) of all autopsies were performed in Forensic Pathology Units and pediatric sites, and 17% in community hospitals. Chart 1 shows the distribution of autopsies captured in the system by OCC investigative regions.

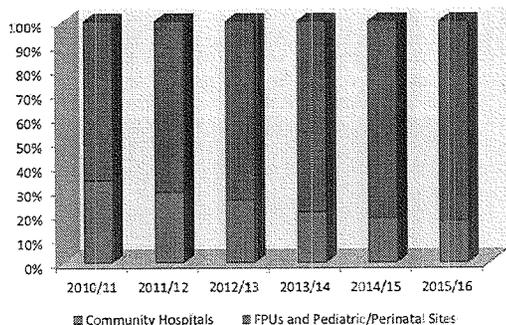
## Register Composition by Pathologist Category



## Chart 1: Distribution of Autopsies by OCC Investigative Region

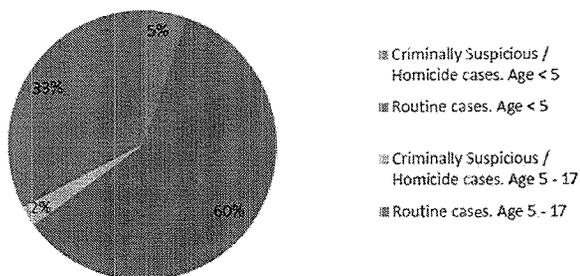


**Chart 2: Distribution of Autopsies by Site Type**



Pediatric cases stratified by age group and case type are shown in Chart 3.

**Chart 3: Pediatric Cases by Type and Age**

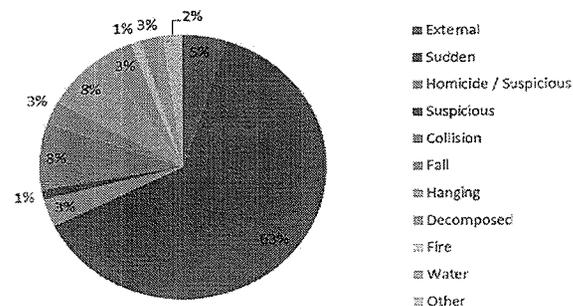


Pediatric autopsies (for children 17 years of age or under) are often complex, requiring additional ancillary testing and/or consultation with other medical specialists. Pediatric autopsies of a criminally suspicious nature are all performed in Forensic Pathology Units.

For the reporting period, there were a total of 298 paediatric cases, of which 194 were of children less than five years of age and 104 were between the ages of five and 17. There were 275 routine cases and 23 criminally suspicious/homicide cases.

Chart 4 provides a breakdown of autopsies by case type as entered in PIMS. The category 'sudden' includes non-homicidal gunshot wounds, drug overdoses and others not specified in the available categories.

**Chart 4: Distribution of Autopsies by PIMS Case Type**



In some cases, the decision is made to limit an autopsy to an external examination where sufficient information can be obtained from a limited examination. There were 326 such cases performed in Forensic Pathology Units and ten in community hospitals. Forensic pathologists at the PFPFU rely on imaging technology to inform their decisions about limited autopsies.

**Quality Management**

The OFPS has a robust quality assurance program comprised of the following:

- Pathologist Register
- practice guidelines, including standardized reporting templates and forms
- consultation in difficult or challenging cases
- collection of standardized case information through the Post-mortem Examination record
- peer review of all autopsy reports on homicide, criminally suspicious and SIU cases, and complex pediatric cases (deaths under five) prior to report distribution

- audit of autopsy reports on routine cases
- peer review of courtroom testimony
- detection and follow-up of significant quality issues and critical incidents
- reporting of key performance indicators to clients and stakeholders
- tracking of complaints to ensure timely resolution and corrective action
- continuing medical education in forensic pathology to
  - maintain specialist competence as required by the Royal College of Physicians and Surgeons of Canada
  - address performance concerns

**Peer Review of Autopsy Reports for Homicide, Criminally Suspicious, Pediatric and SIU Cases**

There were 298 autopsy reports peer reviewed. On average, about 11 reviews were completed by each reviewing forensic pathologist. The average turnaround time for peer review was five days. The OFPS turnaround time standard for peer review is 10 working days.

**Peer Review of Courtroom Testimony by Forensic Pathologists**

Forensic pathologists who testify submit one transcript of courtroom testimony each year for review by another forensic pathologist.

Courtroom testimony is assessed for:

- accuracy and evidence-base
- professionalism and objectivity
- clear language
- presentation of limitations, uncertainties and alternate hypotheses

No problems have been identified in courtroom testimony reviewed to date.

**Audit of Autopsy Reports for Routine Cases**

Autopsy reports for routine cases are audited for administrative and technical accuracy by Directors of Forensic Pathology Units. Reports from community hospitals are audited by the Chief Forensic Pathologist or designate.

The administrative audit focuses on completeness and adherence to guidelines. All community hospital reports undergo administrative audit and ten per cent of routine autopsy reports from Forensic Pathology Units undergo this type of audit.

The technical audit focuses on the content of the report to ensure that the approach, conclusions and opinions derived from the evidence are reasonable.

A technical audit is done for all reports that fall into the following categories:

- cases with an undetermined cause of death
- non-traumatic and non-toxicologic deaths of individuals younger than 40 years old
- reports from pathologists performing fewer than 20 autopsies per year

**Key Performance Indicators**

Key performance indicators for autopsy reports such as submission compliance, completeness, turnaround time and validity are collected from the administrative and technical reviews and reported.

Table 1 shows the indicator, target outcome and overall performance for Forensic Pathology Unit and community hospital pathologists.

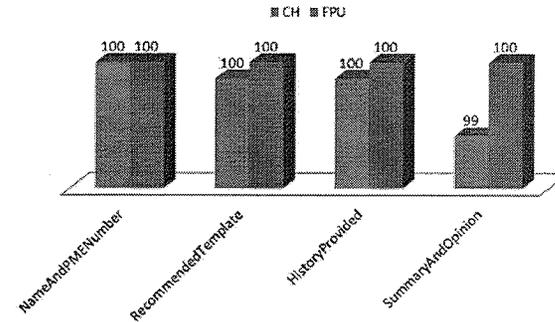
**Table 1: Key Performance Indicators for Autopsy Reports**

\*Turnaround time may be influenced by case complexity and availability of ancillary testing

Key Performance Indicators for Autopsy Reports	Target	Results
Submission Compliance (PME Record)	100%	95% - approaching compliance
Completeness	95%	99% - good compliance
Consistency	95%	99% - good compliance
Turnaround Time	90 days	Average = 87 days - good compliance
Reports with Significant issues (Forensic Pathology Units)	< 2%	0% - good compliance
Reports with Significant issues (Community Hospitals)	< 2%	1.08% (14 amended reports requested out of 1292 audits) - good compliance
Critical Incidents	0	0 - good compliance

Chart 5 illustrates completeness of autopsy reports in accordance with practice guidelines during the period April 1 – March 31 shown by Administrative Audit.

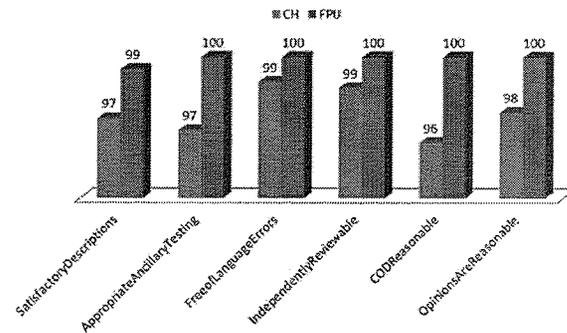
**Chart 5: Completeness Measures as shown by Administrative Audit**



Pathologists in community hospitals are expected to follow the best practices set out in the Practice Manual. Pathologists are provided feedback from routine audits with the goal of improving report quality. Note: community hospitals may use their own institution's report templates if they include the required template fields.

Chart 6 illustrates consistency of the content and opinion of autopsy reports as assessed by the reviewing pathologist during the period April 1 – March 31 of each year as shown by Technical Audit.

**Chart 6: Consistency Measures as shown by Technical Audit**



## Significant Issues

Significant issues include substantial errors, omissions and other deficiencies.

A critical incident is a significant issue that contributes to a serious error in a death investigation. All critical incidents are analyzed to determine root cause and corrective action.

If the reviewing forensic pathologist detects a significant issue during the technical review, feedback is provided to the case pathologist. In 2016 no significant issues were detected in routine case reports from Forensic Pathology Unit pathologists, while 1.08% of reports from community hospital pathologists had significant issues.

The purpose of quality assurance is to improve the quality of autopsies and reports. When a significant issue is detected, the reviewing pathologist contacts the original pathologist directly to discuss and recommend changes to the report. Continual improvement of autopsy practice and report writing is supported with:

- continuing education events such as the Annual Education Course for Coroners and Pathologists and special workshops on autopsy practice

- resources such as the 2014 Practice Manual for Pathologists and Toolkit, including synoptic reports, annotated autopsy report templates, and Chief Forensic Pathologist's Guidance with Case Examples

## Turnaround Time

Timeliness of autopsy reports is a key performance indicator. Turnaround time is influenced by case complexity, return of ancillary test results, pathologist workload and staffing levels. The OFPS policy regarding turnaround time is:

- ninety per cent of autopsy reports are to be completed within 90 days of the day of the post-mortem examination
- cases involving homicides, pediatric deaths, deaths in custody and those in which the coroner has requested that the report be prioritized (due to requests from family or other parties) are to be expedited as a matter of routine
- no more than 10 per cent of cases should be greater than six months old without a justifiable reason for delay (e.g., delays caused by molecular autopsy for channeiopathy)

## Clinical Forensic Medicine

At present, qualified expert opinions and testimony by forensic specialists are usually available only in cases of violent death. However, cases of serious assault with a surviving victim can often benefit from the review and interpretation of injuries by a forensic expert, and the expert's opinion can be useful to the criminal justice system. Forensic pathologists consult by reviewing medical records and digital photographs.

## Forensic Anthropology

Forensic anthropologists are experts in the study of skeletal remains in the medicolegal context. Forensic anthropologists make an important contribution to death investigations where the remains are skeletonized, burned, decomposed, mutilated or otherwise unrecognizable. Forensic anthropologists act as part of the death investigation team. They are the experts at determining whether found bones are human or non-human by examining digital photographs or the remains themselves. They help to plan for multiple fatality events and manage identification when they occur. They are also the experts who determine whether found remains are of recent forensic interest or are archaeological or historical in nature.

One full-time forensic anthropologist, Dr. Kathy Gruspier, works in the OFPS along with several fee-for-service consultants, Dr. Tracy Rogers, Dr. Mike Spence, Dr. Scott Fairgrieve, Mr. Greg Olson, and Ms. Renee Kosalka.

Since 2005, the OFPS has worked with the OCC and the Missing Persons and Unidentified Bodies Unit of the Ontario Provincial Police (OPP) on the Resolve Initiative, adding information to a database and building profiles of unidentified human remains. Data on missing persons and unidentified remains are compared, and possible matches can be confirmed by DNA comparison and other identification techniques. As a result, more than two dozen missing individuals have been identified and subsequently claimed by their families.

In 2016, a Memorandum of Understanding was signed by the OFPS, OCC, OPP and Royal Canadian Mounted Police (RCMP), forming a national network with access to the RCMP-maintained database for Missing Children/ Missing Persons and Unidentified Remains. The network, "The Ontario Centre for Missing Persons & Unidentified Remains," will allow partners to search and compare cases across Canada.

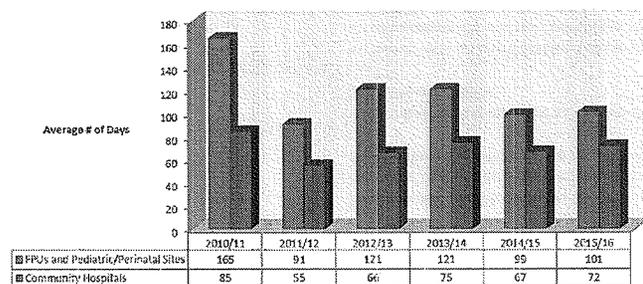
*In March 2016, a house fire occurred on Pikangikum First Nation reserve, a remote Ojibwe community in Northern Ontario. As the lead for the OFPS multiple fatality implementation plan, the forensic anthropologist communicated with partners in the OCC, the OPP and the Office of the Fire Marshal and planned the response with OFPS staff and other consultants in anthropology and odontology. A forensic anthropologist travelled to work with the local team and manage the recovery of remains. Nine family members died in the fire. Their bodies were transported to the PPFU for autopsy and identification. During the autopsies, forensic anthropologists contributed through the interpretation of postmortem CT scans, removal of debris, anatomical positioning and skeletal inventory, dental reconstruction, burn pattern interpretation, traumatic injury interpretation, estimation of biological profile (age-at-death and sex), analysis of unique skeletal features for identification purposes using antemortem radiographs, 3D virtual reconstruction (for skeletal inventory and juvenile age-at-death estimation), and the resolution of commingling. Following the autopsies and compilation of antemortem and postmortem information, the identification reconciliation committee was able to positively identify all nine, who were returned home within two days.*

## Other Professional Consultants

The OFPS relies on the expert contributions of other professionals, including cardiovascular pathologists, neuropathologists, forensic odontologists, radiologists and a forensic entomologist.

Chart 7 depicts the turnaround time for community hospital pathologists and forensic pathologists in Forensic Pathology Units. The longer turnaround time for forensic pathologists may be explained by the more complex nature of the autopsies performed.

Chart 7: Turnaround Time



### F-Path: PFFU's new, home-grown LIMS (Laboratory Information Management System)

The Provincial Forensic Pathology Unit has launched a web-based electronic information management system, to link all PFFU tasks. This system ensures quality, accuracy and confidentiality and includes case accession, tracking of procedures, testing and results, photograph storage, and body release. Future upgrades will enable report generation by pathologists and consultants.

### Histology

Histology is the preparation of microscope slides from tissues obtained at autopsies for examination by a pathologist. The number of slides prepared for each case varies with the type of case and the pathologist's preference.

Histology services are provided by laboratories at community hospitals and Forensic Pathology Units located in hospitals. At the Provincial Forensic Pathology Unit, two full-time histotechnologists are employed to process over 3,500 tissue specimens each month.

### Toxicology

Toxicological analysis of post-mortem samples is performed by scientists at the Centre of Forensic Sciences

(CFS). In many cases, pathologists rely on the results and interpretive notes provided by toxicologists in coming to an opinion about the cause of death.

During the reporting period, toxicological analysis was requested in approximately 3,600 death investigations. The average time to issue a toxicology report by the CFS was 43 days. In cases where toxicology was required, the autopsy reports were all issued within 90 days of receiving the toxicology reports.

### Organ Retention

Much of our understanding of human disease has come from the examination of tissues and organs of deceased persons by pathologists. Pathologists may need to retain an organ for more detailed examination to determine the cause of death and/or whether other family members are at risk. For decades, retaining organs for testing after autopsy was standard practice, and this information was not always shared with bereaved families. Now, pathologists must seek approval to retain an organ. In addition, under Regulation 180 of the Coroners Act, families are routinely notified when an organ is retained and their wishes regarding final disposition of the organ are sought wherever possible.

To ensure transparency regarding past practices, the Chief Forensic Pathologist and Chief Coroner reached out to

those who lost a family member in Ontario before June 14, 2010, resulting in a coroner's investigation and autopsy.

Amendments to Regulation 180 that provide for a longer retention period and central storage of organs retained before June 14, 2010 were publicly announced in June 2013. Since 2015, historically retained organs are stored at the Forensic Services and Coroner's Complex (FSCC).

### Molecular Forensic Pathology

Many natural disease processes are now recognized to have a genetic underpinning. For a number of these conditions, characterization of the genetic mutations involved is becoming the standard of care in hospitals for living patients and is part of the movement towards targeted therapy and personalized medicine. The first significant manifestation of such a disease may be sudden and unexpected death. In the majority of individuals who die with an underlying genetic mutation, these conditions are first recognized and diagnosed following the autopsy. Thus, particularly for young people, the identification of a genetic contribution to sudden death can have huge implications for the surviving family members as well as the health care system.

A large proportion of the cases where genetic disease has contributed to death involve the heart and blood vessels. The OFPS provides high quality cardiovascular pathology

services to investigate sudden cardiac and vascular deaths. Cases that are likely to have an underlying genetic disease also undergo molecular autopsy. In relevant cases tissue or blood is obtained at the post-mortem examination and is processed to extract DNA, which is banked at the Provincial Forensic Pathology Unit in Toronto. When required, DNA may then be submitted for sequencing to identify relevant pathogenic mutations. With the results of a post-mortem examination and clinical investigation, DNA analysis can help define the underlying disease that caused death, facilitate screening in surviving family members and contribute prognostic information for affected relatives. The priority is to ensure families receive information regarding a potential genetic condition and options for referral.

In addition, there is a growing number of instances where unrecognized genetic disease likely played a role in a person's death in the setting of incarceration in a penitentiary, interaction with Police or in the course of a criminal act. Under these circumstances, molecular autopsy can help provide answers to these challenging death investigations and contribute significantly to the criminal justice system and coronial inquiries.

### Forensic Imaging

Pathologists at the Provincial Forensic Pathology Unit (PFFU) incorporate the findings of advanced post-mortem



Art Gallery of Ontario credit: torontomomnow.com

imaging modalities such as computed tomography (CT) and magnetic resonance imaging (MRI) into their daily practice. Introduction of these techniques has resulted in targeted examinations, resulting in efficiencies and benefits to families.

Senior residents from the University of Toronto's Diagnostic Radiology Residency Program spend one month at the PFPU where they are integrated into daily service work. The residents learn about lethal injury and disease as well as changes in the body after death. They write reports on post-mortem CT and MRI scans, and are able to see pathologic lesions in a way that is not possible in the clinical setting.

The PFPU is conducting a pilot study to analyze a new process with respect to post-mortem imaging. Cases were previously scanned and autopsied on the same day, which may have resulted in missed opportunities for advanced imaging (e.g., MRI and CT angiography), targeted dissection, and teaching. During the pilot, bodies are being scanned and read on the day they arrive with autopsies scheduled for the following day. This permits incorporation of post-mortem imaging findings into discussions at morning rounds, which allow consensus decisions about targeted dissections, maximize the potential of magnetic resonance imaging, and augment use of technology to increase efficiency.

### Tissue Recovery for Donation

The OFPS and OCC are committed to facilitating and increasing the availability of tissue for transplantation through the Trillium Gift of Life Network (TGLN). The FSCC houses a dedicated Tissue Recovery Suite that is used exclusively for obtaining donor tissues including corneas, heart valves, skin and bones. After consent by the family, tissues are recovered by trained staff from TGLN as well as the CCC and OFPS.

For the reporting period, tissues have been recovered at the FSCC in 32 cases. Of these, 17 were multi-tissue recoveries in the Tissue Recovery Suite. The remaining 15 cases were eye-only recoveries.

### Consent Autopsies

In Ontario, it is often difficult for families to obtain answers about a loved-one's death when a medicolegal death investigation is not required. In the past, forensic pathologists have occasionally performed family-consent autopsies on request.

On this basis, the OFPS has extended its pilot project with North York General Hospital and Michael Garron Hospital to include Humber River Hospital and Mackenzie Health to assess the need for, and the resources required to support such a service at the Provincial Forensic Pathology Unit. This service is offered in cases of adult deaths that do not require a coroner's investigation and where the treating clinician or family have questions and the family consents to an autopsy.

### OFPS-Based Education

#### Annual Education Course for Coroners and Pathologists

This two-and-a-half day course is offered jointly by the OCC and OFPS each autumn. This meeting qualifies as continuing education for the Maintenance of Certification program of the Royal College of Physicians and Surgeons of Canada.

The 2016 course was held from November 16 – 18 and was attended by 28 registered pathologists.

The topics covered included:

- history of First Nations and Indigenous peoples
- recent advances in forensic neuropathology
- complex fatalities – fire investigation
- pathology of blast injuries and firearm injury pattern in suicides
- how to manage the hypertrophied heart

### The Centre for Forensic Science and Medicine at the University of Toronto

The Centre for Forensic Science and Medicine (CFSM) at the University of Toronto (U of T) is dedicated to the advancement of teaching and research in the forensic disciplines at the interfaces of medicine, the law and social sciences. The CFSM aims to contribute to the development of knowledge in these fields by drawing together a diverse group of practitioners and scholars. Presently, the Chief Forensic Pathologist holds the position of Director of the CFSM. Many of the forensic pathologists working in the OFPS are faculty for the CFSM's continuing educational programs.

The disciplines involved in the CFSM include law, forensic sciences, forensic pathology, forensic psychiatry and psychology, forensic anthropology, forensic odontology and forensic pediatrics. The CFSM is affiliated with the U of T's postgraduate residency and fellowship training program in forensic pathology, the Faculties of Medicine and Law, and the Forensic Sciences Program.

### Continuing Education Events

With funding support from the ministry, the CFSM hosts continuing education events that bring national and international experts to U of T to discuss topics in forensics. The courses are attended by academics, those working in forensic disciplines, other medical and legal professionals, and law enforcement practitioners. Since the

last annual report, the following courses were offered: **Sudden Death: SIDS, SADS & SUDEP (February 2016)** This seminar discussed cases and recent theories of causation of sudden infant deaths, sudden adult deaths and Sudden Unexpected Death in Epilepsy (SUDEP).

**Elder Abuse and Neglect (February 2017)** This seminar focused on systemic factors in elder neglect and the impact of elder abuse and neglect.

**Forensic Nursing (March 2017)** This two-day workshop introduced theoretical and practical principles of forensic science applied to a medical nursing environment.

### Dr. Frederick Jaffe Memorial Lectureship

The CFSM created a special lecture series in memory of Dr. Frederick Jaffe, one of the first forensic pathologists in Canada. Dr. Jaffe authored a textbook, *Guide to Pathological Evidence*, which was used for many years by attorneys and judges. He was also the first director of a province-wide forensic medical service.

The most recent lecture on October 3, 2016, was given by Dr. Christopher Milroy, Professor, Department of Laboratory Medicine and Pathobiology, University of Ottawa, and Medical Director of the Eastern Ontario Regional Forensic Pathology Unit, Ontario Forensic Pathology Service. Dr. Milroy discussed "*Forensic Pathology – Past, Present, Future.*"



Dr. Frederick Jaffe Memorial Lectureship

## IAFS 2017

The Ministry of Community Safety and Correctional Services is pleased to host the 21st Triennial Meeting of the International Association of Forensic Sciences (IAFS) in Toronto from August 21 - 25, 2017.

The IAFS is a not-for-profit association governed by a council made up of its past presidents. It is the only worldwide association of academics and practicing professionals from various disciplines in forensic science. Its objectives are to develop forensic sciences, assist forensic scientists and others to exchange scientific and technical information, and organize triennial meetings.

The theme of the IAFS 2017 conference is "Inter-Professional Collaboration in Forensic Science." It is expected to attract delegates practicing in the disciplines of forensic pathology and death investigation, forensic sciences, policing, and the legal and judicial systems.

To support IAFS 2017 planning, including scientific content and logistics, the Executive Governance Committee is working closely with the Scientific Planning Committee, as well as a professional congress organizer, International Conference Services (ICS) Ltd. The Sheraton Centre Toronto Hotel will be the venue for IAFS 2017. Pre-conference workshops will be held at the Forensic Sciences and Coroner's complex.



Forensic Services and Coroner's Complex

Plenary lectures will focus on:

- Forensic Issues in Human Migration
- Practicing Forensic Science in Challenging Environments: International Perspectives
- Major Case Management showcasing Ontario's successful collaborative and multi-disciplinary approach to investigating high-profile and complex homicides

In addition, there will be five areas of special interest for invited speakers and oral presentations:

1. Miscarriages of justice and wrongful convictions
2. New forensic technologies, digital evidence and cybercrime
3. New drugs, new issues, new doping methods
4. Violence against women and vulnerable persons
5. Terrorism and armed conflict

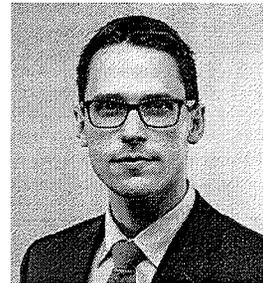
As President of the IAFS for 2014-2017 and Chair of IAFS 2017, one of Dr. Pollanen's goals is to raise awareness of the need for capacity development in the forensic sciences to support human rights and justice, particularly in low- and middle-income countries.

Visit the official website of the conference ([www.iafstoronto2017.com](http://www.iafstoronto2017.com)).

## Training Canadian Forensic Pathologists

The Provincial Forensic Pathology Unit (PFPU), in partnership with the Forensic Pathology Residency Training Program at University of Toronto (U of T) and with funding support from the Ministry of Health and Long-term Care, has the first training program in Canada leading to certification in forensic pathology by the Royal College of Physicians and Surgeons of Canada (RCPSC). Since 2008, 15 pathologists have completed training, 11 of whom are now working within the OFPS. One former trainee practices forensic pathology in Quebec. The Hamilton Forensic Pathology Unit also trains forensic pathology residents in partnership with McMaster University.

In July 2016, one new resident began training in forensic pathology in the U of T program:



Andrew S. Williams MD received his Doctor of Medicine from The University of Western Ontario in 2011. He completed his residency in Anatomical Pathology at Dalhousie University and passed the RCPSC examination in Anatomical Pathology in 2016.

## Clinical Fellows in Forensic Medicine

We are committed to developing global forensic medicine and have outreach activities and training collaborations with Jamaica, the Middle East, Sri Lanka, Chile and soon, Zambia. Since 2007, eight international fellows have trained in forensic pathology at the PFPU. Since 2016, clinical fellows are eligible to write the Royal College of Physician and Surgeons of Canada examination in Forensic Pathology, through the Subspecialty Examination Affiliate Program.

Some trainees benefit from the G. Raymond Chang Forensic Pathology Fellowship through the University of Toronto's Department of Laboratory Medicine and Pathobiology. This is the first fund in the world that enables young physicians from the developing world to train and ultimately strengthen forensic capacity in their own countries. This fellowship provides financial support to trainees whose countries may not be able to fund a year of training in Canada, particularly those from the West Indies.

The Raymond Chang Foundation is named for the late Toronto-based businessman and philanthropist who had a passion for adult education and was dedicated to improving opportunities where it was most needed. Born in Jamaica, Mr. Chang was a proud and active member of the Caribbean-Canadian community. He was appointed to the Order of Jamaica in 2011 and as an officer of the Order of Canada in 2014.

Raymond Chang understood the relevance of forensic pathology as a truth-seeking tool for justice. The fellowship is a legacy that lives on through the dedication of his children, Andrew Chang and Brigette Chang-Addorisio. Their generosity and shared vision has ensured a sustainable fellowship training program at the University of Toronto.

Our current fellows are:



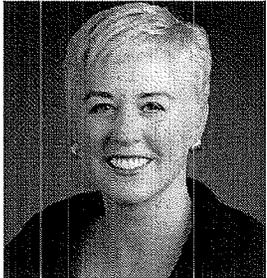
Trudy-Ann Brown MBBS DM Pathology received her Bachelor of Medicine and Bachelor of Surgery from the University of the West Indies (UWI), Mona, Jamaica in 2008. She completed her residency in Anatomical Pathology at the UWI.



Natasha Richards MBBS DM Pathology received her MBBS (Bachelor of Medicine Bachelor of Surgery) degree at the University of the West Indies (UWI), Mona in 2009. She completed her Doctor of Medicine in Anatomical Pathology at UWI, Mona in November in 2015.

#### Recruitment of Forensic Pathologists

The capacity of the OFPS has been enhanced through the recent addition of talented new recruits:



Jane W. Turner MD PhD has been appointed medical director of the Hamilton Forensic Pathology Unit. Dr. Turner received her medical degree from Saint Louis University School of Medicine and did her residency training in anatomic and clinical pathology at St. John's Mercy Medical Center in Missouri. She completed her forensic pathology fellowship at Saint Louis University School of Medicine/City of St. Louis Medical Examiner's Office. Dr. Turner is a diplomate of the American Board of

Pathology in Anatomic, Clinical and Forensic Pathology. From 1998 to 2016, she was an assistant medical examiner for the City of St. Louis. She joined the staff as a forensic pathologist in Hamilton in 2016 and was appointed a professor in the Department of Pathology and Molecular Medicine at McMaster University.



Brett Danielson MD received his Doctor of Medicine from the University of Manitoba in 2010. He completed his residency in anatomical pathology and forensic pathology at U of T and passed the RCPSC examination in Anatomical Pathology in 2015 and in Forensic Pathology in 2016. Dr. Danielson joined the Northeastern Regional Forensic Pathology Unit in Sudbury as a staff forensic pathologist in July 2016 to strengthen the OFPS's service delivery to Northern Ontario.



Ingo von Both MD PhD completed his residency in anatomical pathology at the University of Cologne, Germany, followed by a PhD. He came to Toronto in

2000, where he was a post-doctoral fellow at Mount Sinai Hospital and then a research associate at SickKids. He completed his residency in anatomical pathology in 2015 and in forensic pathology in 2016, both at U of T, passing the RCPSC examinations in those years. Dr. von Both joined the Provincial Forensic Pathology Unit at the Forensic Services and Coroner's Complex in July 2016 to augment forensic pathology capacity in the Greater Toronto Area.

#### Retirement of Dr. Chitra Rao



Dr. Chitra Rao retired from the Hamilton (Gordon V. Torrance) Forensic Pathology Unit and McMaster University in 2016. She was the longest practicing female forensic pathologist in Ontario. Dr. Rao graduated from Darbhanga Medical College, Bihar, India in 1966. She completed a pathology residency in Bangalore, India in 1970, and did further residency training at University of Toronto in 1978, and at McMaster University from 1978 to 1980. She was a forensic pathologist in Hamilton from 1984 and medical director of the unit from 1993 to 2010. An

associate professor of pathology at McMaster, Dr. Rao was programme director for general pathology from 1996 to 2004, coordinated post-graduate education for residents in forensic pathology and also taught medical students and other learners, including police.

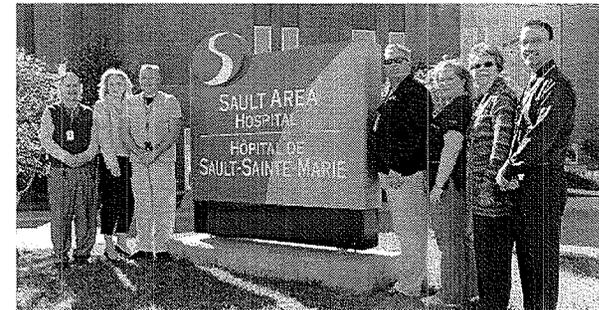
Dr. Rao performed thousands of hospital and medicolegal autopsies including homicides and suspicious cases. She acted as a consultant for both the prosecution and defence, giving expert evidence at all levels of court in Ontario and Nova Scotia and providing opinions in a variety of cases, including child abuse cases, an area of special interest. She participated in many professional bodies, including the American Academy of Forensic Sciences and the Canadian Society of Forensic Sciences, where she was a board member and the chair of the medical section. Dr. Rao published numerous articles in peer reviewed journals and has been a member of various committees of the Office of the Chief Coroner.

#### Forensic Pathology Units

##### Sault Ste. Marie Forensic Pathology Unit

The Sault Ste. Marie Forensic Pathology Unit is led by the Medical Director, Dr. Michael D'Agostino. Approximately 100 autopsies were performed in 2016, with the support of a Category B pathologist, three pathologist assistants and hospital technical and administrative staff.

The unit teaches students from medical schools around the province, pathologist assistant students from Western University on an elective rotation, as well as police and Centre of Forensic Sciences staff.



Sault Ste. Marie Forensic Pathology Unit

**Eastern Ontario Regional Forensic Pathology Unit (Ottawa)**

The Eastern Ontario Forensic Pathology Unit has four full-time forensic pathologists who performed just over 700 medicolegal autopsies in 2015/2016, as well as autopsies for the Chief Coroner for Nunavut. All forensic pathologists hold academic appointments at the University of Ottawa and teach in the Faculty of Law and to residents in Anatomical Pathology, as well as to residents at the University of Toronto.

Other activities of Ottawa forensic pathologists include:

- teaching to external partners, including the Canadian Police College
- presenting at provincial, national and international meetings, including the National Association of Medical Examiners (NAME), the American Academy of Forensic Sciences and the British Association in Forensic Medicine
- participating in academic and professional activities:
  - Dr. Parai is chair of the forensic pathology section of the Canadian Association of Pathologists (CAP) and the chair-elect of the Royal College Specialty Committee in Forensic Pathology
  - Dr. Kepron is a member of Deaths Under Five Committee of the Office of the Chief Coroner
  - Dr. Walker teaches at the University of West Indies in Jamaica

- Dr. Milroy serves as Chair of and Dr. Kepron is a member of the Royal College Examiners Committee in Forensic Pathology, as well as Dr Parai (bilingual examiner) in her role as Specialty Chair
- Dr. Milroy is associate editor of the Journal of Forensic and Legal Medicine and was guest editor for Academic Forensic Pathology All members of the Unit have been active in publishing
- Dr Milroy serves on the Board and Executive of the National Association of Medical Examiners

The second annual conference in Forensic and Pediatric Pathology, chaired by Drs. Walker and Kepron, took place in Ottawa in September 2016. This very successful meeting included speakers from Europe and the U.S., as well as Canada.

**Hamilton Forensic Pathology Unit**

The Hamilton Forensic Pathology Unit at the Hamilton Health Sciences Centre is affiliated with McMaster University. Forensic pathologists hold academic appointments and teach residents in anatomical and general pathology, medical students and undergraduates.

Since the last annual report, there have been several staffing changes:

- Dr. Jane Turner was recruited from St. Louis University in Missouri where she was professor and director of

the fellowship program in forensic pathology. In April 2017, she was promoted to medical director of the unit

- Dr. John Fernandes continues as a member of the forensic team, and continues in his role as Chief of Laboratory Medicine and Medical Director of Hamilton Regional Laboratory Medical Programme (HRLMP)
- Dr. Andreea Nistor, the first graduate of the forensic pathology residency program at McMaster, passed the Royal College of Physicians and Surgeons of Canada examination in forensic pathology in 2016. She is now employed as a forensic pathologist in Saskatchewan
- Dr. Elena Bulakhtina is on a leave of absence
- Dr. David Chiasson has been providing coverage one weekend per month
- Dr. Allison Edgecombe provided forensic pathology and teaching services before her departure for Ottawa
- Dr. Vidhya Nair provides Category B service and cardiovascular consultations and directs the General Pathology Program at McMaster University
- Dr. Sahar Al-Haddad provided locum coverage as a Category B pathologist for five months
- Dr. Linda Kocovski, a resident in forensic pathology for the 2016/2017 academic year, joins the staff of the

Hamilton Forensic Pathology Unit in July 2017

- Two part-time mortuary support staff have been hired, augmenting assistance for medicolegal autopsies

**Kingston Forensic Pathology Unit**

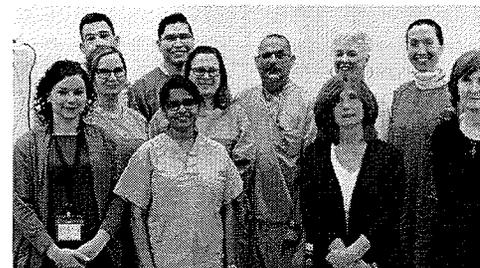
The Kingston Forensic Pathology Unit at Kingston General Hospital is affiliated with Queen's University. In 2015/2016, about 200 medicolegal autopsies were performed.

Dr. Kris Cunningham continues to play a role at the unit with monthly medicolegal work rounds, teaching to Queen's University Anatomical Pathology residents and undergraduate life science students, and consultations related to cardiovascular, surgical and autopsy pathology, and medicolegal autopsy issues.

Monthly medicolegal work rounds are regularly teleconferenced to Lindsay and Peterborough to allow participation by local coroners. This initiative, which started in 2015, is a collaboration between the Regional Supervising Coroner Dr. Paul Dungey and Kingston Forensic Pathology Unit. There are plans to expand this to other sites in our region.



The second annual conference in Forensic and Pediatric Pathology in Ottawa



Hamilton Forensic Pathology Unit



Kingston Forensic Pathology Unit

### London Forensic Pathology Unit

The London Forensic Pathology Unit, serving southwestern Ontario, is based in the Department of Pathology and Laboratory Medicine at London Health Sciences Centre (University Hospital). In 2015/2016, the unit performed about 521 medicolegal autopsies.

Dr. E. Tweedie coordinates the forensic course offered in the Bachelor of Medical Sciences and Master of Clinical Sciences (MClSc) – Pathologists' Assistant (PA) programs at Western University.

Dr. E. Tugaleva is the medical director of the MSc PA program and assists Dr. N. Chan, the program director. A highly competitive program, its graduates have been successful in attaining employment in Canada and United States. Dr. Tugaleva published a large retrospective study of hanging deaths in the Journal of Forensic Sciences. She and Dr. M. Shkrum, the Medical Director of the Unit, supervised Audrey Evetts's MSc thesis. Her research was based on body and organ measurements from about 1000 sudden infant deaths investigated by the Office of the Chief Coroner.



London Forensic Pathology Unit



Northeastern Regional Forensic Pathology Unit

Dr. Shkrum's current motor vehicle-related research focuses on pediatric motor vehicle occupants injured in collisions. This is a conjoint study involving Transport Canada and the trauma program at London Health Sciences Centre.

### Northeastern Regional Forensic Pathology Unit (Sudbury)

The Northeastern Regional Forensic Pathology Unit (NERFPU) of Health Sciences North in Sudbury is affiliated with Laurentian University and the Northern Ontario School of Medicine. In 2015/2016, about 400 medicolegal autopsies were performed. With the retirement of Dr. Alex Steele, NERFPU has taken on medicolegal autopsies from the North Bay region.

After spending the last two months of his forensic pathology residency at NERFPU, Dr. Brett Danielson joined the pathology group in July 2016 as a full-time forensic pathologist. He passed the Royal College of Physicians and Surgeons of Canada examination in forensic pathology in fall 2016.

### Provincial Coroner Dispatch

Provincial Dispatch is the single point of contact to notify any coroner in Ontario of a death that may require investigation. The computer-aided, centralized, 24/7 dispatch service, located at the Forensic Services and Coroner's Complex (FSCC), ensures that the right coroner is assigned to investigate each death while creating a digital record to capture case information in real time. The team of 14 dispatchers receives approximately 300 phone calls and makes 700 outgoing calls in each 24-hour period, resulting in coroners dispatched to over 20,000 cases per year.

Dispatch staff are also responsible for receiving and releasing each of the nearly 3500 bodies that arrive at the FSCC for examination or storage.

### Collaboration with the Victorian Institute of Forensic Medicine

The Victorian Institute of Forensic Medicine (VIFM) in Melbourne, Australia, operates under the auspices of the Department of Justice and the Department of Forensic Medicine at Monash University. The VIFM provides forensic medical and scientific services to the Australian justice system and works with international organizations, including the International Committee of the Red Cross, the World Health Organization and agencies of the United Nations.

The OFPS, the Provincial Forensic Pathology Unit (PFPU) and the VIFM collaborate in teaching, quality assurance and exchange of best practices. Some autopsy reports written by the Chief Forensic Pathologist for Ontario are peer reviewed by VIFM forensic pathologists.

In June 2016, a video-conference was organized involving medical professionals from the VIFM and OFPS to discuss ethics and professionalism in forensic pathology.

### Forensic Pathologist-Coroners

In 2013, the Ontario Government directed that forensic pathologists be appointed as coroners for cases of suspicious death or homicide, ensuring the public and the courts benefit from their expertise throughout death

investigations. In these cases, the forensic pathologist appointed as coroner is responsible for identification, the completion of all required documentation, family communication, autopsy, the Report of the Post-mortem Examination, the Coroner's Investigation Statement and the Medical Certificate of Death. The model promotes collaboration among all coroners, including attending scenes together and sharing ideas and perspectives to support professional development.

Implementation began in 2014, with forensic pathologists at the Provincial Forensic Pathology Unit in Toronto appointed as coroners. The first phase involves criminally suspicious and homicide cases investigated by the Toronto Police Service (TPS). In 2016, the program was expanded to the Eastern Ontario Forensic Pathology Unit in Ottawa.

During this report period, Forensic Pathologist-Coroners have been involved with 83 death investigations.

### First Nations Liaison

Ontario's death investigation system is committed to meeting the needs of First Nations communities.

Dr. Kona Williams is a forensic pathologist at the Provincial Forensic Pathology Unit (PFPU) and is First Nation (Cree and Mohawk). She serves as a role model for the Indigenous community, mentoring and inspiring youth and students. Since joining the PFPU in 2016, she has had operational experience with remote First Nations communities.

A pilot project has been initiated to most effectively utilize Dr. Williams' connection to First Nations in high profile cases requiring medicolegal autopsies. She is:

- building on existing relations between the OCC/OFPS and First Nations/Indigenous communities as established by the Regional Supervising Coroner;
- increasing First Nations/Indigenous communities' awareness of the role of forensic pathologists and willingness of the death investigation system to consider religious/cultural accommodations; and
- connecting to and communicating with families and community leaders in difficult cases.

## International Assistance and Capacity Development

Ontario has a history of providing leadership and support to international Disaster Victim Identification missions. These humanitarian missions are assembled following natural or human-caused disasters where help is needed to identify victims. The OFPS has participated internationally with Interpol, the International Committee of the Red Cross (ICRC), the Federal Bureau of Investigation and other experts from the forensic community.

Some nations do not have a robust system of forensic medicine to uphold human rights and justice. Dr. Pollanen, in his roles as Ontario's Chief Forensic Pathologist and program director for U of T's Centre for Forensic Science and Medicine, has worked to build forensic medicine capacity and support human rights investigations in areas such as the Middle East, South Asia, Africa and the Caribbean. Some of this work has involved United Nations agencies and the International Criminal Court, as well as the ICRC. In 2016, Dr. Pollanen visited the Medico Legal Directorate in Baghdad, Iraq as a consulting forensic pathologist and visiting professor. Future partnerships may include Central America and China.

In 2016, the Provincial Forensic Pathology Unit (PFPU) hosted a number of international guests and observers:

- Dr. Pierre-Antoine Peyron, Departement de Medecine Legale, Montpellier, France
- Dr. Pengyao Liu, Forensic Center of Heilongjiang Police Department, Heilongjiang, People's Republic of China
- Dr. Zaid Ali Hassan Al-Ali, Dr. Abdulhameed Osama A. Alhamed Abdulhamed and Dr. Mustafa Abdulrasool A. Hussein Alkhaleli, Medico Legal Directorate, Baghdad, Iraq
- Dr. Seekena Goodwin, University Hospital of the West Indies, Mona, Jamaica
- Ms. Shen Yiwen, Shanghai Association of Forensic Science, Shanghai, People's Republic of China
- Prof. Tim Lyons, The University of Newcastle, Newcastle, Australia
- Dr. Linda Iles, Victorian Institute of Forensic Medicine, Melbourne, Australia
- Dr. Bilal Sablough and Dr. Abdul Annous, International Committee of the Red Cross- Beirut Delegation, Beirut, Lebanon

- Dr. Sohyung Park, National Forensic Service, Seoul, South Korea
- Dr. Maria Paolo Bonasoni, Bologna, Italy
- Dr. Katuscia Bisogni, Calabria, Italy
- Dr. Khaled Hindi, Kuwait Institute for Medical Specialization, Kuwait City, Kuwait
- Dr. Sherece Ali and Dr. Julien Charles, Charlevoix, Trinidad and Tobago
- Ms. Moon-Young Kim, Department of Forensic Science, Seoul National University College of Medicine, Seoul, South Korea

In 2015, the PFPU entered into a Memorandum of Understanding with the Institute for Forensic Science and Legal Medicine (IFSLM), Ministry of National Security, Jamaica to support professional development in forensics. The PFPU will host forensic pathologist trainees, pathologist assistants, administrators and others from IFSLM as observers to promote best practices in forensic medicine.

## Professional Activities and Outreach

Registered pathologists and forensic consultants enrich the practice of forensic science and medicine by participating in provincial, national and international professional organizations such as the Ontario Association of Pathologists, Canadian Association of Pathologists, National Association of Medical Examiners, Canadian Society of Forensic Sciences, American Academy of Forensic Sciences, the International Association of Forensic Sciences and other organizations.

OFPS forensic pathologists participate in activities of the Royal College of Physicians and Surgeons of Canada that focus on the promotion and accreditation of forensic pathology and anatomical pathology in Canada.

This past year, OFPS pathologists lectured and delivered courses to audiences that included forensic pathologists and scientists, medical practitioners, the judiciary, lawyers, police, advocacy groups and others.

OFPS pathologists serve as members of editorial boards of international peer-reviewed forensic journals, and act as reviewers for other specialist journals.

## Scholarly Activities

### Teaching

Most forensic pathologists and forensic consultants hold academic appointments at their respective universities. They teach undergraduate and graduate forensic science students, medical students, pathologist assistant and physician assistant students, dentists, nurses, medical artists, law students, medical imaging residents, and pathology and forensic pathology residents. Forensic Pathology Units also host many medical students and pathology residents from Canadian universities and elsewhere.

The Provincial Forensic Pathology Unit is participating in the University of Toronto's Department of Laboratory Medicine and Pathobiology's digital library by providing digital histological images of forensic interest for the educational purposes of pathology residents.

Forensic pathologists also act as visiting faculty to foreign universities.

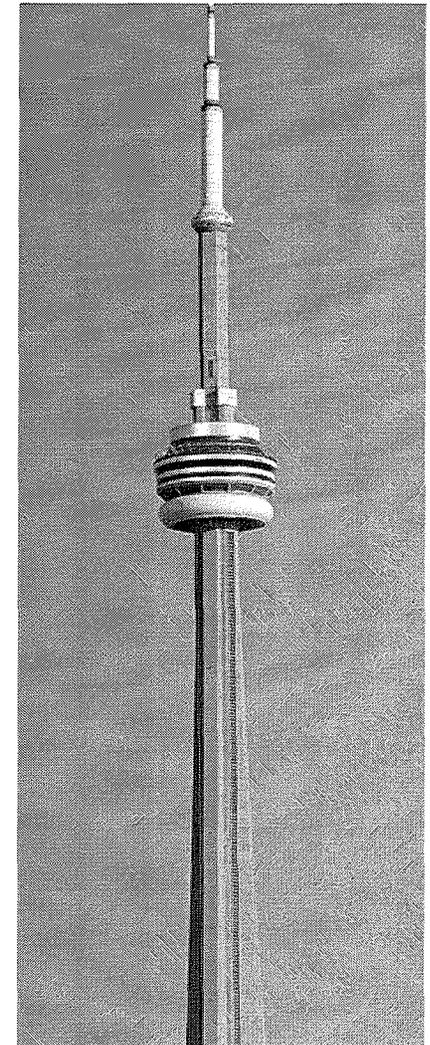
In 2016, the PFPU partnered with the "LAWS" initiative of the Toronto District School Board, the University of Toronto Faculty of Law and Dsgoode Hall Law School to pilot an educational program for Grade 11 students to understand forensic pathology, its intersection with the law, and the different career options available in the field. Two case-based sessions, for more than 100 students each, were offered at the Forensic Services and Coroner's Complex. The students were exposed to a wide range of forensic specialties involved in a case.

### Research

Forensic pathologists contribute to and support research aimed at understanding causes of sudden death and improving public safety.

Dr. Mike Shkrum, Medical Director of the London Forensic Pathology Unit, performs research into injuries resulting from motor vehicle crashes:

- Director and Principal Investigator, Motor Vehicle Safety (MOVES) Research Team, funded by Transport Canada
- Principal Investigator, Study of causes of fatal collisions



CN Tower

- in urban and rural regions in Canada (MOVES Research Team). Supervisor of MSc student, J. Roos: thesis Etiology of Motor Vehicle Collision Fatalities in Urban and Rural Canada
- Supervisor of MSc student, P. Schroeder on Prospective study of pediatric motor vehicle rear occupants injured in collisions, funded by Children's Health Foundation, London Health Sciences Centre

Dr. Elena Tugaleva and Dr. Mike Shkrum are co-supervisors of MSc candidate A. Evetts, Department of Pathology, Schulich School of Medicine, Western University: thesis Body and Organ Measurements in Neonates and Infants: An Autopsy Study.

#### Papers Published by OFPS-Affiliated Staff Working in Forensic Pathology Units

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#### Book Chapters

The Lawyer's Guide to the Forensic Sciences edited by Caitlin Pakosh, Erwin Law Inc., 2016. Chapter 18: Forensic Pathology by Forensic Pathologists of the Provincial Forensic Pathology Unit of Toronto (Dr. Maggie Bellis, Dr. Kristopher Cunningham, Dr. Anita Lal, Dr. Jayantha Herath, Dr. Michael Pickup, Dr. Michael S. Pollanen, Dr. Ashwyn Rajogopalan, Dr. Toby H. Rose)

#### Goals for Next Year

The OFPS plans to:

- Continue implementing the strategic objectives of our Plan 2
- Host the 21st Triennial Meeting of the International Association of Forensic Sciences in Toronto in August 2017

#### Our People



#### OFPS Directorate

Michael POLLANEN  
Toby ROSE  
Kathy GRUSPIER  
Effie WALDIE  
Rina KHOKHAR  
Cathy ARABIAN  
Judith DE SOUZA  
Jodi MAYNARD  
Sophia GEORGE  
Rosa VIOLILLO  
James PARRY  
My Phuong PHAM

Chief Forensic Pathologist  
Deputy Chief Forensic Pathologist  
Forensic Anthropologist  
Strategic Advisor  
A/Administrative Coordinator to the CFP  
Pathology Administrator  
Pathology Administrator  
Pathology Administrator  
A/Pathology Administrator  
Pathology Administrator  
Project Manager, IAFS 2017  
Project Assistant, IAFS 2017

## Operational Services

Martin CHICILLO	Director, Operational Services
Reshmy SATHYAN	Executive Assistant
Bonita ANDERS	Manager, Quality & Information Management
Lisa PERRI	Quality & Information Management Analyst
Scott PIMENTEL	Systems Officer
Andrew STEPHEN	Information Management Lead
Nadia UDDIN	Lead, Business and Technology Solutions
Nasim HUSNANI	Manager, Business Services
Ramona BHAGWANDIN	Program Assistant
Maxine COOMBS	Office Services Coordinator
Alice GONSALVES	Office Services Coordinator
Yasmin NOWSHERWANJI	Office Services Coordinator
Vicki STAMML	Office Services Coordinator
Laura DONALDSON	Manager, Business Planning & Controllershhip
Diana SANTAMARIA	Financial Analyst
Anna TORRIANO	Financial Officer
Burcu SEMIZ	Financial Officer
Cheryl MAHYR	Issues Manager
Reed CARROLL	Manager, Security and Facilities Management

## Provincial Forensic Pathology Unit

Jayantha HERATH	Medical Director and Forensic Pathologist
Kristopher CUNNINGHAM	Forensic Pathologist/Cardiovascular Pathologist
Maggie BELLIS	Forensic Pathologist
Rebekah JACQUES	Forensic Pathologist
Sarah KEATING	A/Forensic Pathologist
Anita LAL	Forensic Pathologist
Noel MCAULIFFE	Forensic Pathologist
Michael PICKUP	Forensic Pathologist
Ashwyn RAJAGOPALAN	Forensic Pathologist
Ingo VON BOTH	Forensic Pathologist
Kona WILLIAMS	Forensic Pathologist
Trudy-ann BROWN	Forensic Pathology Fellow
Natasha RICHARDS	Forensic Pathology Fellow
Andrew WILLIAMS	Forensic Pathology Fellow
Jeffrey ARNOLD	Manager, Forensic Services
Amber MANOCCHIO	Assistant Manager, Forensic Services
Lucy COSTA	Administrative Assistant
Monique BARBEAU	Forensic Imaging Technologist
Jennifer CLEMENT	Forensic Imaging Technologist
Julia PRENTICE	Forensic Imaging Technologist
Dawn THORPE	Forensic Imaging Technologist
Miguel ARIAS	Coordinator, Autopsy Services

Meredith BERGGREN	A/Forensic Pathologist's Assistant
Jessie COTTON	Forensic Pathologist's Assistant
Maureen CURRIE	Forensic Pathologist's Assistant
Shelby DEAN	A/Forensic Pathologist's Assistant
Taylor GARDNER	Forensic Pathologist's Assistant
Terry IRVINE	Forensic Pathologist's Assistant
Solange MALHOTRA	Forensic Pathologist's Assistant
Guisepe MENDIZABAL ARBOCCO	A/Forensic Pathologist's Assistant
Tiffany MONK	Forensic Pathologist's Assistant
Yolanda NERKOWSKI	Forensic Pathologist's Assistant
Stephanie SANTANGELO	Forensic Pathologist's Assistant
Irina SHIPILOVA	Forensic Pathologist's Assistant
David LARRAGUIBEL	Forensic Photography Technologist
Vi-Chi TRAN	Forensic Photography Technologist
Amanda (Amy) FONG	Histotechnologist
Christiane GUILLETTE	Histotechnologist
Amanda ANTENUCCI	Forensic Services Technologist
Gillian CURRIE	Forensic Services Technologist
Sincere IP	Forensic Services Technologist
Zhanna KONOVALOVA	A/Forensic Services Technologist
Vincenzo PACHECO	Forensic Services Technologist
Sonia SANT	Forensic Services Technologist
Joanne WHITNEY	Manager, Dispatch Services
Jason CAMPITELLI	Dispatch/Morgue Attendant
Julie CROWE	Dispatch/Morgue Attendant
Kayla TREMBLETT	A/Dispatch/Morgue Attendant
Daniel FRANEY	Dispatch/Morgue Attendant
Tanya HATTON	Dispatch/Morgue Attendant
Noelle KELLY	Dispatch/Morgue Attendant
Ron LITTLEJOHN	Dispatch/Morgue Attendant
Lyndsey MACEWEN	Dispatch/Morgue Attendant
Valerie MAJIK	A/Dispatch/Morgue Attendant
Jessica NAUMOVSKI	Dispatch/Morgue Attendant
Stephanie SKIRROW	Dispatch/Morgue Attendant
Renato TANEL	Dispatch/Morgue Attendant
David TODD	Dispatch/Morgue Attendant
Debra WELLS	Dispatch/Morgue Attendant
Lesley-Anne WESTBY	Dispatch/Morgue Attendant
Renee KOSALKA	Forensic Anthropologist
Greg OLSON	Forensic Anthropologist
Sherah VANLAERHOVEN	Forensic Entomologist
Bruce PYNN	Forensic Odontologist
Bob WOOD	Forensic Odontologist
D'Arcy LITTLE	Forensic Radiologist
William HALLIDAY	Neuropathologist
Lili HAZRATI	Neuropathologist
Julia KEITH	Neuropathologist
David RAMSAY	Neuropathologist

### Hamilton Forensic Pathology Unit

Jane TURNER	Medical Director
Elena BULAKHTINA	Forensic Pathologist
David CHIASSON	Forensic Pathologist
John FERNANDES	Forensic Pathologist
Linda KOCOVSKI	Forensic Pathology Fellow
Vidhya NAIR	Cardiovascular Pathologist
Boleslaw LACH	Neuropathologist
John PROVIAS	Neuropathologist
Tracy ROGERS	Forensic Anthropologist
Murray PEARSON	Forensic Odontologist
Danny POGODA	Forensic Odontologist
John THOMPSON	Forensic Odontologist

### London Forensic Pathology Unit

Michael SHKRUM	Medical Director and Forensic Pathologist
Elena TUGALEVA	Forensic Pathologist
Edward TWEEDIE	Forensic Pathologist
Christopher ARMSTRONG	Pathologist
Nancy CHAN	Pathologist
Bertha GARCIA	Pathologist
Aaron HAIG	Pathologist
Christopher HOWLETT	Pathologist
Jeremy PARFITT	Pathologist
Joanna WALSH	Pathologist
Lee-Cyn ANG	Neuropathologist
Robert HAMMOND	Neuropathologist
David RAMSAY	Neuropathologist
Mike SPENCE	Forensic Anthropologist
Mark DARLING	Forensic Odontologist
Stanley KOGON	Forensic Odontologist
Thomas MARA	Forensic Odontologist

### Eastern Ontario Forensic Pathology Unit

Christopher MILROY	Medical Director and Forensic Pathologist
Allison EDGECOMBE	Forensic Pathologist
Charis KEPRON	Forensic Pathologist
Jacqueline PARAI	Forensic Pathologist
Alfredo WALKER	Forensic Pathologist
Eric BELANGER	Cardiovascular Pathologist
John VEINOT	Cardiovascular Pathologist
Gerard JANSEN	Neuropathologist
John WOULE	Neuropathologist
David CAMELLATO	Forensic Odontologist
Chris CLARKE	Forensic Odontologist

### Ottawa Children's Hospital of Eastern Ontario

Jean MICHAUD	Neuropathologist
Joseph DE NANASSY	Pediatric Pathologist
David GRYNSPAN	Pediatric Pathologist
Elizabeth NIZALIK	Pediatric Pathologist

### Kingston Forensic Pathology Unit

David HURLBUT	Medical Director and Pathologist
John ROSSITER	Neuropathologist
David BERMAN	Pathologist
Alexander BOAG	Pathologist
Tim CHILDS	Pathologist
Christopher DAVIDSON	Pathologist
Patricia FARMER	Pathologist
David LEBRUN	Pathologist
Marosh MANDUCH	Pathologist
Paul MANLEY	Pathologist
Neil RENWICK	Pathologist
Mark SCHNEIDER	Pathologist
Sandip SENGUPTA	Pathologist
Sonal VARMA	Pathologist
Ami WANG	Pathologist
Iain YOUNG	Pathologist

### Hospital for Sick Children

David CHIASSON	Section Head Autopsy Services/Forensic Pathologist
Gregory WILSON	Pediatric Pathologist
Cynthia HAWKINS	Neuropathologist
Lili-Naz HAZRATI	Neuropathologist

### Northeastern Regional Forensic Pathology Unit

Martin QUEEN	Medical Director and Forensic Pathologist
Brett DANIELSON	Forensic Pathologist
Silvia GRAHAM	Neuropathologist
Scott FAIRGRIEVE	Forensic Anthropologist
Scott KEENAN	Forensic Odontologist

### Sault Ste. Marie Forensic Pathology Unit

Michael D'AGOSTINO	Medical Director/Pathologist
Paul MOZAROWSKI	Pathologist
Kelli-Ann LEMIUEX	Administrative Director
Annette MACUMBER	Administrative Assistant
Dan DEPSQUALE	Pathologist's Assistant
Derek KLEINSTEUBER	Pathologist's Assistant

### Mount Sinai

Eric MORGEN	Perinatal Pathologist
Patrick SHANNON	Perinatal Pathologist

### Community Pathologists

Chhaya ACHARYA	Bluewater Health
Nihad AL-RIDHA	Mackenzie Richmond Hill Hospital
Pat ALLEVATO	Windsor Regional Hospital Metropolitan Campus
Ali AMER	Thunder Bay Regional Health Sciences Centre
Reza BEHJATI	Orillia Soldier's Memorial Hospital
Pravin BHAVSAR	Grand River Hospital Kitchener-Waterloo Centre
Brian CUMMINGS	Grand River Hospital Kitchener-Waterloo Centre
Ardit DEJALLISI	Grey Bruce Health Services
Franco DENARDI	Greater Niagara General Hospital - St. Catharines Site
Dimitrios DIVARIS	Grand River Hospital Kitchener-Waterloo Centre
Dina ELDEMELLAWY	Children's Hospital of E. Ontario
Yasser EL-GOHARY	Windsor Regional Hospital Metropolitan Campus
Peter ENGBERS	Woodstock General Hospital
Nicholas ESCOTT	Thunder Bay Regional Health Sciences Centre
Ram GIDWANI	Bluewater Health
Julien HART	Joseph Brant Memorial Hospital
Angela HAWORTH	Joseph Brant Memorial Hospital
Prashant JANI	Thunder Bay Regional Health Sciences Centre
Chaozhe (Bell) JIANG	Joseph Brant Memorial Hospital
Suhas JOSHI	Greater Niagara General Hospital - St. Catharines Site
Shiv KAPUR	Royal Victoria Regional Health Centre
Dimitri KOUTSOGIANNIS	Greater Niagara General Hospital - St. Catharines Site
Adriana KRIZOVA	St. Michael's Hospital
Annie KURIAN	Bluewater Health
Dong LIU	Woodstock General Hospital
Rosemary LUBYNSKI	Bluewater Health
Kelly MACDONALD	Lake of the Woods District Hospital
Kerry MACDONALD	Lake of the Woods District Hospital
Karen MACNEILL	Royal Victoria Regional Health Centre
Shahid MALIK	Bluewater Health
Zbigniew MANOWSKI	The Trillium Health Centre - Mississauga Site

Leena NARSINGHANI  
Ken NEWELL  
John PENSWICK  
Russell PRICE  
Paul RA Windsor  
Roland RIECKENBERG  
Sajid SHUKOOR Windsor  
Abdul SYED  
Syed Fasahat WASTY  
David WELBOURNE

Royal Victoria Regional Health Centre  
Grey Bruce Health Services  
Muskoka Algonquin Health Care  
Royal Victoria Regional Health Centre  
Regional Hospital Metropolitan Campus  
Orillia Soldier's Memorial Hospital  
Regional Hospital - Ouellette Campus  
Royal Victoria Regional Health Centre  
St Thomas-Elgin General Hospital  
Thunder Bay Regional Health Sciences Centre

**Ontario Forensic Pathology Service**

Forensic Services and Coroner's Complex

25 Morton Shulman Avenue

Toronto, Ontario, M3M 0B1

Tel: 416-314-4040

Email: [ofps@ontario.ca](mailto:ofps@ontario.ca)

This is Exhibit "H" referred to in the Affidavit of Michael S. Pollanen affirmed July 6,2018

A handwritten signature in cursive script, appearing to read "Larina R.", is written over a horizontal line.

*Commissioner for Taking Affidavits (or as may be)*

# A sustainable future

## Our Plan: The Ontario Forensic Pathology Service (2015-2020)



## INTRODUCTION

The Ontario Forensic Pathology Service (OFPS), along with the Office of the Chief Coroner and the Operational Services Branch, forms a division of the Ministry of Community Safety and Correctional Services. Together, we deliver public death investigation services. In addition, the Forensic Pathology Units of the OFPS are strongly linked to academic departments of Pathology and Laboratory Medicine in the Faculties of Medicine across Ontario<sup>1</sup>.

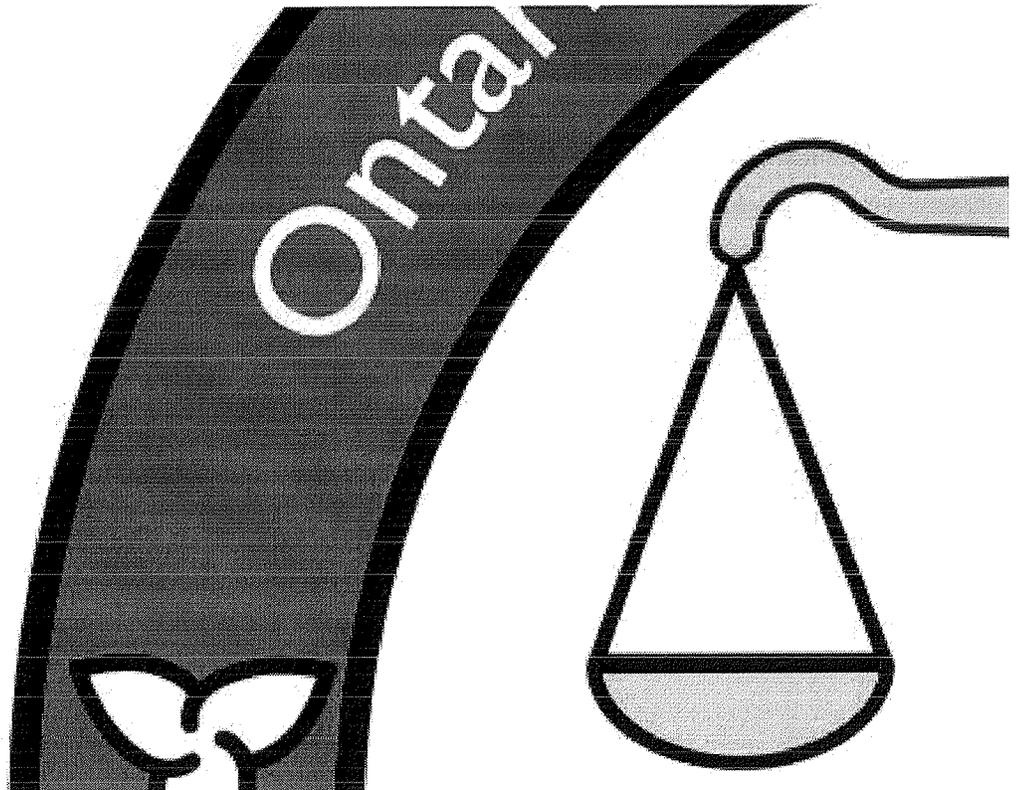
Now in its sixth year, the OFPS has created a joint five-year strategic plan with its divisional partners. Based on this strategic plan, the OFPS has also developed a supporting implementation plan to follow our successful<sup>2</sup> start-up plan (Our Plan, 2009-2014) that responded to the Inquiry into Pediatric Forensic Pathology and amendments to the Coroners Act in 2009. The OFPS has implemented all the objectives outlined in our start-up plan to provide the basis for growth in the next five years.

Recent developments to the death investigation system include the advent of forensic pathologist-coroners and the relocation of our headquarters to the Forensic Services and Coroner's Complex (FSCC), a state-of-the-art facility.

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<sup>1</sup>The Chief Forensic Pathologist and the Medical Directors of each of the Forensic Pathology Units have professorial appointments to corresponding Faculties of Medicine and are responsible for the delivery of the academic mandate of forensic pathology in these medical schools.

<sup>2</sup>See our *Our Plan, 2010-2015* and our annual reports available at [http://www.mcscs.jus.gov.on.ca/english/DeathInvestigations/Pathology/Publications/ofps\\_publications.html](http://www.mcscs.jus.gov.on.ca/english/DeathInvestigations/Pathology/Publications/ofps_publications.html)



## OUR DIVISIONAL STRATEGIC PLAN

The divisional strategic plan defines our shared strategy for the next five years, 2015-2020.

Our vision is high quality death investigation for a safer and healthier Ontario.

Our mission is to provide high quality death investigation that supports the administration of justice, the prevention of premature death, and is responsive to Ontario's diverse needs.

Our values are integrity (we remember that the pursuit of truth, honesty and impartiality are the cornerstones of our work); responsiveness (we embrace opportunities, change and innovation); excellence (we constantly strive towards best practice and best quality); accountability (we recognize the importance of our work and will accept responsibility for our actions); and diversity (we respect a diverse team with different backgrounds, professional training and skills).

The OFPS is committed to service, research, and teaching.

The divisional strategic plan sets out four strategic priorities to guide the death investigation system in Ontario:

1. A sustainable and effectively resourced system: Provincial complement of highly qualified human resources, supported by modern processes, systems, infrastructure, and technology.
2. Effective, relevant and reliable services: System delivers effective and efficient investigation and certification of deaths, and high quality forensic medicine and autopsy services.
3. Leverage data, build knowledge and provide education: Robust data creates knowledge and drives education and innovation in death investigation and forensic medicine.
4. Improve the health and safety of Ontarians: Enhanced review mechanisms and stronger partnerships contribute to a safer and healthier Ontario.

## OUR IMPLEMENTATION PLAN

1. A SUSTAINABLE AND EFFECTIVELY RESOURCED SYSTEM: PROVINCIAL COMPLEMENT OF HIGHLY QUALIFIED HUMAN RESOURCES, SUPPORTED BY MODERN PROCESSES, SYSTEMS, INFRASTRUCTURE, AND TECHNOLOGY.

### 1.1 Develop our team

The OFPS is comprised of a talented and diverse team of professionals with different skills from administrative, medical, technical and corporate backgrounds. The success of the OFPS depends on recruiting, mentoring, developing and retaining our valued workforce across the province, including ministry employees, and those in Forensic Pathology Units and community hospitals. All Forensic Pathology Units face pressures, including increasing case numbers at the Provincial Forensic Pathology Unit (PFPU), as well as a shortage of qualified forensic pathologists and funded forensic pathology positions. We also recognize difficulties for our community hospitals and pathologists in maintaining medicolegal autopsy services when faced with health care responsibilities. We must ensure sufficient resources are available to achieve the level of service expected of us by coroners, the public and the criminal justice system.

This implementation objective can be achieved by:

1. Ensuring professional development and learning plans for staff are in place.
2. Ensuring faculty appointments for forensic pathologists and other staff.
3. Ensuring that Forensic Pathology Units are adequately resourced to meet workload including anticipated transfer of cases from community hospitals to FPU.

## **1.2 Grow and sustain forensic pathology in Northern Ontario**

Forensic pathology services should be consistent in quality and availability across Ontario. This is a challenge in Northern Ontario with fly-in and remote communities, which are often First Nations. OFPS best practice is to provide autopsy services regionally, rather than transport a body to Southern Ontario for autopsy.

This implementation objective can be achieved by:

4. Establishing a Forensic Pathology Unit in Sault Ste. Marie.
5. Expanding and strengthening regionally-based autopsy services in Northern Ontario.
6. Developing a strategy to meet the needs of First Nations and remote communities in the provision of autopsies.

## **1.3 Use new technology to enhance forensic pathology**

At the FSCC, the PFPU has access to imaging facilities that include CT scanning and Magnetic Resonance imaging to enhance autopsies by documenting findings. The global forensic pathology community is actively engaged in determining how best to utilize this new technology. This will be achieved by working with our colleagues in diagnostic imaging.

This implementation objective can be achieved by:

7. Exploring the routine use of CT scanning as an ancillary method to autopsy.
8. Developing postmortem CT angiography.
9. Exploring the selective use of Magnetic Resonance imaging in autopsy.



#### **1.4 Maintain high ethical standards for the management of retained organs, tissues, body fluids and DNA from autopsies**

We are responsible for the management of retained organs, tissues, body fluids and DNA from medicolegal autopsies. In doing so, it is important to maintain high ethical standards to justify public confidence in our work.

This implementation objective can be achieved by:

10. Continuing central storage of historically retained organs at the Forensic Services and Coroner's Complex.
11. Ensuring that organ retention practices meet current scientific and ethical standards.
12. Developing a plan for retention and disposition of postmortem DNA samples for use in molecular autopsy.

## **2. EFFECTIVE, RELEVANT AND RELIABLE SERVICES: SYSTEM DELIVERS EFFECTIVE AND EFFICIENT INVESTIGATION AND CERTIFICATION OF DEATHS, AND HIGH QUALITY FORENSIC MEDICINE AND AUTOPSY SERVICES.**

### **2.1 Utilize the expertise of forensic pathologists to strengthen the death investigation system**

In 2013, following an external review and a recommendation from the Death Investigation Oversight Council, the Minister of Community Safety and Correctional Services directed that forensic pathologists be appointed coroners for cases of homicide and criminally suspicious deaths. In July 2014, the OFPS implemented forensic pathologist-coroners at the PFPU for cases involving Toronto Police Service. We need to further phase-in appointments across Ontario.

This implementation objective can be achieved by:

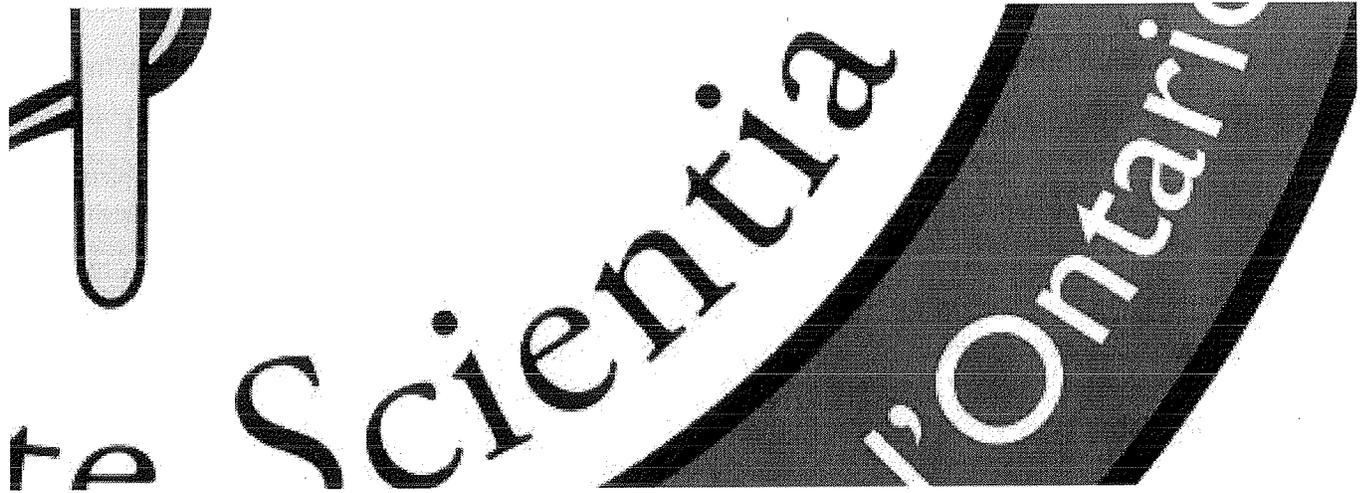
13. Introducing forensic pathologist-coroners at additional Forensic Pathology Units.
14. Developing a role for forensic pathologist-coroners for cases involving arrest and detention by police.
15. Developing a strategy to increase the detection of concealed homicides.

### **2.2 Enhance collaboration between coroners and pathologists to ensure uniformity in cause of death determination and to maximize identification of unidentified human remains**

Collaboration between coroners and pathologists leads to enhanced results in all aspects of death investigation, including death certification and identification of unidentified remains. In some cases, there may be a discrepancy between a pathologist's opinion on the cause of death and a coroner's certification of the cause of death. A unified death investigation system should have a mechanism to resolve such discrepancies. Furthermore, the death investigation system should have as a priority the identification of unidentified human remains to help families whose loved ones are missing.

This implementation objective can be achieved by:

16. Working with the Office of the Chief Coroner to determine how often and why discrepancies exist between the cause of death in a pathologist's autopsy report and the coroner's death certificate.



17. Developing a mechanism to resolve discrepancies between the cause of death certified by the coroner and the cause of death established by the pathologist.
18. Collaborating with the death investigation team and partners to identify human remains that are persistently unidentified.

### **2.3 Continuing to improve the quality of medicolegal autopsies and forensic medicine**

The medicolegal autopsy is a core function of a death investigation system. Information from autopsies is used by many parties including the coroner, family, police, criminal justice system, child protection services, hospitals, the Special Investigations Unit, and many other stakeholders. We must constantly strive to improve the quality and timeliness of our work to maintain the confidence of our stakeholders.

Furthermore, cases of serious assault with a surviving victim can often benefit from the review and interpretation of injuries by a forensic expert. Involvement of a forensic pathologist in such cases can also be of value to the criminal justice system.

This implementation objective can be achieved by:

19. Building on our current performance expectations to enhance the quality of the autopsy practice of registered pathologists.
20. Developing an electronic Laboratory Information Management System (LIMS) for the PFPU.
21. Exploring certification of the OFPS by the National Association of Medical Examiners.
22. Continuing to provide expert opinions in clinical forensic medicine.

## **3. LEVERAGE DATA, BUILD KNOWLEDGE AND PROVIDE EDUCATION: ROBUST DATA CREATES KNOWLEDGE AND DRIVES EDUCATION AND INNOVATION IN DEATH INVESTIGATION AND FORENSIC MEDICINE.**

### **3.1 Sustain medical education and capacity development in forensic pathology**

To serve the forensic pathology needs of Ontario, the founding model for the OFPS was the self-sustaining cycle of “service, research and teaching” (sometimes called knowledge translation). Our most important educational activity is to train the next generation of anatomical, general and forensic pathologists in the art and science of forensic pathology.

Our commitment includes investment in education and capacity development in forensic pathology in support of justice and human rights both here and abroad. Some international initiatives will benefit from the new Raymond Chang Forensic Pathology Fellowship, which enables young physicians from the developing world to train and strengthen forensic capacity in their own countries.

This implementation objective can be achieved by:

23. Maintaining the residency training programs in forensic pathology accredited by the Royal College of Physicians and Surgeons of Canada (RCPSC).
24. Continuing to train anatomical and general pathologists as well as other relevant medical specialists.
25. Maintaining CEPD activities for pathologists and forensic pathologists.
26. Promoting forensic pathology-related careers through outreach to medical students, undergraduate forensic students, and others, including high school students.
27. Maintaining fellowship and observership programs for forensic physicians from low and middle-income countries, including administering the Raymond Chang Forensic Pathology Fellowship.
28. Participating internationally in forensic humanitarian efforts after natural disaster or internal armed conflict.
29. Contributing to the creation and maintenance of University of Toronto's Department of Laboratory Medicine and Pathobiology (LMP) electronic repository, the LMP Digital Laboratory Medicine Library of digitized pathology and laboratory medicine images.

### **3.2 Sustain continuing education and professional development (CEPD) in forensic medicine/death investigation for our partners**

Many stakeholders in the death investigation system benefit from the educational and CEPD activities of the OFPS. Some stakeholders require only a general awareness of forensic pathology, whereas others must have the ability to critically analyse forensic pathology issues. A main function of the OFPS is to provide this knowledge to others.

This implementation objective can be achieved by:

30. Maintaining CEPD activities in forensic pathology for police.
31. Maintaining CEPD forensic literacy conferences for physicians, lawyers and judges.
32. Maintaining educational activities for pathologist assistants and other non-medical professionals in forensic medicine.
33. Delivering the 21st Triennial Meeting of the International Association of Forensic Sciences in 2017 in Toronto<sup>3</sup>.

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<sup>3</sup>The Chief Forensic Pathologist is the President of the International Association of Forensic Sciences (2014-2017).



### 3.3 Support research in forensic pathology

The evidence-based practice of forensic pathology depends on research. Forensic pathologists contribute to and support research aimed at understanding causes of sudden death and improving public safety. It is a goal of the OFPS to perform and broaden research into all facets of forensic pathology. Research in forensic pathology is largely retrospective, based on information from multiple sources (e.g., police, coroners, pathologists, forensic scientists). The “robustness” or quality of the data supporting the research depends on the identification and retrieval of applicable cases and on the accuracy of the information.

This implementation objective can be achieved by:

34. Encouraging publication in peer reviewed journals and presentations at forensic pathology conferences.
35. Defining OFPS research priorities and encouraging collaboration among FPU and members of the death investigation team.
36. Encouraging prospective research.

## 4. IMPROVE THE HEALTH AND SAFETY OF ONTARIANS: ENHANCED REVIEW MECHANISMS AND STRONGER PARTNERSHIPS CONTRIBUTE TO A SAFER AND HEALTHIER ONTARIO.

### 4.1 Make positive impacts on public health and safety

In deaths investigated by coroners, forensic pathologists contribute to public health by working with partners to make tissues available for transplantation, diagnose inherited disorders, detect infectious diseases, and understand hospital deaths. Coroners and pathologists play a role in the investigation of incidents that result in multiple deaths.

The FSCC includes facilities for obtaining donated tissues for transplantation to living patients (e.g., skin for treatment of living burn patients, after consent from the next-of-kin). The OFPS has a goal of increasing the availability of tissue for transplantation.

Molecular autopsy laboratories at the FSCC and Kingston General Hospital have been established to help diagnose genetic conditions that cause sudden cardiac death with the goal of preventing premature deaths in surviving family members. Currently, the laboratory at the FSCC isolates and stores DNA, which can then be used for genetic screening.

The FSCC also has a separate, secure and enclosed autopsy suite to provide containment for biosafety risks up to containment level 3 (CL3), infectious agents that may cause serious or potentially lethal disease after inhalation. The new suite has been designed to meet all applicable biosafety standards and PFPU staff have been specially trained in the required procedures.

In addition, pathologists play a role in understanding hospital deaths (often after complex therapeutic intervention) where questions remain about diagnosis or treatment. Modern patient safety and evidence-based medicine movements have emphasized data-driven approaches to systemic improvements. On this basis, a standard approach to these autopsies will improve our contribution to the broader healthcare system.

In Ontario, it is often difficult for families to obtain answers about a loved-one's death that does not require medico-legal death investigation. In the past, forensic pathologists have occasionally performed family-consent autopsies when approached. Consideration should be given to providing family-consent autopsies sustainably and accessibly.

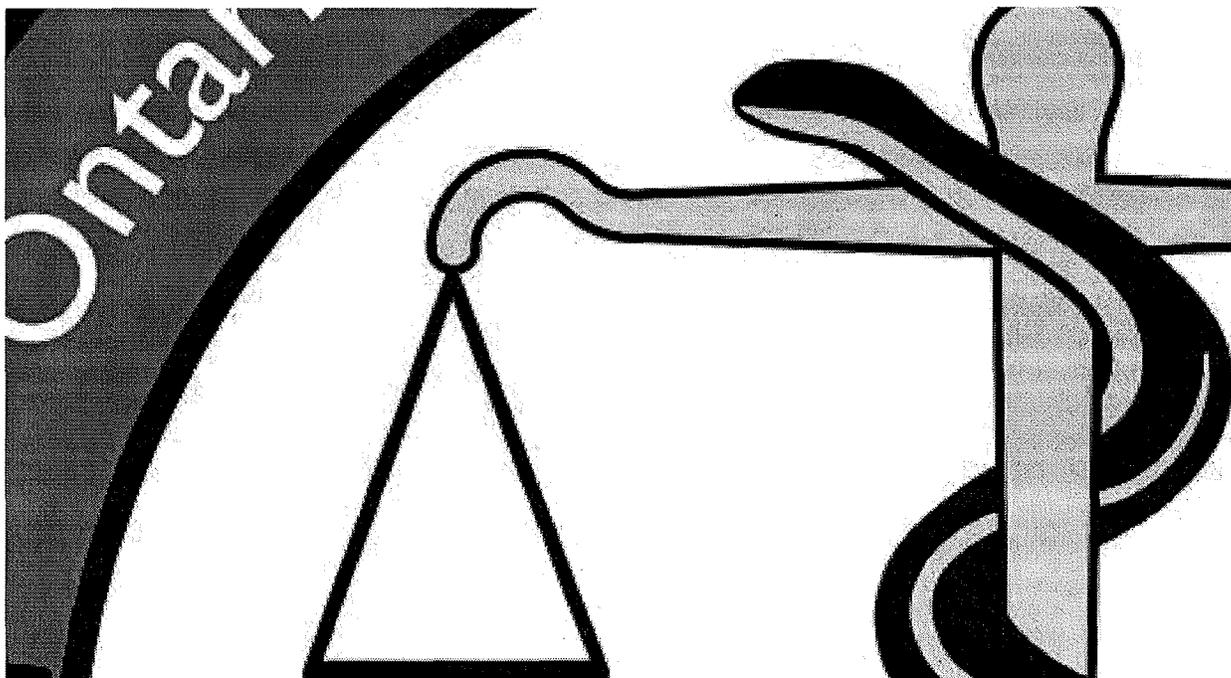
In planning for and managing cases of multiple fatalities, forensic pathologists and forensic anthropologists work with partners including first responders, emergency management, coroners and other investigators in the interest of the public and families.

This implementation objective can be achieved by:

37. Increasing postmortem tissue donation for transplantation by collaborating with coroners and Trillium Gift of Life and utilizing facilities at the FSCC and hospitals across Ontario.
38. Developing a sustainable strategy for molecular autopsy for the benefit of surviving relatives.
39. Implementing the use of the CL3 autopsy facility at the PFPU for suspected cases of disease caused by level 3 pathogens.
40. Considering the redistribution of complex medical and post-operative hospital cases for autopsy at Forensic Pathology Units.
41. Continuing to support the work of coroners by testifying at inquests and participating in death review committees.
42. Exploring the need for and the required resources to provide family-consent autopsies at the PFPU.
43. Ensuring that the Forensic Pathology Units have updated plans and training for managing a multiple fatality event, in alignment with the provincial multiple fatality plan.

## MEASURING OUR SUCCESS

We will continue to track and publicly report on our progress in implementing these activities in future annual reports.



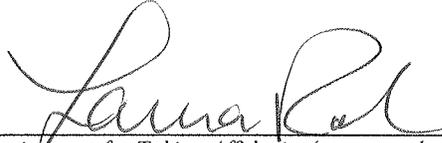
## CONCLUDING REMARKS

This is an exciting time for the death investigation system. The OFPS has a strong foundation built over the past five years. Our goal for the future is to sustain and improve the practice of forensic pathology. Our full potential, in supporting the aspirations of our divisional strategic plan, will be realized through effective collaboration with our death investigation staff and partners, the medical and legal communities and academia.

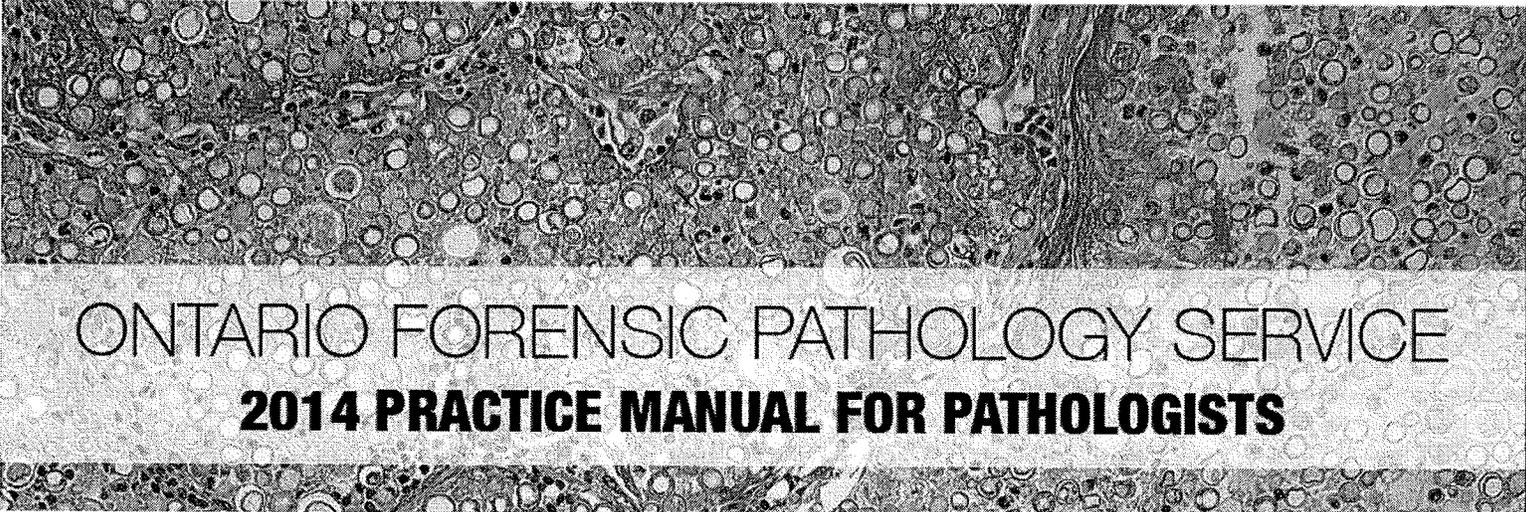
We are proud to share the newly adopted logo of the OFPS that unites the symbol of the medical profession with the scales of justice and represents medicolegal autopsy practice at the intersection of medicine and the law. The logo also incorporates the motto of the OFPS: *Ex morte scientia* - From death, knowledge. This logo showcases the distinctive accountabilities, strengths, and expertise of the OFPS as a full partner in death investigation. In the future, we hope to develop a unified logo to help us educate the public about death investigation and the complementary roles of the OCC and OFPS.



This is Exhibit "T" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018

A handwritten signature in black ink, appearing to read "Larina K.", written over a horizontal line.

*Commissioner for Taking Affidavits (or as may be)*



ONTARIO FORENSIC PATHOLOGY SERVICE  
**2014 PRACTICE MANUAL FOR PATHOLOGISTS**

# Preface

## Ontario Forensic Pathology Service

The *Coroners Act* defines the roles and responsibilities of pathologists in death investigation and enhances the quality, organization and accountability of forensic pathology services. The *Coroners Act*:

- Defines the Ontario Forensic Pathology Service (OFPS) as the unified system under which pathologists provide forensic pathology services, including autopsies.
- Defines the position of the Chief Forensic Pathologist as overseer of forensic pathology services.
- Defines the positions of the Deputy Chief Forensic Pathologist and pathologist.
- Requires a registry of pathologists accredited to perform medicolegal autopsies.
- Requires the Chief Forensic Pathologist to communicate with the College of Physicians and Surgeons of Ontario on adverse findings related to competency and professionalism of a registered pathologist.

Registered pathologists have legal authority under the *Coroners Act* to attend scenes and to order ancillary tests as required, pursuant to their duties.

## Practice Manual for Pathologists

The Practice Manual for Pathologists comprises the:

- A. Code of Ethics
- B. Practice Guidelines for Medicolegal Postmortem Examinations;
- C. Quality Management System; and
- D. Pathologist Register Protocol.

Together, these documents provide the professional and policy foundation for the OFPS and promote consistent and high quality practices across Ontario.

## **Forensic Pathology Advisory Committee (FPAC)**

This Practice Manual was developed using a consultative approach by obtaining the input from the Forensic Pathology Advisory Committee (FPAC) of the OFPS. The members are:

**Dr. Michael Pollanen**, Chief Forensic Pathologist (Chair)  
**Dr. Toby Rose**, Deputy Chief Forensic Pathologist  
**Dr. Jayantha Herath**, Medical Director, Provincial FPU  
**Dr. Dirk Huyer**, Chief Coroner of Ontario  
**Dr. John Fernandes**, Medical Director, Hamilton FPU  
**Dr. Chris Milroy**, Medical Director, Eastern Ontario Regional FPU (Ottawa)  
**Dr. Michael Shkrum**, Medical Director, London FPU  
**Dr. Martin Queen**, Medical Director, Northeastern Regional FPU (Sudbury)  
**Dr. Kris Cunningham**, Medical Director, Kingston FPU  
**Dr. Satish Chawla**, Representative, Ontario Association of Pathologists  
**Dr. David Chiasson**, Senior Forensic Pathologist, SickKids

*On the Cover: Pulmonary Blastomycosis*

## **Contact**

### **Ontario Forensic Pathology Service (OFPS)**

Forensic Services and Coroner's Complex  
25 Morton Shulman Avenue  
Toronto, Ontario, M3M 0B1  
Tel: (416) 314-4040  
Email: [ofps@ontario.ca](mailto:ofps@ontario.ca)

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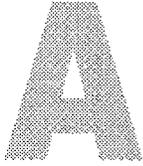
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## Section A - Code of Ethics

### Preamble

Pathologists are physicians who often practice in a legal context. This context is different in every province and territory, but we are united in the values we hold and our commitment to the principles of good medical practice. We aspire to practice our branch of medicine according to the highest standards in the world.

### Fundamental Duties

- I. We have a duty to the medicolegal death investigation system in which we practice. We will follow the laws, regulations and practice guidelines that are in place where we work. We will participate in the development of these laws, regulations and practice guidelines when invited to do so. If we have an honest disagreement with the leaders of the system in which we practice, we will be forthright and respectful in our opposition.
- II. We have a duty to the court system. We are independent, neutral, scientific agents who are obliged to tell the truth and to strive to leave a truthful impression. We serve the court, not the prosecution and we will make ourselves available to attorneys representing the prosecution and the defence. We recognize that our duty may extend beyond the end of our testimony. We will preserve, describe, document and catalogue evidence according to the highest standards of practice in this area.
- III. We have a duty to our profession. We will be active participants in professional societies, associations and other organizations that promote good pathology practice. We recognize the value of vigorous debate and discussion and we will engage in these activities in a way that respects the professional judgement and autonomy of other pathologists. We will train the next generation of pathologists.
- IV. We have a duty to forensic science and medicine. We are dedicated to the advancement of the forensic sciences. We will continuously challenge our own assumptions and test them against the best available current evidence. We will challenge each other's assumptions. We will engage in mutually respectful debate and discussion. We will learn new skills and contribute to the development of new techniques.
- V. We have a duty to society. We will communicate effectively and truthfully with members of the public. We will educate the public about what we do and the importance of what we do. We will be advocates for good pathology practice.

# B

## Section B - Practice Guidelines for Medicolegal Postmortem Examinations

### 1. General Practices for medicolegal postmortem examinations

#### 1.1 Introduction

These Practice Guidelines are intended to assist the pathologist in deciding how best to perform medicolegal postmortem examinations. For the purposes of this document, a practice guideline should be viewed as an adequate standard. The applicability of a practice guideline in a specific case is balanced by the state of the body (e.g., decomposition), information known at the time of the postmortem examination and professional judgment. The practice guidelines are not designed to inhibit professional autonomy, but were developed to:

- Ensure completeness of the postmortem examination.
- Minimize non-reviewable errors at postmortem examination.
- Ensure appropriate samples are collected at postmortem examination.
- Ensure appropriate ancillary testing is performed after postmortem examination.

These Practice Guidelines replace previously distributed guidelines and memos relating to medicolegal postmortem examinations, unless otherwise referenced or stated.

For the purposes of this document, *homicide* is defined as death due to the actions of another person or persons. A *criminally suspicious* case will be defined as a death that may be related to the action of another person or persons and may lead to criminal charges. It is recognized that some factors may limit the application of the guidelines in specific instances. These situations commonly include (but are not limited to) the following situations:

- Hospitalization.
- Decomposition, including skeletonization.
- Partial remains (i.e., absent body parts).
- Embalmed body.

These Practice Guidelines were designed to assist pathologists to ensure the quality of medicolegal postmortem examinations. Improper use of this document by non-forensic pathologists is discouraged.

## **1.2 Role of the pathologist**

The main roles of the pathologist in a medicolegal postmortem examination are to:

- Attend or assess scenes as required either before or after the postmortem examination.
- Perform the medicolegal postmortem examination as directed by the warrant.
- Obtain the assistance of any person or persons in performing the postmortem examination and in conducting any other examinations and analyses.
- Conduct or direct any person other than a coroner to conduct other examinations and analyses that he or she considers appropriate in the circumstances.
- Provide a professionally independent and impartial opinion on the cause and mechanism of death and other medicolegally relevant issues within the scope of forensic and anatomic/general pathology.
- Report preliminary findings to the Chief Forensic Pathologist (CFP), the coroner and investigators as appropriate.
- Provide a final report of the postmortem examination and any other examinations or analyses to the coroner, the regional coroner and to the CFP.
- Provide expertise to the coronial or legal system.

Medicolegal postmortem examinations are not the same as hospital postmortem examinations. Medicolegal postmortem examinations are performed to advance a death investigation in the interest of the public. In addition, the medicolegal postmortem examination does not require consent by the next-of-kin and can be performed despite objections of the family. Thus, the pathologist has additional ethical obligations to the next-of-kin and the general public to ensure that the principles of medical ethics are observed. This includes respect for the dignity of the deceased and medical confidentiality.

In some cases, a cause of death or suspected cause of death may have health implications for surviving family members (e.g., inherited heart disease or thrombophilic syndrome). The pathologist may suggest to the coroner that first-degree relatives be investigated for such a disorder.

The main roles of the forensic pathologist in an individual homicide or criminally suspicious case are to:

- Attend or assess scenes as required either before or after the postmortem examination.
- Perform the medicolegal postmortem examination as directed by the warrant.
- Obtain the assistance of any person or persons in performing the postmortem examination and in conducting any other examinations and analyses.
- Conduct or direct any person other than a coroner to conduct other examinations and analyses that he or she considers appropriate in the circumstances.
- Provide a professionally independent and impartial opinion on the cause and mechanism of death and other medicolegally relevant issues within the scope of forensic pathology.
- Report preliminary findings to the Chief Forensic Pathologist (CFP), the coroner and investigators as appropriate.
- Provide a final report of the postmortem examination and any other examinations or analyses to the coroner, the regional coroner and to the CFP.
- Participate as team member in the death investigation by providing expertise in forensic pathology.
- Provide expertise to the criminal justice system.

### **1.3 Attendance at the postmortem examination**

Attendance at the postmortem examination is limited to technical staff (e.g., pathologist assistants), medical professionals, appropriate trainees, coroners and investigators from relevant agencies including police, fire and traffic. In cases where the Special Investigations Unit (SIU) investigates a death, the postmortem examination will be attended by the SIU, but police are typically not permitted to attend. Any decision to deviate from this protocol will be taken jointly by the pathologist and the regional coroner.

The family may request that other individuals be allowed to attend a postmortem examination, based on religious, cultural or spiritual beliefs. These requests should be considered on an individual basis and in consultation with the CFP and regional coroner.

#### **1.4 Documentation and disclosure**

The pathologist must ensure that all samples collected at the postmortem examination are documented in the report, including:

- Tissues retained and fixed in formalin.
- Whole organs or en bloc specimens.
- Trace evidence, or other physical exhibits from the body.
- Swabs and smears.
- Samples of tissues or body fluids for toxicology, biochemistry, or microbiology testing.
- Postmortem radiographs.
- All photographs and digital images taken by investigators or the pathologist, including images of fixed tissues or organs.
- Tissue samples referred to consultants.

The pathologist must ensure that all consultation and laboratory reports are referenced in the postmortem examination report.

Disclosure refers to the provision by the pathologist of reviewable documents and photographs that derive from the postmortem examination for the purpose of a court proceeding. The pathologist must provide copies of the postmortem report and other documents when requested by appropriate counsel.

#### **1.5 Continuity**

Continuity of the body confirms that the autopsy is being done on the correct body. The continuity of the body must be confirmed by the pathologist, who must be satisfied before starting the autopsy that the body is the one referred to in the coroner's warrant. Continuity can be confirmed by such means as a police seal or appropriate nametag, or the body may be directly identified to the pathologist by the coroner, police or other authorized person. If the pathologist is not satisfied, he or she must ask the coroner to validate the continuity. The postmortem examination report should indicate how continuity was achieved.

#### **1.6 Identification**

Formal legal identification of the body is the responsibility of the coroner. If identification cannot be established in the community setting, consultation with a forensic pathology unit with identification expertise should be obtained. This should be facilitated through the Regional Supervising Coroner (RSC).

For cases that present as unidentified or presumptively identified, the pathologist must notify the appropriate RSC office once the identity has been confirmed using the Notice of Identification Form via EATS email or fax.

Continuity of the body and identification must be established before the body is released. Forensic pathology units and pathology departments should have a protocol in place to confirm the identity of a body before it is released.

### 1.7 Role of the assistant

Technicians and pathologists' assistants are integral and valuable participants in postmortem examinations who work under the direction and supervision of the pathologist. The scope of their duties in any postmortem examination will be determined by the extent of their training and experience and the nature of the case.

Dissection must not start until the pathologist has personally confirmed continuity/identity and has completed the external examination of the body. Duties that can be performed by appropriately trained and experienced technicians or pathologists' assistants include: opening the body and head, eviscerating the organs (the method of organ removal is up to the pathologist), weighing organs, sample collection and reconstruction of the body. However, the pathologist must perform dissection of the individual organs. This dissection can also be performed by residents and fellows under the supervision of the pathologist. The scope of duties of residents and fellows must be appropriate to their level of training and the type of case.

### 1.8 Collection and submission of toxicologic samples

Routine samples must be collected in all medicolegal postmortem examinations. The samples should include heart blood, peripheral (femoral) blood and urine, where available. Other samples including liver (if blood is absent) or stomach contents may be collected at the discretion of the pathologist. If samples are not submitted for toxicology testing, blood and urine samples are sent for storage at the Provincial Forensic Pathology Unit in Toronto.

Toxicology testing is not required for all cases and should only be requested if required for determining the cause of death or a pertinent medicolegal issue. Toxicology samples should be submitted as soon as possible with sufficient information to permit the forensic toxicologist to decide on the type and scope of laboratory testing. Information required on the submission form includes the clinical history (or investigative background) and major anatomical findings at postmortem examination. Toxicology testing will be performed using the following categories:

- **Alcohol only.** This includes ethanol, acetone and other volatile substances in an ethanol intoxication-related death. It is not necessary to request alcohol testing in sudden natural deaths of chronic alcoholics, if there is a satisfactory anatomical cause of death.

- **Exclusionary toxicology.** Exclusionary toxicology screening for drugs of abuse and alcohol is indicated in cases with a potential anatomical cause of death (injury or disease), but where toxicology is required to exclude drugs/alcohol as a contributory factor. Common examples include drowning, or ischemic heart disease with a past history of illicit drug use.
- **Possible drug/alcohol-related deaths.** Deaths caused by acute drug or alcohol toxicity typically have no anatomical cause of death and occur in circumstances suggestive of drug/alcohol use (e.g., history of drug abuse, pill material in the stomach). In these cases, it is important to provide information about the drugs that maybe involved in death.

Toxicology is performed in homicides and is also required in the following cases:

- Sudden/unexpected deaths in infants and children under five.
- Workplace deaths subject to mandatory inquest.
- Fatal motor vehicle collision.
- Aviation deaths.
- Fire-related deaths (at least carboxyhemoglobin).

### 1.9 Tissue and organ retention, storage and disposition

Regulation 180 under the Coroners Act addresses the retention of tissues and organs after medicolegal postmortem examinations and sets out retention periods for different categories of specimens. If there is a reason for early disposal or extended retention of any specimen, the pathologist must obtain the approval of the Chief Forensic Pathologist and Chief Coroner in writing (Request for Retention of Specimens Form).

#### Whole organs or substantial portions of organs

Retention of any whole organ (e.g., brain or heart) and/or any substantial portion of an organ from a medicolegal postmortem examination must be authorized by the Chief Forensic Pathologist or designate. In general, a "substantial portion" of an organ is anatomically recognizable by a lay person. This does not refer to stock jars or larger "surgical specimen"-type samples.

Retention of a whole organ and/or a substantial portion of an organ from a medicolegal postmortem examination should be considered and authorization obtained if retention is required to:

1. Determine the cause of death or a significant medicolegal issue (e.g., mechanism of injury) in a case that is likely to enter the criminal justice system.
2. Diagnose a heritable, rare or obscure condition or disease that has probable implications for the healthcare of the family.

In most cases, retention of a whole organ and/or a substantial portion of an organ from a medicolegal postmortem examination can be avoided by overnight fixation followed by histologic sampling, with return of the organ to the body before the body is released to the next-of-kin via a funeral home. This is the recommended practice, particularly when a family objects to organ retention.

Ordinarily, brains from cases of sudden unexplained deaths in childhood or infancy (e.g., SIDS) should not be retained. Pediatric brains can be adequately examined and sampled after rapid fixation. Neuropathologic examination can also be performed on fixed samples obtained from the brain.

If retention of a whole organ and/or a substantial portion of an organ is authorized, the pathologist must notify the coroner orally and in writing (Form 1.0 Notification to Coroner of Organ Retention) at the conclusion of the postmortem examination to ensure the family is notified and they provide disposition instructions. The preliminary and final postmortem examination reports must indicate which organs and/or substantial portion of organs were retained.

Requests for neuropathology or cardiovascular pathology consultations should be made in writing (Cardiovascular Pathology Request Form and Forensic Neuropathology Request Form).

Once examination of the whole organ is complete, the organ must be retained for two years unless approval is obtained for early disposal or extended retention from the Chief Forensic Pathologist and Chief Coroner in writing (Request for Retention of Specimens Form).

### Disposition

At the end of the postmortem examination, all organs and tissues must be returned to the body. The organs and tissues should be placed in a bag and into the thoracoabdominal cavity. The body must be reconstructed by suturing the torso and scalp incisions before it is released to the funeral homes.

When the family has requested through the coroner (Form 2.0 Disposition Request of Retained Organs) that a retained organ or substantial portion of an organ should be returned to them, this should be arranged through the funeral home.

The best practice for disposition of any retained organs and tissues that are not to be returned to the family is cremation through a funeral home.

### Stock jars

Pathologists can retain stock jars of small representative tissue samples in formalin from any autopsy. These samples are to be retained for two years after the postmortem examination.

### Slides, paraffin blocks and dried blood samples

Adult cases: Slides, paraffin blocks and dried blood samples are to be retained for a minimum of 20 years, after which they may be destroyed.

Pediatric cases (18 years of age or younger): Slides, paraffin blocks and dried blood samples are to be retained for a minimum of 50 years, after which they may be destroyed.

### Body fluids

Body fluids sampled for toxicology testing or storage will be retained for two years at the Provincial Forensic Pathology Unit in Toronto.

## **1.10 Complete and limited postmortem examinations**

In a complete postmortem examination, the findings of the external and internal examinations should be documented as follows:

### External examination

- Clothing and personal effects:
  - Jewellery and any personal effects should be documented and removed and returned to the family, where possible.
  - When illicit drugs or large amounts of money are found, police should be notified to attend and seize. Expensive valuables and large amounts of money can be kept in safe-keeping with security staff until release to the funeral home.
- Length and weight of the body.
- Build and nutritional state of the body.
- Identifying features:
  - Colour of hair
  - Scars and tattoos
  - Presence or absence of teeth
- Head, neck, torso, extremities, hands, fingers, external genitalia and perineum should be examined in a systematic manner, and positive findings including evidence of natural disease recorded:
  - Eyes should be examined for petechial hemorrhages.
  - Postmortem changes and the state of the body.
  - Evidence of attempted resuscitation or other therapeutic interventions.
  - Injuries should be described using the approach detailed below (see Section 1.16: Sudden death from injury (non-homicidal)).
- If there is any indication on the warrant, medical history or external examination that a medical device such as pacemaker or automatic defibrillator is present, it should be deactivated and removed from the body

prior to the start of the internal examination. The Investigating or Regional Coroner can assist in identifying the manufacturer of the device, who will deactivate the device. These items may be a hazard during the postmortem examination, funerary processes and cremation.

### Internal examination

Some postmortem examinations require both an external examination and an internal examination (by dissection). The following lists case types that almost always require an internal examination (see Limited examination for possible exclusions):

*(The asterisks indicate case types performed only by Category A and/or C Pathologists on the Register)*

1. All sudden unexpected deaths in infants and children.\*(Category A and/or Category C)
2. All sudden and unexpected deaths in young adults (mostly < 40 years of age), particularly if there is a potential to discover a heritable cause of death. Molecular autopsy may be applicable in these cases (see Section 1.12: Molecular autopsy).
3. All homicide and criminally suspicious deaths.\*(Category A)
4. All cases investigated by the Special investigations Unit (SIU) (e.g., death in police custody).\*(Category A)
5. Deaths likely due to drug/alcohol intoxication, including unexpected death in the context of chronic alcoholism.
6. Deaths likely due to trauma, where the history and circumstances are unclear about the lethality or timing of the putative injury.
7. All cases associated with extremes of temperature (e.g., heat, fire and cold) and immersion in water.
8. All unexpected deaths that are likely related to a complication of a therapeutic intervention, or with coronial concerns about the quality of healthcare.
9. Drivers and pedestrians in fatal collisions of motor vehicles. \*(Category A depending on circumstances and pending criminal charges)
10. Cases where the relevant medicolegal issues cannot be resolved by a forensic pathologist by reviewing the scene, circumstances and correlating these data with an external examination of the body.\*(Category A)

All internal examinations should include dissection and examination of the head, brain and thoraco-abdominal organs. The neck organs including the hyoid bone and tongue and the pelvic organs should also be dissected and examined. The major organs and tissues should be examined using standard dissection methods, but the precise technique is left to the discretion of the pathologist.

All major organs should be weighed and macroscopic lesions should be described.

#### Limited examination

At the discretion of the pathologist, and after discussion with the Investigating and Regional Supervising Coroner, an autopsy in certain types of cases may be limited to an external examination. For each case, the cause of death must be readily apparent by external examination and/or history, and the external examination must not reveal unexpected findings. If after discussion, there is any question about the suitability of a case for an external examination, a complete autopsy should be conducted.

Pathologists should consider any suspicious circumstances and whether there are questions that only an internal examination could answer (e.g., recurrence of cancer; medical event leading to car crash, etc.). In these cases, a complete postmortem examination must be done.

The following are types of cases where a limited postmortem examination by a Category B pathologist could be considered:

1. Apparent witnessed suicidal descent from great height or impact with a moving train or subway. (This excludes accidental descent or impact.)
2. Apparent suicidal hanging.
3. Apparent suicidal plastic bag asphyxia or exposure to asphyxiant gases (e.g., helium).
4. Apparent suicidal deaths by carbon monoxide toxicity from automobile exhaust, barbeque or other source of CO, provided that a fatal CO level is available for review by the pathologist before the body is released.

In cases of apparent suicidal gunshot wounds (to be performed by Category A pathologists only), a limited internal examination with recovery of projectiles could be performed, e.g., internal examination of head only.

Limited postmortem examinations (“external examination only”) should not be done when the purpose is to differentiate between natural disease and a toxicological cause of death. These and all other cases require complete autopsies with internal examinations by dissection.

All limited postmortem examinations require a written report. The pathologist can use the Routine Postmortem Examination Report template (see Toolkit), but with the Internal Examination portion deleted.

In case of doubt about the suitability for an “external examination only”, call the OFPS Forensic Pathologist on call through Provincial Dispatch at 416-314-4100 or at 1-855-299-4100.

In all cases, body fluid samples should be obtained for possible toxicologic analysis. If an internal examination is not performed, the body fluid samples should be obtained by percutaneous punctures.

At the end of autopsy (external, limited or complete), the pathologist should call the investigating coroner to report the findings and the Preliminary Cause of Death. This communication should be documented (see Section 1.13: Communication with police, coroner and other investigators).

### **1.11 Histology and ancillary tests**

If death has occurred due to a natural condition, histology should be used to provide reviewable documentation of the lethal disease/lesion. Routine histology of the major organs is left to the discretion of the pathologist. Histology is often not helpful in decomposed bodies.

Laboratory tests beyond histology and toxicology can be used in specific cases. The most commonly used informative tests include: microbiology, biochemistry of vitreous fluid (e.g., diabetic ketoacidosis) and genetic testing (e.g., suspected familial arrhythmic disorders in young people, genetic thrombophilias in young people with pulmonary thromboembolism).

### **1.12 Molecular autopsy**

The molecular autopsy uses DNA technology to help determine the cause of sudden death in young people, typically less than 40 years of age. Detection of genetic mutations and diagnosis of associated diseases allows for screening, diagnosis and life-saving intervention in surviving family members such as siblings or children, who may share the mutation. The molecular autopsy can detect genetic disorders that present as:

- Young people with apparent sudden death from cardiac arrhythmias with negative autopsies and structurally normal hearts (e.g., channelopathies such as long QT syndrome). This includes deaths in police custody and unexpected drowning of young people swimming in open water.
- Some types of structural cardiomyopathy (e.g., hypertrophic cardiomyopathy; arrhythmogenic cardiomyopathy [ARVC]).
- Clotting disorders (e.g., unexplained pulmonary thromboembolism).
- Connective tissue pathologies presenting as aortopathies or arteriopathies (e.g., Ehlers-Danlos or Marfan syndromes).

Cases which are strongly suspected to be due to drug overdose may not require genetic testing.

Currently, the Molecular Autopsy Laboratory at the Provincial Forensic Pathology Unit (PFPU) has the capability to receive tissue from appropriate cases and isolate DNA, which can then be used for genetic screening.

A possible genetic cause for sudden cardiac death must be considered at the time of postmortem examination when tissues are still available. Furthermore, a detailed examination of the heart is necessary to help identify or exclude subtle cardiomyopathic conditions or congenital anomalies, e.g., coronary artery anomaly.

In appropriate cases, the pathologist should use the Molecular Autopsy Collection Kit, which is available from the PFPU, to collect and submit to the PFPU biopsy cores of the recommended tissues:

- Tube 1 – cardiac muscle.
- Tube 2 – preferred  
(1)kidney (2)spleen (3)liver (4)cardiac (5)skeletal muscle.

Kits and further information can be obtained by contacting a Forensic Services Technologist at the PFPU at 416-314-4100 or at [fst@ontario.ca](mailto:fst@ontario.ca).

All tissue samples submitted will have DNA isolated and stored at the PFPU. This material will be available to family members or Arrhythmia Clinics, should testing be required in the future.

It is recommended that in cases of apparent sudden cardiac death, the Report of Postmortem Examination should:

- Consider a potentially inherited cause of death.
- Advise first degree family members to seek cardiological assessment in an Arrhythmia Clinic or Cardiomyopathy Clinic that specializes in the investigation of such cases.
- Disclosed that tissue was obtained and submitted for DNA isolation and will be stored and made available to family should testing be requested in the future.

It is most appropriate that clinical cardiologists determine the nature and scope of testing after assessing family members. However, pathologists may order testing when the results are necessary for their own investigative purposes, e.g., sudden death in the setting of police restraint, criminally suspicious deaths, etc.

Pathologists, who require assistance in interpreting cardiac pathology or who have further questions about DNA isolation and possible testing, are encouraged to contact a forensic pathologist at the PFPU at 416-314-4040 or at [ofps@ontario.ca](mailto:ofps@ontario.ca). Cardiovascular pathology consultations are available (and

encouraged) as a resource for medicolegal postmortem examinations (see Section 1.9: Tissue and organ retention, storage and disposition).

If testing is conducted, results should be included in the Report of Postmortem Examination and communicated to the coroner to share with family members. Since interpretation of such tests is very complex and requires correlation with clinical factors, final interpretation should be left for the clinical team managing the surviving family members.

### **1.13 Communication with police, coroner and other investigators**

#### *Documenting the preliminary cause of death*

If the cause of death is apparent at the conclusion of the gross examination, the pathologist should report the cause of death to the police and coroner. The police and coroner will then understand that the cause of death has been determined without requiring the results of further testing. At the conclusion of the gross examination, the cause of death provided to the police and coroner can be recorded in writing on the OFPS Preliminary Autopsy Findings.

If the cause of death is not readily apparent at the conclusion of the gross examination, the pathologist should give the cause of death as pending, under investigation or other similar language. This will ensure that the police and coroner understand that the cause of death is yet to be determined.

A preliminary opinion on the cause of death (or other critical matters such as the timing or mechanism of injury) must not be given to the police if toxicology, histology, examination of fixed tissues or organs or other ancillary testing are required to determine the cause of death. The importance of this cannot be over-emphasized. If definitive actions such as detention of a person by police are based on a preliminary opinion on the cause of death that cannot be substantiated later, then significant difficulties will arise within the justice system.

Two forms (Preliminary Police Report and Preliminary Autopsy Findings Report) are used in adult and pediatric homicide and criminally suspicious cases to facilitate information sharing between police and pathologists. These forms may also be used for routine cases to ensure effective information exchange. The Preliminary Autopsy Findings Report should be signed by both the pathologist and the police, with copies retained in their respective case files.

The pathologist's opinions should be clearly communicated to the coroner, police and other investigators and understood by them. There should be a frank and open discussion about the scope and limits of any expert opinion on the cause of death or related issues. Early case conferencing is encouraged as an effective method to ensure that frank and open discussion can occur.

#### **1.14 Communication with the Ontario Forensic Pathology Service (OFPS)**

Occasionally, pathologists may feel uncertain about performing a specific autopsy or may require advice or clarification from a senior forensic pathologist. At any time, even during an autopsy, pathologists can reach the on-call OFPS Forensic Pathologist by calling Provincial Dispatch at 416-314-4100 or at 1-855-299-4100.

Immediately following the postmortem examination, the pathologist must submit a completed electronic Postmortem Examination Record to the OFPS with information including the preliminary cause of death as provided to the coroner or to police.

#### **1.15 Sudden death from disease**

Most postmortem examinations performed in cases of sudden non-traumatic death disclose a fatal condition related to the cardiovascular system or other lethal lesion. In many cases, when the gross examination fails to reveal an anatomical cause of death, toxicologic studies will disclose that death was related to drug/alcohol use. Thus, the majority of sudden deaths can usually be explained after macroscopic, microscopic and toxicologic examinations.

However, there is a discrete group of cases of sudden death in people under 40 years of age without a demonstrable anatomic or toxicologic cause of death. Some of these cases may be related to channelopathies (e.g., long QT syndrome). In addition, many cardiomyopathies have now been shown to have a genetic basis. Genetic sampling is recommended in cases of young people without an anatomical or suspected toxicological cause of death, and in many cases of cardiomyopathy and some other disorders (see Section 1.12: Molecular autopsy).

Sudden death may also be related to epilepsy. However, it is usually unnecessary to retain the brain for neuropathologic examination in cases of seizure disorder.

When a reportable communicable disease is diagnosed, this must be reported by the pathologist to Public Health. The list of reportable diseases can be found online by searching for "Reportable Communicable Diseases".

#### **1.16 Sudden death from injury (non-homicidal)**

Many postmortem examinations performed for the coroner relate to major trauma. In these cases, the main objectives of the postmortem examination are to document injuries and to collect samples for toxicologic analysis. The injuries on the body surface and internal injuries must be adequately described in the postmortem examination report. It is unacceptable to simply list injuries without providing a description of the wounds.

The basic description of an injury is both qualitative and quantitative and should include:

- Type (e.g., contusion, abrasion, laceration).
- Location and position (e.g., forehead above the right eyebrow).
- Size, colour and shape (e.g., 5 cm linear horizontal yellow bruise).

In most cases of major blunt trauma and cases with penetrating/perforating wounds, the injuries are best described by anatomical continuity. This method of description uses a narrative that links the external and internal injuries in one section of the postmortem examination report, rather than separating the description of the external and internal injuries.

A basic description of an internal injury should include:

- Type (e.g., laceration, fracture, etc.).
- Organ or anatomic site.
- Associated hemorrhage (e.g., indicate presence of internal or soft tissue hemorrhage and measure the volume of blood in body cavities).
- In cases of hanging (suspension by ligature), adequately describe the ligature mark.

In cases of neck compression, dissection of the neck structures can be performed in situ after the removal of the brain and the thoraco-abdominal organs (layered anterior neck dissection or dry neck dissection). This will decompress the blood vessels of the neck and reduce the likelihood of artifactual hemorrhage. The strap muscles of the neck are sequentially reflected, beginning from the distal end of each individual muscle and dissecting toward the larynx. Intramuscular hemorrhage should be documented. The hyoid bone, thyroid cartilage and cricoid cartilage are then examined for fractures.

In fatal motor vehicle collisions involving pedestrians, measure the distance of injuries of the lower extremities from the heel. In addition, record the presence and location of 'dicing' injuries on decedents recovered from inside vehicles after fatal vehicular collisions.

In cases of drowning, the cause of death is determined by correlation of postmortem examination findings and the circumstantial information and involves exclusionary reasoning.

In all deaths associated with fire, describe the distribution of soot on the mucosa of the respiratory tract (if present). In non-suspicious fires where the carboxyhaemoglobin level has been measured by a hospital lab, it need not be repeated.

The extent of histological examination is left to the discretion of the pathologist. If death has occurred due to a natural condition, histology should be used to provide reviewable documentation of the lethal disease/lesion.

The pathologist may consider retaining a whole organ or a substantial portion of an organ for examination. The permission of the Chief Forensic Pathologist or designate is required if any organ is to be retained (see Section 1.9: Tissue and organ retention, storage and disposition for procedures including notification of next of kin).

Fixation and retention of an organ may be considered to:

- Determine the cause of death or a significant medicolegal issue (e.g., mechanism of injury) in a case that is likely to enter the criminal justice system.
- Diagnose a heritable, rare or obscure condition or disease that has probable implications for the healthcare of the family.

In most cases, retention of a whole organ and/or a substantial portion of an organ from a medicolegal postmortem examination can be avoided by overnight fixation followed by histologic sampling, with return of the organ to the body before the body is released to the next-of-kin via a funeral home. This is the recommended practice, particularly when a family objects to organ retention.

### **1.17 Complex cases**

Complex cases include:

- Deaths related to therapeutic complications (e.g., death during insertion of a cannula).
- Anesthetic or intra-operative deaths.
- Post-operative death.
- Deaths during or after pregnancy or delivery.
- Deaths after prolonged hospitalization.
- Obscure deaths.
- Cases with competing causes of death.

These cases are often challenging. The postmortem examination may provide the foundation for further analysis by other experts. For example, several specialty committees in the Office of the Chief Coroner review many of these cases after the postmortem examination report is issued. This ensures a multi-disciplinary team approach to some of the complex issues that go beyond the postmortem examination. The pathologist is a key contributor of the postmortem

examination findings to the larger multi-disciplinary team that will analyze the case from varying perspectives.

### 1.18 Forensic cases (homicides and criminally suspicious cases)

In general, postmortem examinations in homicide and criminally suspicious deaths will be performed in by a Category A forensic pathologist on the OFPS Register of Pathologists at a forensic pathology unit. There are specific guidelines for postmortem examinations in homicide and criminally suspicious cases. Cases to be referred to a Category A forensic pathologist include:

- Homicides and criminally suspicious cases.
- Deaths from penetrating or perforating injury, including gunshot wounds or stab wounds, even when apparently self-inflicted.
- Deaths of children (deaths of children less than 5 years of age due to non-natural causes).
- Deaths of persons where the Special Investigations Unit (SIU) is investigating because of police involvement.
- Multiple fatalities (3 or more) arising from a single incident, other than a motor vehicle collision.
- High profile deaths where significant media attention is anticipated including deaths of well-known public figures.
- Deaths attributed to fires.
- Deaths attributed to infectious diseases<sup>1</sup>, where:
  - The agent is unknown;
  - Infectious implications arise for residents either within the local environment (e.g., long-term care); or
  - Infectious implications arise for residents beyond the local environment (e.g., SARS).
- Skeletal remains and/or deaths in uncontrolled environments, such as a body in a forest.
- Aviation related deaths.

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<sup>1</sup> Suspected cases of diseases caused by risky known or newly emerging pathogens may require a medicolegal autopsy for public health purposes. The Forensic Services and Coroners Complex in Toronto has a separate, secure and enclosed suite to provide containment for biosafety risks up to containment level 3 (CL3). This level applies to infectious agents that may cause serious or potentially lethal disease after inhalation such as SARS, tuberculosis, anthrax, plague, tularemia, etc.

Autopsies on individuals who are suspected to have one of these illnesses should be performed at the FSCC CL3 suite by forensic pathologists at the Provincial Forensic Pathology Unit. A pathologist who asked to do an autopsy on such a case should contact the Regional Supervising Coroner and the OFPS on-call Forensic Pathologist at 416-314-4100 or at 1-855-299-4100.

- Deaths requiring advanced identification methods.
- Deaths where the original pathologist feels the postmortem examination should be conducted by a forensic pathologist.
- Exhumations and second postmortem examinations.

### **1.19 Postmortem examinations of infants and children (Under 5 Years)**

Postmortem examinations of infants and children are performed by Category A forensic pathologists or Category C pathologists on the OFPS Register of Pathologists:

- Homicide/criminally suspicious or accidental deaths of infants or children including all cases of abuse or neglect are performed by forensic pathologists approved for this purpose by the Chief Forensic Pathologist.
- Sudden unexpected death in infancy (SUDI) cases will be performed by a forensic pathologist, or approved by a forensic pathologist to be performed by a pediatric/perinatal pathologist. (Category C).
- Complex known congenital/pediatric diseases, post-operative deaths and deaths from therapeutic complication will usually be performed by a pediatric/perinatal pathologist.
- Perinatal death, defined as death during, at the time of, or shortly after birth, including home birth and death within one week of birth in the case of prematurity are best performed by perinatal pathologists. The placenta should accompany the infant.

The current definition of SIDS is: “the sudden death of an infant one year of age or younger, which is unexpected by the infant's history and where a thorough postmortem examination, including an autopsy, death scene investigation and review of the infant's medical history, fails to demonstrate an adequate cause of death”. The autopsy should not commence until the pathologist is satisfied with the extent of the pre-autopsy information, usually by reviewing the “Death Under 5 Questionnaire” filled out by the coroner.

Postmortem examinations of infants and children should follow the Guidelines for Autopsy Practice: Sudden Unexpected Deaths of Infants and Children Under 5 Years, Second Edition, March 2012 (see Toolkit). The guidelines give details about the special procedures to be followed in pediatric cases:

- Radiological skeletal survey prior to the autopsy must be performed and examined by a Radiologist to exclude the presence of fractures. The body must not be released until the Radiologist's oral report has been received.
- Routine body measurements appropriate for the age group.
- External and internal photographs to document positive and negative findings.

- Systemic internal examination of the head, neck, chest, abdomen and pelvis with documentation of organ weights and recommended histological sections.
- Ancillary testing in all cases including toxicology, microbiology, metabolic/genetic screening:
  - Vitreous fluid should be obtained and can be used for potential biochemical analysis at the discretion of the pathologist.
  - Other ancillary tests (e.g., skin fibroblast culture) or the retention of other tissue samples at the discretion of the pathologist.

Decision-making around organ donation in deaths of infants can be complicated and requires discussion between a forensic pathologist and a Regional Supervising Coroner (see Section 1.26: Organ and tissue donation).

### **1.20 Final postmortem examination report**

The postmortem examination report (Report of Postmortem Examination) is prepared using standardized headings to ensure provincial consistency. A suggested template is available in the Toolkit. The standardized sections are as follows:

- Demographic and related information.
- History provided to pathologist.
- Identification.
- External examination.
- Signs of recent injury.
- Internal examination.
- Ancillary tests.
- Tissue retention:
  - Details regarding retained whole organs must be noted in the postmortem examination report.
  - Example of tissue retention statement: “Small tissue samples have been retained in formalin. No whole organs have been retained.”
- Summary and opinion.
- Cause of death.
- Signature.

In the ‘Summary and Opinion’ section of the report the pathologist should briefly explain the rationale or basis for the major conclusions reached, including the cause of death.

### Cause of death

Whenever possible the cause of death statement should follow WHO guidelines using ICD10 nomenclature (i.e., 1(a) due to 1(b), etc.). There are some exceptions:

- Deaths that are causally best described in a descriptive statement.
- Deaths related to therapeutic complications. The recommended formulation is "A complicating B for the treatment of C" where A is the immediate cause of death arising from B, which denotes the medical or surgical procedure performed, due to a disease, condition or injury denoted by C (e.g., hemopericardium from right ventricle perforation complicating Swan-Ganz catheterization for the treatment of multiple trauma).

#### **1.21 "Unremarkable"**

If an organ or tissue is free of macroscopically apparent lesions, it can be described as "unremarkable" or a similar term. If an organ or tissue is "unremarkable", this implies that it has been removed, dissected and examined. If an organ has not been removed, dissected and examined, the report must indicate that the organ was "not examined" (e.g., hyoid bone, tongue, prostate, uterus, urinary bladder). The postmortem examination report should accurately reflect the extent of the internal examination. The OFPS strongly encourages examination of all organs, including those listed above, at all postmortem examinations.

#### **1.22 Timeliness of final postmortem examination reports**

Postmortem examination reports must be completed in a timely manner. However, submission of preliminary postmortem examination reports (not fully informed by ancillary testing, such as toxicology) is discouraged.

Timeliness of postmortem examination reports is a key performance indicator. Turnaround time is influenced by case complexity, return of ancillary test results, pathologist workload and staffing levels. The OFPS policy regarding turnaround time is:

- Ninety percent (90%) of autopsy reports are to be completed within 90 days of the day of the postmortem examination.
- Cases involving homicides, pediatric deaths, deaths in custody and cases in which the coroner has requested that the report be prioritized (due to requests from family or other parties) are to be expedited as a matter of routine.

- No more than 10% of cases should be greater than six months old. There must be a justifiable reason (e.g., delays caused by molecular autopsy for channelopathy, etc.) for delay in those cases.

**1.23 Submission of Report of Postmortem Examination to the OFPS**

A copy of each Report of Postmortem Examination must be provided to the investigating coroner, Regional Supervising Coroner’s Office and to the OFPS for quality assurance. The report must include all ancillary testing results and the Warrant for Postmortem Examination. Associated invoices are submitted to the Regional Supervising Coroner for payment.

**1.24 Amendment of reports**

For various reasons, a Report of Postmortem Examination may require amendment. The reasons may vary from the misspelling of a name to a substantial misinterpretation of the circumstances or the autopsy findings.

If a substantial error or inaccuracy is discovered after the report has been distributed, an amended report must be issued. The new report must be marked “Amended Report” at the top of the first page and must indicate “This report replaces the report dated (date)”.

The amended report must make clear what amendments have been made to the original report. The amended report should be submitted using the usual procedure. The original report and the amended report are retained in the case file.

Changes or amendments to reports are not to be made for reasons other than correction of errors or inaccuracies. Reports must not be amended merely at the request of a client.

**1.25 Retention of records**

The retention of records from a postmortem examination including the Report of Postmortem Examination, notes and diagrams, ancillary test results and images is as follows:

Type of Death	Retention Period
Homicide	At least 50 years following completion of final report
All other deaths	At least 20 years following completion of final report

### **1.26 Organ and tissue donation**

The OFPS and the Office of the Chief Coroner support organ and donation for transplantation whenever possible.

Category B pathologists who are asked about possible organ or tissue donation should contact the on-call OFPS Forensic Pathologist by calling Provincial Dispatch at 416-314-4100 or at 1-855-299-4100.

Discussion about organ/tissue donation needs to occur between a Category A pathologist, investigating coroner and Regional Supervising Coroner to ensure that issues raised by the death investigation can be addressed by the autopsy following harvesting.

## 2. Practices for homicide and criminally suspicious cases

### 2.1 Indications

This section describes the guidelines that are applicable to postmortem examinations in criminally suspicious cases or homicides. Application of specific guidelines will depend on the case (e.g., routine histology cannot be performed on skeletonized bodies) and judgment of the pathologist.

These guidelines should be followed for autopsies of individuals who die in criminally suspicious circumstances or where the scene appearance or history raises concerns about an un-natural or violent death. These may include suspicious or obscure deaths such as:

- Obvious homicides.
- No readily apparent cause of death, indicating the possibility of mechanical asphyxiation (e.g., strangulation).
- The body is in a concealed location, including apparently 'dumped' bodies.
- The body is in an uncontrolled environment (e.g., found in a public place, outdoors, naturally occurring bodies of water, unlocked premises).
- Any other case that the forensic pathologist deems appropriate.

In practice, most cases that are initially criminally suspicious will be revealed to be sudden natural deaths or deaths related to drug/alcohol intoxication. However, it is important to keep an open mind to the possibility of a concealed violent death. On this basis, it is recommended that the pathologist have a low threshold for performing special dissections and collecting biological samples.

### 2.2 The scene

When the body is still *in situ* at a scene, the forensic pathologist may attend the scene. Under the Coroners Act, a pathologist may enter and inspect any place where a dead body is and examine the body.

When the body has been removed, examination of the scene may provide useful information, even after the postmortem examination has been carried out. Under the Act, a pathologist may enter and inspect any place from which the pathologist has reasonable grounds for believing a body was removed.

If consulted about a homicide or criminally suspicious death, the pathologist should carefully consider attending the scene. When a scene has not been attended, photographs, video recordings and other imaging techniques should be made available in the subsequent briefing of the forensic pathologist, prior to the postmortem examination.

### **2.3 Pre-postmortem examination briefing with investigators**

Pathologists should ensure that investigators and coroners provide the available details regarding the circumstances of the death. This briefing should be done before the postmortem examination or at the scene. The briefing should include witness accounts, as well as any explanation advanced by a suspect. The briefing can be augmented by the Preliminary Police Report form to facilitate information sharing between police and pathologists.

Adequate and appropriate briefing is essential if pathologists are to glean the maximum information from the postmortem examination since the postmortem examination alters the body. If pathologists are not told of a possible explanation in advance of the postmortem examination, the evidence to confirm or contradict the explanation may no longer be available.

Pathologists must not assume that any of the explanations that have been advanced for the death is necessarily correct. However, the information from the briefing can be essential in forming properly reasoned conclusions and/or deciding the scope of ancillary testing.

Pathologists must record any briefing given to them in sufficient detail to enable the pathologist (or some other individual) to understand the main issues raised in the briefing.

### **2.4 External examination, photography and sample collection**

Initial photographs should include the continuity seal and the body clothed and with any medical paraphernalia still attached.

A minimum set of photographs of the body should be obtained in all cases, since the absence of injuries may be as relevant to the case as the presence of injuries:

- Face.
- Conjunctivae.
  - Labial mucosa (inner surface of lips).
- Neck.

- Anterior surface of entire body.
- Posterior surface of entire body.
- Dorsum of hands.
- Palms of the hands.
- Wrists.
- All external injuries should be photographed with scale.

External samples are to be obtained at the discretion of the pathologist after discussion with investigators:

- Any trace evidence, including loose hairs and fibers.
- Hair sample.
- Fingernail clippings.
- Any visible stains on the body, particularly on the face, genitalia, perineum or thighs.
- Any visible clumped pubic hair.
- Swabs and smears from the mouth.
- Swabs and smears from the vagina or penis.
- Swabs and smears from the anus/rectum.

Fingernail clippings must be obtained with a new disposable, sterile nail clipper using a separate clipper for each hand. The nail clippings and nail clippers should be submitted together to the laboratory in a sealed envelope.

All physical exhibits (e.g., trace evidence and swabs) collected at postmortem examination should be transferred into the custody of the police at the conclusion of the gross examination. The only items that should be retained in the custody of the pathologist are tissues or organs (where approved, see Section 1.9: Tissue and organ retention, storage and disposition) for further pathologic or histologic examination.

## 2.5 Dissection

Perform internal examination of the head, chest, abdomen, pelvis and neck. In many cases, it is helpful to perform a layered dissection of the anterior neck. Other special dissections are performed as required.

## **2.6 Histology, ancillary testing and consultations**

Collection of the following samples, if available, is required:

- Blood from heart.
- Blood from femoral blood vessels.
- Urine.

In cases with hospitalization, blood drawn at admission (and prior to transfusion) may be the best sample for toxicologic testing. In these cases, it is appropriate to discuss with the coroner sample procurement. Vitreous fluid can be obtained and can be used for biochemical studies.

Routine histology and toxicology are performed in all homicide and criminally suspicious cases, as determined by the state of the body.

## **2.7 Death associated with restraint**

The section describes the guidelines for the postmortem examination of an individual who dies suddenly during restraint or physical struggle, often with law-enforcement officers. Such individuals may appear agitated or aggressive or have features indicative of excited delirium. These guidelines also apply to restraint-related deaths that occur in other circumstances such as medical/psychiatric therapy. These guidelines should be used in cases where death follows the use of one or more of the following:

- Pepper spray.
- A conducted energy weapon (e.g., Taser).
- Hand or ankle cuffing.
- Hogtying.
- Neck holds (e.g., carotid sleeper hold).
- Prone-positioning.

The body may be examined using an alternate light source prior to postmortem examination. Lesions that may be related to conducted energy weapon use (electrothermal lesions or penetrating injuries from electrode deployment) should be photographed, described, measured (including the clearance between the lesions) and studied histologically. If patterned injuries are present (e.g., tram-track contusions), appropriate photographs using a scale are essential.

In all cases, the following external samples are to be obtained:

- Any trace evidence.
- Pulled scalp hair.

- Fingernail clippings.
- If there is reason to believe that law-enforcement officers used pepper spray, swabs of periorbital skin can be collected.

Internal examination of the head, neck, chest, abdomen and pelvis is performed. The entire gastrointestinal tract must be opened to determine if foreign objects are present. The following special dissections should also be performed and documented photographically:

- Layered dissection of the anterior neck and face.
- Layered dissection of the anterior torso.
- Layered dissection of the posterior neck and posterior torso.
- Removal of the testes with dissection of the tunica vaginalis and testicular parenchyma.
- Other special dissections, including dissection of the extremities, at the discretion of the forensic pathologist.

The hyoid-larynx complex can be radiographed, even if no fracture is visible.

Routine histologic sections should be obtained and additional sections can be submitted as follows:

- Skin and subcutaneous fat: documentation of injuries as deemed appropriate by forensic pathologist.
- If significant fractures or injury to subcutaneous fat are found at postmortem examination, the forensic pathologist should consider histologic studies for fat embolism.
- Any additional histologic sections deemed appropriate by the forensic pathologist.

In appropriate cases, a postmortem blood sample should be collected and submitted for hemoglobin electrophoresis. In all cases, vitreous fluid should be obtained and can be submitted for biochemical analysis. Comprehensive toxicologic testing should be performed in all cases.

## **2.8 Death associated with sexual violence**

Rape-homicides are rare, but must be recognized by the forensic pathologist since such cases may not be identified until a postmortem examination is performed. It is important to have a low threshold for performing special dissections and collecting biological samples in any case that could reasonably be related to sexual assault. Inclusion criteria for application of these guidelines include:

- Indication or suspicion of sexual assault at the scene of body recovery.
- The lower body garments, including underwear, are disturbed, torn or cut.
- Death of a female or child that may be due to manual or ligature strangulation.
- Some cases with human bite marks.
- Most cases of nude bodies in uncontrolled environments.

The potential value of examination of the body with an alternate light source should be considered and discussed with the forensic identification officer. If performed, appropriate evidentiary samples should be obtained.

A special survey for bite marks should be made. If a suspected bite mark is found, appropriate biological swabs should be obtained. Consultation with a forensic odontologist is required prior to manipulation of the bite mark or dissection of the body, since special photography is usually required.

In all cases, the following external samples are to be obtained:

- Any trace evidence, including loose hairs and fibers.
- Any physical evidence or samples of stains revealed by the alternate light source.
- Hair sample.
- Fingernail clippings.
- Swabs and smears from the mouth.
- Swabs and smears from the vagina or penis.
- Swabs and smears from the anus/rectum.
- Any visible stains on the body, particularly on the face, genitalia, perineum or thighs (dry and wet).
- Any visible clumped pubic hair.
- Any ligature marks may be sampled using the taping method.
- Any bite marks should be swabbed before washing the body.

Internal examination will usually include the following dissections with appropriate photographic documentation:

- Layered dissection of the anterior neck and face.
- Layered dissection of the posterior neck and posterior torso.
- Layered dissection of the pelvic organs with en bloc excision of the external genitalia (female only), perineum (male and female) and anus (male and female) must be performed, if injuries are found or suspected to be present. The specimen can be provisionally dissected at postmortem examination, and then immersion- fixed in formalin for definitive dissection after fixation.
- Consider dissection of the extremities (e.g., wrist and ankle ligature marks).

If key injuries are found after examination of the formalin-fixed genital-pelvic specimen, then a police photographer can return to photograph the specimen. This will ensure that the photographic record is complete. Otherwise, if the pathologist obtains photographs, these should be disclosed.

If the hyoid-larynx complex is fractured, radiographs may be obtained. Routine histologic sections of major organs and tissues should be prepared. Additional considerations include:

- Skin, subcutaneous fat, and skeletal muscle: documentation of injuries as deemed appropriate by the forensic pathologist.
- Pelvic organs: if injuries are present, the injuries should be studied using representative sections.
- Anus: if anorectal injuries are present, it is essential that they be confirmed histologically. All histologic sections should be 'trimmed in' after formalin-fixation of the pelvic specimen to avoid histologic artifacts.
- Any additional histologic sections deemed appropriate by the forensic pathologist.

Vitreous fluid should be obtained and routine toxicology should be performed.

## **2.9 Blunt trauma of head or body**

These guidelines should be used in the following types of cases:

- Blunt impact head trauma.
- Homicidal beating, including punching, kicking and stomping.
- Bodies with unexplained widespread acute bruising.
- Custodial death with injuries that might relate to baton impacts.
- Selected cases of vehicular impact or alleged fatal descent from height.

Criminally suspicious cases or homicides with blunt force injuries may also have other types of injuries. For example, the beating of a child might well be an asphyxial death or sexual assault.

Consider examining the body with an alternate light source prior to postmortem examination. Any relevant items such as physical exhibits or stains must be collected and submitted to police. Some exceptions to this include cases of vehicular impact or cases with prolonged hospitalization.

Internal examination of the head, neck, chest, abdomen and pelvis is performed. In cases where blunt injuries are widespread (i.e., not concentrated on the head), the forensic pathologist performs the following special dissections:

- Layered dissection of the anterior neck and face.
- Layered dissection of the anterior torso (i.e., such as in stomping and kicking injuries).
- Layered dissection of the posterior neck and torso.

In the case of blunt impact head trauma with injuries that could have been caused by a specific instrument(s), the following should be considered:

- Additional scale photographs of the scalp injuries.
- Shaving of hair to allow better demonstration of the wounds.
- Removal of the pericranial membrane to allow precise photography of the fracture pattern (e.g., pond fractures and intersecting fracture lines).
- Depressed fractures should be carefully photographed and measured, particularly if the pattern is characteristically geometric in appearance. Consider en bloc excision of depressed fractures or mold-casting of the depressed fractures.
- Consider obtaining the assistance of a forensic anthropologist to assist in reconstructing extensively fragmented skulls. This may facilitate determining the number of individual impact sites, if there are overlapping injuries, and can assist with a detailed assessment of basal skull fracture patterns.

With the approval of the Chief Forensic Pathologist or designate, the pathologist may retain the brain for examination after fixation (see Section 1.9: Tissue and organ retention, storage and disposition for procedures including notification of next of kin). The pathologist must notify the coroner orally and in writing (Notification to Coroner of Organ Retention Form) at the conclusion of the postmortem examination to ensure the family is notified and they provide disposition instructions. The preliminary and final postmortem examination reports must indicate that the brain was retained. After notifying the coroner orally and in writing, the pathologist may elect to refer the brain to a consultant. Fixation and retention of the brain is recommended if there is:

- A significant survival interval in hospital.
- Neurosurgical intervention.
- A clinical diagnosis of diffuse axonal injury.
- Hypoxic change, which makes cutting the brain in the fresh state impractical.
- A need to facilitate macroscopic documentation and histologic sampling of injuries.

If traumatic subarachnoid hemorrhage or post-traumatic cerebral infarction is present, consider removal of the vertebral arteries. The two most common methods are en bloc excision of the base of skull and cervical spine, or segmental excision of the vertebral arteries. If removed segmentally, segments to be excised include: distal intracranial (present at the base of the brain, after

brain removal); proximal intracranial (need to be excised from the foramen magnum once brain is removed); transitional or distal extracranial segment after the artery emerges from the cervical spine; the intraosseous extracranial segment; and the point of origin of the extracranial segment at the subclavian arteries.

Routine histologic sections should be obtained, including representative sections of the brain and its coverings and focal injuries. Routine toxicologic testing will be performed. Blood from sequestered hematomas should also be collected (e.g., subdural hematoma).

## **2.10 Penetrating or perforating trauma from projectiles or sharp instruments**

The body should be radiographed (conventional radiography or real-time fluoroscopy) prior to postmortem examination. The clothing should be examined for defects and bloodstains that correlate with injuries on the body.

All external evidence of injury should be photographed with scale. It is particularly important to photograph the external wounds of all penetrating and perforating injuries using both regional photographs to demonstrate the anatomical location of the wounds, and close-up photography to show the wound features.

Gunshot residue sampling can be performed on the hands, if applicable. The police will perform the sampling. The forensic pathologist should consider sampling bloodstains on the surface of the body, particularly in cases of sharp force injury.

Internal examination of the head, neck, chest, abdomen and pelvis is performed. Dissection and examination of the internal wound paths should include:

- Assessment of the direction of the wound path in three dimensions.
- Documentation of internal injuries and measurement of volumes of blood in body cavities.
- Recovery of all projectiles if relatively intact. In the case of birdshot, a representative sample is obtained. If a bullet has fragmented, the lead core, main fragment and/or a portion of a jacket can be sampled.
- In the case of shotgun wounds all wadding should be recovered.
- In the case of stab wounds, the depth should be measured, if possible.
- In the case of stab wounds, the tip of the sharp instrument may be found embedded in bone. Such tips should be collected and retained.

Routine histology and toxicology should be performed. If organs were removed for transplantation or during emergency surgery it may be helpful to examine the

organs if available (e.g., not transplanted or disposed of). The regional coroner can assist in obtaining such organs.

## 2.11 Suspected child abuse

These guidelines are to be used in the following types of cases:

- Known history of child abuse.
- Unusual/suspicious scene.
- History of an unusual fall or 'accident'.
- Poor hygiene, lice infestations or other evidence of neglect.
- Cachexia or dehydration of unclear nature.
- Bruising or other injuries of unclear nature.
- Thermal burns or scalds of unclear nature.
- Prior sudden and unexplained infant death in a sibling.
- History of recurrent life-threatening episodes (ALTE).

In general, the pathologist must keep an open mind to the possibilities of occult violent death, child abuse, sexual assault, maltreatment and neglect. On this basis, it is recommended that the pathologist have a low threshold for performing special dissections and collecting biological samples.

The pathologist should consider the special challenges of pediatric forensic pathology, which include (but are not limited to):

- The pathology of the different forms of acute and chronic physical child abuse.
- The pathology of neglect and starvation.
- The evolving nature of forensic pathology of infantile head injury, including the so-called 'shaken baby syndrome'.
- The pitfalls of postmortem examination diagnosis of mechanical asphyxia in infants and small children (i.e., the problems with under- and over-diagnosis).
- Issues related to the medicolegal interpretation of multiple fractures.
- Postmortem and postmortem examination artifacts that can be over-interpreted as injuries (e.g., postmortem anal dilation).
- The scope and limits to the use of histology for dating injuries.
- Diseases and conditions that can mimic child abuse.

Pathologists who suspect child abuse have a legal obligation to personally report the case to the relevant Children's Aid Society "forthwith".

Pathologists performing postmortem examinations on infants and children should carefully balance the physician's role as patient or child welfare advocate and the forensic pathologist's special duty to provide unbiased evidence to the criminal justice system as expert witnesses.

## **2.12 External examination, photography and sample collection**

A standardized radiographic skeletal survey should be performed prior to postmortem examination. The skeletal survey should be assessed by a radiologist and reported to the pathologist, ideally before dissection commences and in all case before the body is released. Bones showing radiological abnormalities suspicious for trauma should be excised for specimen radiography and histologic examination after de-calcification.

An external examination is performed according to the standard practice of forensic pathology. Appropriate body measurements should be obtained.

The potential value of examination of the body with an alternate light source should be considered and discussed with the forensic identification officer. If performed, appropriate evidentiary samples should be obtained.

Pertinent photographs should be obtained. Photographic services will be provided by the police identification officer. The pathologist may elect to obtain additional photographs not obtained by the police, but the existence of these photographs should be disclosed in the postmortem examination report. The minimum set of photographs should include:

- Overview – anterior and posterior surfaces of entire body.
- Face – overview of anterior, right and left sides; close-up views of ears; nose and philtrum; ocular conjunctivae; lips; and inner labial mucosa / frenula.
- Neck – anterior, posterior and sides.
- Hands – dorsal and palmar aspects.
- Wrists – ventral, dorsal and lateral aspects.
- Feet.
- External genitalia / perineum, including anus, buttocks and medial thighs.

All injuries including patterned injuries should be photographed with an appropriately positioned scale.

A survey for bite marks should be made. If a suspected bite mark is found, appropriate biological swabs should be obtained, including a control swab. Consultation with a forensic odontologist prior to manipulation of the bite mark or dissection of the body is required.

The following external samples can be obtained as indicated:

- Any trace evidence, including loose hairs and fibers.
- Swabs of any stains/secretions particularly on the face, genitalia, perineum or thighs as noted by the naked eye or revealed by the alternate light source examination.
- Pulled scalp hair.
- Cutting or scrapings of the fingernails.
- Swabs and smears from the mouth.
- Swabs and smears from the vagina or surface of the penis.
- Swabs and smears from the anus.

### **2.13 Dissection**

An internal examination of the head, neck, chest, abdomen and pelvis is performed. In many cases, the following special dissections with photographic documentation are indicated:

- Layered dissection of the anterior torso.
- Forensic dissection of the anterior neck and face.
- Forensic dissection of the posterior neck.
- Forensic dissection of the posterior torso.
- Forensic dissection of the extremities.

If sexual assault is suspected, then special dissection of the pelvic organs with en bloc excision of the external genitalia (female only), perineum (male and female) and anus (male and female). The specimen can be provisionally dissected at postmortem examination, and then immersion fixed in formalin for definitive dissection after fixation if indicated.

Other special dissections may be performed, including:

- En bloc excision and fixation of a liver-pancreas-duodenal specimen.
- Excision and fixation of fractured ribs or the ribcage.
- En bloc excision and fixation of epiphyses-metaphyses in cases with radiological evidence of metaphyseal lesions. Contralateral long bone segments are also to be excised for comparison purposes.

In most cases, retention of the brain and spinal cord can be avoided by overnight fixation followed by histologic sampling, with return of the organ to the body

before the body is released to the next-of-kin via a funeral home. This is the recommended practice, particularly when a family objects to organ retention.

If there is evidence of head injury, authorization by the Chief Forensic Pathologist or designate may be given to retain the brain, spinal cord and eyes with retro-bulbar optic nerves and extra-ocular muscles and fat for examination after fixation (see Section 1.9: Tissue and organ retention).

#### **2.14 Tissue retention, histology and ancillary testing**

The brain and spinal cord (+ eyes) may be retained with authorization for examination after formalin fixation. Retention of any other organ for specialty consultations also requires the authorization of the Chief Forensic Pathologist or designate (see Section 1.9: Tissue and organ retention).

Histological sections are submitted as follows:

- Heart: sufficient sampling sections.
- Lung: at least one section from each lobe.
- At least one each of liver, kidney, spleen, adrenal gland, thyroid gland, pituitary gland, gastrointestinal tract, stomach, pancreas, lymph nodes.
- Brain: to include at least sections of cerebral cortex; basal ganglia; hippocampus; midbrain/pons; cerebellum; deep cerebral white matter; and spinal cord.
- Pelvic organs: if injuries are present, the injuries should be studied using representative sections.
- Anus: if ano-rectal injuries are present.
- Eyes and optic nerves (if retained).
- Bone and bone marrow, including any fractures, recent or old.
- Skin, subcutaneous fat, and skeletal muscle: documentation of injuries as deemed appropriate by pathologist.
- Any other histological sections as deemed appropriate by the pathologist.

If fractures or significant injuries to subcutaneous fat are found at postmortem examination, the pathologist should consider histologic studies for fat embolism.

### **3. Postmortem examination report in homicide and criminally suspicious cases**

#### **3.1 Structure of the report**

The postmortem examination report (Report of Postmortem Examination) will be prepared using standardized headings to ensure provincial consistency:

- Demographic and related information.
- Qualifications.
- Declaration.
- History provided to pathologist.
- Scene.
- Procedures.
- Identification and Continuity.
- External examination.
- Signs of recent injury.
- Internal examination.
- Ancillary tests.
- Supplementary Information.
- Summary and opinion.
- Cause of death.
- Signature.

#### **3.2 Demographic and related information**

This section includes: name, age and sex of decedent including relevant accession numbers and name of coroner. Give date of postmortem examination and names of attendees, including assistants and investigators.

#### **3.3 Qualifications**

This is a brief synopsis of your curriculum vitae including qualifications, appointments, present and past positions and the nature of your expertise.

#### **3.4 Declaration**

The declaration statement states the nature of your duty, such as:

*In preparing this report and in giving oral evidence, I understand that my primary duty is to the court. I have complied with and will continue to comply with that duty. I have done my best, in preparing this report, to be accurate and complete. I have mentioned all matters that I regard as relevant to the opinions I have expressed.*

*The postmortem examination is performed under a Coroner's Warrant for Postmortem Examination, using the Ontario Forensic Pathology Service Practice Manual for Pathologists (2014).*

### **3.5 History provided to the pathologist**

This is a brief summary of information provided by the police, coroner, medical records and other sources. In this section, the pathologist will specify both the information and the source of the information.

### **3.6 Scene**

If the pathologist attended the scene, a brief scene description should be included. If the pathologist did not attend the scene, but digital images were reviewed before the postmortem examination, give a brief description of the scene from the digital images.

### **3.7 Procedures**

Required only in cases with special procedures (describe or list special procedures, e.g., special dissections, alternate light source examination).

### **3.8 Identification and continuity**

Indicate how the body was identified to the pathologist. Describe continuity.

### **3.9 External examination**

The pathologist has discretion on how to present the findings of the external examination (e.g., narrative description or by sub-headings).

### **3.10 Signs of recent injury**

The pathologist has discretion on how to present the injuries (e.g., narrative description or by sub-headings). Description of penetrating or perforating injuries in continuity is encouraged.

### **3.11 Internal examination**

The pathologist has discretion on how to present the findings of the internal examination although systemic headings and organ subheading are encouraged.

If an organ or tissue is free of macroscopically apparent lesions, then the organ or tissue can be described as "unremarkable" or a similar term. If an organ or

tissue is “unremarkable”, this implies that it has been removed, dissected and examined. If an organ has not been removed, dissected and examined, then the postmortem examination report must indicate that the organ was “not examined”. The postmortem examination report should accurately reflect the extent of the internal examination.

### **3.12 Ancillary testing**

In this section, describe the results of ancillary testing and histology under specific subheadings. List any whole organs retained (with authorization). List the toxicologic samples and other biological samples provided to the police and provide seal numbers for samples (tabular format).

### **3.13 Supplementary information**

In this section, summarize any other supplementary activities. This might include a summary of post-postmortem examination information that was obtained in a case conference.

### **3.14 Summary and opinion**

The postmortem examination report should include a written opinion in all cases. The extent and nature of the opinion will be dictated by the circumstances of the case. However, the pathologist must provide, at a minimum, an opinion that canvasses the medicolegal issues that are raised by the history and postmortem findings. The reasoning for the opinion, including the cause of death, should be explained if the cause of death is not self-evident. Typical medicolegal issues that could be discussed in a homicide case include: mechanism of injury and death; how the injuries occurred; issues related to nature and use of a weapon; timing of injury and death; presence/absence of defensive types of injuries; and if disease or intoxication contributed to death. In some cases it will be important to identify and briefly discuss the evidentiary or scientific issues that might make your opinion controversial or less certain. In such cases, the reader should be given an indication of the strength of your opinion. Obviously, it will not be possible to predict all medicolegal issues that might be important in the case.

The postmortem examination report in homicide cases is not written only for other physicians. Since the prosecutor and defense lawyer will read your report, your opinion must be set out in language that can assist the reader. Carefully consider the language you use to communicate your opinion (e.g., ‘consistent with’) and to give a balanced view of causal possibilities. If a specific conclusion is offered, but there is an alternate explanation or conclusion, it is often helpful to explain why one alternative is preferred over another.

Expert opinions should, whenever possible, be evidence-based and not only informed by anecdotal experience. The pathologist must ensure that all postmortem examination findings that form the basis of the opinions are documented in a form that can be reviewed by other pathologists (e.g., macroscopic photography, histology). The pathologist must not base any expert opinion on untested/untestable evidence, such as reported confessions or assumptions that cannot be independently validated or corroborated by other evidence. It is best to avoid a 'default diagnosis'.

The emphasis on the independent, objective and evidence-based approach in forensic medicine can be viewed as a commitment to *think truth*. The pathologist's duty is as an independent expert witness to the court. This duty does not include intentionally advancing opinions that are beneficial either to the prosecution or defense.

Facts may emerge during the death investigation, sometimes even in the course of a trial, which may make it appropriate that the pathologist modify an originally held opinion. The pathologist has a duty to give any new facts due consideration and ensure that his or her opinion remains objective and unbiased. If previously held conclusions can no longer be upheld, an amended opinion must be promptly and clearly stated. In these circumstances, an amended report should be written and submitted (see Section 1.24: Amendment of reports).

When opinions are based, in whole or in part, on consultation with other experts, those experts as well as the content of the opinions expressed by them should be acknowledged. The consulted experts should express in writing, where feasible, any significant findings or opinions they contributed.

### **3.15 Cause of death**

The cause of death must not be speculative. In the cause of death statement, do not use terms such as: asphyxia, consistent with asphyxia and homicidal violence of undetermined etiology. If the cause of death cannot be objectively determined by combining information from the history, postmortem examination and ancillary testing, then the cause of death should be listed as unascertained or undetermined or equivalent. The pathologist must not base any expert opinion on untested/untestable evidence such as reported confessions or assumptions that cannot be independently validated or corroborated by other evidence.

The cause of death statement should be set out in the WHO or 'death certificate' format (i.e., 1(a) due to 1(b), etc.), whenever possible. Do not use conventions that are not universal (e.g., bracketing terms that derive only from the clinical history).

### **3.16 Peer review**

All draft reports of postmortem examination from homicides and suspicious cases must be peer reviewed before they are finalized and submitted (see Section 5.5: Peer review of postmortem examination reports).

### **3.17 Signature**

The final report should be signed and dated.

## 4. Guidance on special dissections

### 4.1 Anterior neck

- Leave the upper “Y” portion of the primary postmortem examination incision unreflected until the neck is ready for special dissection.
- The anterior neck is dissected after the brain is removed and the torso is eviscerated. The neck is elevated such that the venous system is adequately drained.
- Make an incision from the shoulder tips, along the sides of the neck (just posterior to the anatomical course of the sternomastoid muscle) such that the incisions join the scalp incision used to remove the brain. Typically, the scalp incision joins the incision made along the sides of the neck at the mastoid process (behind the ear).
- The skin of the sides of the neck and the anterior neck can be reflected by incising the subcutaneous fat/platysma layer. This is most readily done by first reflecting the skin at the sides of the neck to the level of the jaw and then reflecting the skin of the anterior neck to the level of the chin. It is helpful to have an assistant rotate the head in the direction away from the side that is being dissected.
- Once the entire anterolateral neck is exposed, the skin of the cheeks can be reflected. The facial skin is reflected by cutting through the external auditory canal and continuing the subcutaneous incisions to the level of the nose and lateral canthus (eye).
- A complete dissection of the face can be performed by further careful reflection/dissection. However, this is seldom necessary since the majority of the face is dissected by elevating the skin of the cheeks.
- Once the entire anterolateral neck is exposed, there will be a relatively thick fibrous/fibrofatty membrane over the superficial strap muscles in the midline. This membrane should be removed by dissection.
- Each strap muscle can now be elevated and reflected superiorly (i.e., cutting the origin of the muscle, but leaving the muscle attached to the anatomical insertion point).
- The hyoid and laryngeal cartilages are exposed *in situ* to determine if fractures are present. This may involve removal of the thyroid gland.
- Eviscerate the neck organs with the tongue by incising the floor of the mouth along the mandible. The neck organs can now be removed.

## 4.2 Posterior neck

- The body should be placed prone and elevated such that the neck appears slightly flexed.
- The posterior neck is dissected using an inverted "T"-shaped incision along the nape of the neck. The vertical portion of the inverted "T"-shaped incision extends along the midline from the occiput to the spinous process of the 7th cervical vertebra. The lower horizontal portion extends from shoulder to shoulder over the scapulae and passes over the spinous process of the 7th cervical vertebra.
- The skin is reflected laterally such that two large flaps are created. Once the skin is reflected the trapezius muscles will be visible.
- Compared to the strap muscles of the anterior neck, the muscles of the posterior neck are more numerous with complicated anatomical courses. On this basis, it is convenient to approach dissection of the layers of the posterior neck using the following muscular groupings: superficial, intermediate, deep paraspinal and deep subcapital.
- Elevate the superficial and intermediate muscles in layers. It is critical to keep the dissection field wide at all levels; otherwise the deep dissection field will be too narrow to examine the upper neck ligaments.
- Once the superficial and intermediate muscles are elevated, the deep paraspinal muscles on the surface of the cervical spine will remain, along with the deep subcapital muscles.
- Dissection of the deep paraspinal and subcapital muscles requires excision of the muscles from the surface of the vertebrae, since the deep subcapital muscles insert onto the spinous processes of the atlas and axis. This dissection will reveal the deep cervical spinal ligaments, dorsal surfaces of the cervical vertebrae and the transitional segment of the extracranial vertebral artery.
- The atlanto-occipital and atlanto-axial ligaments can be easily identified and assessed for integrity and hemorrhage.
- If indicated, the vertebral arteries and the cervical spinal cord can be removed.
- It should be noted that artefactual hemorrhages are often present in the deep posterior-lateral neck muscles if a special anterior neck dissection was performed. Similar changes can be found near the mastoid at the terminal of the scalp incision used to remove the brain. It is important not to over-interpret such findings.

### 4.3 Back

- The body is placed prone. It is often helpful to elevate the chest.
- The posterior neck is dissected as outlined above (see Section 4.2: Posterior neck).
- An inverted "Y"-shaped incision is made along the posterior midline such that the main part of the incision extends from the spinous process of the 7th cervical vertebra (from the inverted "T"-shaped incision) to the coccyx and then over the gluteal regions (i.e., the arms of the "Y").
- The skin is reflected laterally such that two large flaps are created along the sides of the torso. In addition, two smaller lateral flaps are created at the posterior neck; the skin of the medial buttocks is also reflected
- The superficial muscles of the back (trapezius, latissimus dorsi, superficial muscles of the scapulae and superficial cervical paraspinal muscles) can be elevated to expose the intermediate and deep musculature.
- The muscles of the scapular region are incised, including the deep muscles at the deep portion of the chest. This requires 'winging' or complete elevation of the scapula by incision of the muscular attachments of the scapula to the back musculature.
- The intermediate deep muscles of the posterior neck and back and the gluteal muscles can be elevated individually or examined using multiple parallel longitudinal incisions that run along the length of the muscle.
- The deep paraspinal muscles are incised along the vertebral column; the neural arches and spinous processes are palpated.
- The posterior convexity of the ribcage is exposed and the ribs are examined.
- The spinal cord can be removed using the posterior approach, if indicated.
- If the dissection of the back needs to be supplemented by dissection of the limbs, then skin incisions can be extended from the inverted "T"-shaped incision and the inverted "Y"-shaped incision to the wrists and ankles, respectively. It is important to correlate any area of acute subcutaneous hemorrhage on the limbs with intravenous needle punctures (e.g., hospitalization or field resuscitation). This will ensure the areas of bruising are not iatrogenic, but are more likely related to an injury.



## Section C - Quality Assurance

### 5. Quality Assurance for Postmortem Examinations

The OFPS has a robust quality assurance program comprised of the following:

#### 5.1 Practice guidelines

The pathologist uses these practice guidelines for homicides, criminally suspicious and routine cases to demonstrate a commitment to a uniform approach to the quality of forensic pathology in Ontario. Standardized reporting templates and forms are available in the Pathologist 'Toolkit'.

#### 5.2 Pathologist Register

Under the *Coroners Act*, medicolegal autopsies may be performed only by pathologists who are appropriately credentialed and registered by the OFPS. On the basis of their qualifications, registered pathologists may be approved by the Chief Forensic Pathologist to perform:

- All medicolegal autopsies including homicide and criminally suspicious cases (Category A).
- Routine cases only (Category B).
- Non-suspicious pediatric cases (Category C).

#### 5.3 Consultation

The pathologist consults with other pathologists in difficult or challenging cases. This includes consultation with the Chief Forensic Pathologist in potentially controversial matters. If pathologists feel uncertain about performing a specific autopsy or require advice or clarification from a senior forensic pathologist at any time, even during an autopsy, they can reach the on-call OFPS Forensic Pathologist by calling Provincial Dispatch at 416-314-4100 or at 1-855-299-4100.

#### **5.4 Postmortem Examination (PME) Record**

Immediately following the postmortem examination, the pathologist must submit a completed PME Record to the OFPS providing information, including preliminary cause of death as given to police. The Record is to be electronically submitted to the OFPS.

The PME Record is reviewed daily by the Chief Forensic Pathologist or designate. The PME Records provide baseline statistics for quality and performance monitoring.

#### **5.5 Peer review of postmortem examination reports**

All postmortem examination reports on homicide, criminally suspicious, pediatric and SIU cases are subjected to peer review prior to release of the report to the coroner and legal authorities. The peer review of the postmortem examination reports is administered by the Chief Forensic Pathologist and performed by forensic pathologists.

The main objectives of the peer review are to determine whether:

- The postmortem examination report can be independently reviewed by another pathologist.
- The postmortem examination report provides an expert opinion about the medicolegally relevant issues, including the cause of death.
- Opinions are balanced and reasonable and can be substantiated by evidence.

The originating pathologist should submit all materials that will allow for an effective review of the case by the peer-reviewing pathologist. The minimum requirement is the postmortem examination report, background information of the case (history and scene), images from the gross examination and ancillary reports (e.g., neuropathology, toxicology). In some instances, the histology slides will also need to be submitted for peer review.

Upon submission of a postmortem examination report for peer review to the OFPS, the OFPS will advise the applicable regional supervising coroner that the postmortem examination report has been submitted for peer review.

The reviewing pathologist should ensure that the review is appropriately comprehensive and addresses the medicolegal issues raised by the postmortem examination report. The peer reviewer should record the scope of materials used for the review.

The originating and reviewing pathologists can discuss the case as required. If there is a significant difference in opinion about the cause of death or other major medicolegal interpretations between the originating and reviewing pathologists,

the Chief Forensic Pathologist should be notified. The Chief Forensic Pathologist (or designate) will then undertake a comprehensive review of the case and notify the regional supervising coroner. The Chief Forensic Pathologist will consult with the originating and reviewing pathologists prior to completion of his/her review.

The results of the peer review process should be reported using the postmortem examination report Peer Review Form for homicide and criminally suspicious cases. The output of the peer review will be sent to the originating pathologist prior to submission of the postmortem examination report to the coroner.

The pathologist who performed the postmortem examination is responsible for the postmortem examination report and provides testimony on the case. The peer reviewer is not a substitute expert witness for the pathologist who performed the postmortem examination.

The completed peer review form and the existence of a review by the Chief Forensic Pathologist are disclosable.

The OFPS turnaround time standard for peer review is 10 working days.

#### **5.6 Submission of final Reports of Postmortem Examination**

A copy of each Report of Postmortem Examination must be provided to the investigating coroner, Regional Supervising Coroner's Office and to the OFPS for quality assurance. The report must include all ancillary test results and the Warrant for Postmortem Examination. Associated invoices are submitted to the Regional Supervising Coroner for payment.

#### **5.7 Audit of autopsy reports for routine cases**

Autopsy reports on routine cases are audited for administrative and technical accuracy. Medical Directors of Forensic Pathology Units review reports of routine cases performed in their units. Reports from community hospitals are audited by the Chief Forensic Pathologist or designate.

The administrative audit focuses on completeness and adherence to guidelines. All community hospital reports undergo administrative audit, and 10% of routine autopsy reports from Forensic Pathology Units undergo this type of audit.

The technical audit focuses on the content of the report to ensure that the approach, conclusions and opinions derived from the evidence are appropriate. In general, 10% of routine reports are reviewed on this basis.

Technical audit is also done for 100% of reports that fall into certain categories. These are:

- Cases with an undetermined cause of death.
- Non-traumatic and non-toxicologic deaths of individuals younger than 40 years old.
- Reports from pathologists performing fewer than 20 autopsies per year.

If a report originating from community hospitals is subjected to technical audit by the Chief Forensic Pathologist or designate, an email is sent to the pathologist with feedback even if no issues are identified.

### **5.8 Key performance indicators**

The Peer Review and Audit activities of the quality assurance program allow for review and collection of data with respect to key performance indicators (KPIs) for autopsy reports:

- Submission compliance (the submission of the PME records and Reports of Postmortem Examinations by pathologists is tracked and measured).
- Completeness (administrative aspects such as whether history, summary and opinion are provided).
- Consistency (technical aspects such as appropriateness of work conducted and congruence of the opinion and cause of death with the findings in the case).
- Turnaround time (measured as the percentage of cases completed within 90 days).

The OFPS is committed to regular and open reporting of results tracked against these measures to clients and stakeholders and to the public.

### **5.9 Detection and follow-up of significant quality issues and critical incidents**

Significant quality issues include substantial errors, omissions and other deficiencies.

A critical incident is a significant quality issue that contributes to a serious error in death investigation. All critical incidents are analyzed to determine root cause and corrective action.

### **5.10 Peer review of courtroom testimony by forensic pathologists**

Forensic pathologists who testify submit one transcript of courtroom testimony each year for review by another forensic pathologist.

Courtroom testimony is assessed for:

- Accuracy and evidence-base.
- Professionalism and objectivity.
- Clear language.
- Presentation of limitations, uncertainties and alternate hypotheses.

### **5.11 Complaints**

The OFPS tracks complaints to ensure that complaints are resolved in a timely manner and to reveal trends or gaps in service so that corrective action can be taken to avoid future complaints.

### **5.12 Continuing Professional Development (CPD)**

Other important aspects of quality assurance are participation in professional development activities and continuing medical education in forensic pathology to maintain specialist competence as required by the Royal College of Physicians and Surgeons of Canada. The OFPS collaborates with the Office of the Chief Coroner and the University of Toronto, Centre for Forensic Science and Medicine, to provide educational activities in forensic pathology.

CPD is also used to address performance concerns about knowledge, skills or behaviours regarding the practice of a registered pathologist. The objective of CPD in this context is to improve the performance of the registered pathologist through education. This may include:

- Supervised training at a forensic pathology unit.
- Report writing guidance.
- Mock trials.
- Regular appraisal.
- Assessment of continuing education plans.
- Feedback through audit.

Failure to improve the performance of the registered pathologist may lead to reclassification, suspension or removal from the Register.

### **5.13 Continuous improvement**

The OFPS continually strives to become better in what we do, by finding more effective and efficient ways to deliver services and by preventing errors from occurring.

# D

## Section D - Pathologist Register Protocol

### 6. Introduction

Under the *Coroners Act*, the Chief Forensic Pathologist is required to maintain a Register of Pathologists who are qualified to provide services under the Act.

The purpose of the Register Protocol is to provide information to pathologists and the public as to the operation of the Register. The Protocol will be guided by the following principles:

- Ensuring high quality postmortem examinations performed by pathologists with appropriate skills.
- Promoting public confidence in the Ontario Forensic Pathology Service (OFPS).
- Establishing a practical, principled and predictable set of standards to guide the accreditation of forensic pathologists to the Register and proportionate responses where those standards are not met.
- Providing a fair, transparent, timely and effective process for entry, renewal and removal from the Register, consistent with the educational, remedial and quality assurance purposes of the Register.

Only those pathologists on the Register will be eligible to perform postmortem examinations pursuant to a coroner's warrant under the *Coroners Act*.

The Register is a public document, which is available on the website of the Ministry of Community Safety and Correctional Services.

Performance management of registered pathologists related to quality of postmortem examinations is the responsibility of the Chief Forensic Pathologist. A Credentialing Committee of senior forensic pathologists of the OFPS advises the Chief Forensic Pathologist on appointments, continuing professional development, renewals, reclassifications, suspensions and removals from the Register.

When there is an issue of professional misconduct or incompetence, the Chief Forensic Pathologist is legislatively obliged to report any registered pathologist to the College of Physicians and Surgeons of Ontario (CPSO).

## **6.1 Classification**

6.1.1 Every pathologist on the Register will be assigned to one of three categories:

- A. All medicolegal postmortem examinations.
- B. Medicolegal postmortem examinations excluding homicide and criminally suspicious cases and excluding cases of infants and children under five years of age.
- C. Postmortem examinations of infants and children under five years of age only and excluding homicide and criminally suspicious cases.

## **6.2 Applications**

6.2.1 Every pathologist is entitled to apply to be on the Register.

6.2.2 The CFP has the authority to accept, deny or defer an application to the Register or to a particular classification within the Register.

## **6.3 Criteria**

6.3.1 In considering an application, the CFP may take into account the following factors:

- Educational standards as set out by the CFP, including successful completion of the Royal College of Physicians and Surgeons of Canada ("RCPSC") forensic pathology examination or equivalent.
- Experiential and other standards as deemed appropriate by the CFP.
- Other factors as deemed appropriate by the CFP.

## **6.4 Procedure on applications**

6.4.1 Candidates must complete and provide the relevant documentation to the OFPS to support their applications, including references.

6.4.2 The Credentialing Committee reviews applications and makes recommendations to the CFP regarding appointments.

6.4.3 The CFP may conduct an interview with an applicant.

6.4.4 Where the CFP decides to deny or defer an application to the Register or to a particular classification within the Register, the CFP will provide reasons for the decision.

6.4.5 The CFP will respond in writing to all applications.

## **6.5 Reapplication**

6.5.1 After one year from the date of receipt of a decision to deny a pathologist an appointment to the Register or to a classification within the Register, a pathologist may reapply to be appointed to the Register or to a particular classification within the Register.

6.5.2 After three unsuccessful attempts to be appointed to the Register, or to a particular classification within the Register, a pathologist is ineligible to reapply for such an appointment for a period of two years.

## **6.6 Term of appointment**

6.6.1 Pathologists shall be appointed to the Register, subject to suspension and/or removal pursuant to section 2.11, for a period of five years.

## **6.7 Renewal**

6.7.1 All pathologists on the Register will automatically be considered for renewal within the year that their term is expected to expire. The OFPS will communicate in writing with all pathologists regarding renewal.

6.7.2 The CFP may grant, deny or defer renewal to the Register.

## **6.8 Criteria for renewal**

6.8.1 In deciding to grant, deny or defer renewal to the Register, the CFP may take into account the following factors:

- The advice of the Credentialing Committee based on:
  - Whether the pathologist has met the continuing educational and quality assurance requirements.
  - Whether the pathologist has met the experiential and other standards.
  - Whether the pathologist's conduct while on the Register and compliance with direction provided by the CFP, merits renewal.

- The results of an interview that the CFP may conduct with a pathologist to discuss issues that arise from the renewal process.
- Other factors as deemed appropriate by the CFP.

## **6.9 Procedure on renewal**

- 6.9.1 The OFPS will supply a renewal letter to each pathologist who has been granted renewal, which will be signed and returned by the pathologist to the OFPS indicating whether they accept renewal.
- 6.9.2 Where the CFP intends to deny or defer renewal to the Register, the CFP will provide notice in writing to the pathologist, including reasons for the CFP's denial or deferral.
- 6.9.3 The pathologist will have 30 days from the receipt of the notice to provide a written response.
- 6.9.4 The CFP will provide a final decision in writing to the pathologist.

## **6.10 Term of renewal**

- 6.10.1 Pathologists will be renewed, subject to suspension and/or removal pursuant to section 2.11, for five years.

## **6.11 Reclassification, suspension or removal from the register**

- 6.11.1 A pathologist who wants to be considered for reclassification must apply as per section 6.4.
- 6.11.2 On the advice of the Credentialing Committee, the CFP may suspend or remove a pathologist from the Register, or from a particular classification within the Register, where the CFP believes it is in the public interest.
- 6.11.3 If the CFP intends to suspend or remove a pathologist from the Register, or from a particular classification within the Register, the CFP will provide notice in writing, including reasons for the intended removal or reclassification.
- 6.11.4 The pathologist will have 30 days from the receipt of the notice to provide a written response.

6.11.5 The CFP will provide a final decision in writing to the pathologist.

6.11.6 At the discretion of the CFP, external advice or review of the matter by another forensic pathologist may be requested.

## **6.12 Voluntary resignation from the register**

6.12.1 A pathologist on the Register may, on three months written notice, resign voluntarily from the Register or from a particular classification within the Register.

## **6.13 Privacy and transparency**

6.13.1 The supporting documentation in relation to the Register is to be treated as confidential.

## **6.14 Non-compliance**

6.14.1 The CFP may deviate from compliance with this Protocol, where the CFP deems it in the public interest to do so.

This is Exhibit "J" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018

A handwritten signature in cursive script, appearing to read "Laura Pol", written in black ink.

---

*Commissioner for Taking Affidavits (or as may be)*

## Case Synopsis - Autopsy Info

Click on all that apply to this submission

**Important!** Ensure you select ALL THAT APPLY. Your selections have a direct impact on the analysis we undertake.

History of drug misuse

Traumatic suicide

Inhalant use

Rule out/Routine Tox

Death under 5 years of age

Ethanol only

Suspected drug overdose

SIU investigation

FMVC: Driver/Aviation

Fire or CO related death

Death in custody/ at workplace

FMVC: Pedestrian/Passenger

Criminally suspicious

Ketones/GHB/BHB

This is Exhibit "K" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018



*Laura K. [unclear]*

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*Commissioner for Taking Affidavits (or as may be)*



## Centre of Forensic Sciences Investigators and Submitters Technical Information Sheets

### Toxicology

#### Introduction

The Toxicology Section performs analyses on biological samples (e.g., blood, urine, liver) to determine the absence/presence/concentration(s) of drugs, including alcohol and poisons.

This document is intended as a convenient investigative reference but should not be relied upon as being definitive or exhaustive. Please contact the Centre of Forensic Sciences (CFS) Toxicology Section for assistance with questions of an analytical or toxicological nature by e-mail or telephone 647 329-1400 or 647 329-1430. When calling please ask for the appropriate coordinator:

#### **Coroner's Coordinator:**

*CFSToxicologyCoronerCoordinator@ontario.ca*

#### **Criminal Coordinator:**

*toxcrim@ontario.ca*

#### Analytical Decision-making and Capability

The screening methods employed in the Toxicology Section are:

1. Gas Chromatography (GC) and Gas Chromatography/Mass Spectrometry (GC/MS) screen
2. Immunoassay (IA)
3. Head-Space GC analysis for volatiles
4. Quadrupole Time-of-Flight MS (QTOF)

The targeted/quantitation methods employed in the Toxicology Section are:

1. GC, GC/MS
2. Liquid Chromatography (LC), LC/MS
3. Head-Space GC analysis for volatiles

The capability of the screening methods is presented in Appendix 1. While these screening methods have wide-ranging capabilities not all drugs may be reliably detected. Appendix 2 contains a list of compounds that may not be identified by the screening methods but may be detected/quantitated by targeted methods. Many of the compounds contained in this list will not be tested for unless specifically requested. If use of a specific drug is known or suspected it should be noted in the case synopsis.

Decisions regarding which tests to be used in a case are informed by a variety of sources including case type, case history, nature of submitted samples, analytical protocols and capabilities, and

discussions with clients. The initial toxicological analyses conducted for a variety of case types are presented in Appendix 3.

## Urgent Cases

Requests for expedited analyses must meet specific criteria before being accepted as an urgent case. This process requires authorization by Toxicology Section management.

## Examination

All items are visually examined to check the seal numbers (if present), the contents, and the integrity of the packaging.

## Instrumentation

### *Chromatography: Gas Chromatography (GC); Liquid Chromatography (LC)*

Chromatography is an analytical technique used to separate compounds based on their chemical and structural properties. GC uses a pressurized gas, while LC uses a pressurized liquid, in the separation of compounds.

### *Immunoassay (IA)*

IA detects compounds in biological fluids using a reaction of an antibody or antibodies to its antigen (i.e., the drug). This technique is primarily a screening technique; however, some IA methods are semi-quantitative, e.g., acetaminophen.

### *Inductively Coupled Plasma (ICP)*

ICP, when coupled with mass spectrometry, is capable of detecting metals and several non-metals at very low concentrations. ICP ionizes the sample and then an MS separates and quantitates the ions.

### *Mass Spectrometry (MS)*

MS detects, identifies, and quantitates compounds. An MS can be coupled with a GC or an LC.

### *Quadrupole Time-of-Flight-MS (QTOF)*

QTOF detects and identifies compounds. A QTOF is coupled with an LC.

### *Tandem MS (MS/MS)*

MS/MS detects, identifies, and quantitates compounds and is commonly coupled to a gas or liquid chromatograph.

### *Ultraviolet and Visible (UV/VIS) Spectrophotometry*

UV/VIS spectrophotometry identifies and/or quantitates a drug based on its UV and/or visible light-absorbing properties.

### *Colour Tests*

Colour tests tentatively identify the presence of drugs in a variety of samples. Chemicals added to the sample will produce an expected colour if the drug is present.

### *Carbon Monoxide*

Carbon monoxide is analyzed by visible spectrophotometry. Results are expressed as % carboxyhemoglobin saturation.

### *General Toxicology Screen*

These analyses, which may include GC, GC/MS, LC, UV spectrophotometry, and colour tests are employed when other analytical methods are not suitable. Samples may include stomach contents,

body tissues, and urine. While general toxicology screen methods have a wide-range of capability their sensitivity is low and the methods are generally qualitative.

## Interpretation

Quantitative results may be expressed as 1) a concentration or 2) as < or > a concentration as appropriate, e.g., when sufficient for interpretation. Blood ethanol interpretations provided in reports are generally limited to cases in which the detected concentration may be associated with fatalities, may be influenced by post-mortem artefacts, may have toxic interactions with other drugs, or in the case of fatal motor vehicle collision, associated with impairment.

## Measurement Uncertainty

Measurements made with all scientific instruments are associated with variability. No measurement is exact, but is an estimate of the true value. Calculation of measurement uncertainty (MU) employs statistical methods to determine the range of values within which the quantitative result is likely to reside. The MU provides a reasonable estimate of the variability associated with the analytical method and is based on the analysis of matrix-matched quality control samples. A minimum of 10 such analyses are used. The MU is calculated with a confidence of 95.45 per cent using a k-factor based on the degrees of freedom as determined by the Student's *t*-test and the standard deviation of the associated quality control data. The MU is expressed in the same units in which the quantitative result is reported, e.g., ng/mL, mg/L and is reported as: quantitative result  $\pm$  MU.

## Limitations

The focus of this laboratory is drug toxicity. Clinical blood/urine chemistry analysis, e.g., electrolytes, cell counts, gas saturation, creatinine, is not performed in this laboratory. Additionally, analysis for antiepileptic drugs is limited to determining drug toxicity when warranted based on case history. Some specialized screening procedures are sample-specific, e.g., stomach contents. This laboratory does not have validated methods to analyze some sample types, e.g., oral fluid, hair, bile, muscle, brain tissue. There are a variety of analytical issues that may prevent the detection of some of the drugs that this laboratory is commonly capable of detecting, which include:

- matrix effects
  - degree of putrefaction
  - type of sample (e.g., splenic blood)
  - post-mortem interval
  - storage conditions
- volume of sample submitted
- low concentration of the drug/sensitivity of the method

Conversely, some novel, or rarely encountered, drugs not listed in Appendix 1 may be identified by the GC and GC/MS or QTOF screens. In this case, analytical reference material would be acquired (if available) then analysed to confirm identity. Additionally, there are drugs/compounds for which the CFS Toxicology Section does not have a method, examples of which are provided in Appendix 4.

## Appendix 1

Drugs that can be reliably detected by screening methods

**GC and GC/MS Screen****A**

alpha-pyrrolidinovalerophenone ( $\alpha$ -PVP)  
 acetyl fentanyl<sup>2</sup>  
 amantadine<sup>1</sup>  
 amitriptyline<sup>2</sup>  
 amlodipine<sup>2</sup>  
 amoxapine<sup>2</sup>  
 amphetamine<sup>2</sup>  
 amphetamine (4-fluoro)  
 amphetamine (dimethyl)  
 anabasine  
 anileridine<sup>1</sup>  
 atomoxetine  
 atropine/hyoscyamine

**B**

benzocaine  
 benzofuran (6-(2-aminopropyl), 6-APB)  
 benzotropine<sup>1</sup>  
 benzylpiperazine (BZP)  
 bromo-dragonfly  
 brompheniramine<sup>2</sup>  
 bupivacaine<sup>1</sup>  
 bupropion<sup>2</sup>  
 butylone  
 butyryl fentanyl

**C**

caffeine<sup>1</sup>  
 carbamazepine<sup>1</sup>  
 cathinone (cath)  
   n-ethyl-cath  
   4-fluorometh-cath  
   3-methoxymeth-cath  
   4-methyleth-cath  
   meth-cath  
 chlorcyclizine  
 chlordiazepoxide<sup>2</sup>  
 chloroquine  
 chlorpheniramine<sup>2</sup>  
 chlorpromazine<sup>1</sup>  
 cimetidine  
 cisapride<sup>4</sup>  
 citalopram<sup>\*2</sup>  
 clomipramine<sup>2</sup>  
 clonidine<sup>1</sup>

clozapine<sup>2</sup>  
 cocaethylene  
 cocaine<sup>2</sup>  
 codeine<sup>2</sup>  
 cotinine  
 cyclobenzaprime<sup>2</sup>  
 cyproheptadine<sup>1</sup>

**D**

desipramine<sup>2</sup>  
 dextromethorphan<sup>2</sup>  
 dextrorphan<sup>\*</sup>  
 diazepam<sup>2</sup>  
 diazepam (nor)<sup>2</sup>  
 dibucaine<sup>4</sup>  
 dihydrocodeine  
 diltiazem<sup>2</sup>  
 diltiazem (desacetyl)<sup>2</sup>  
 dimethyltryptamine  
 diphenhydramine<sup>2</sup>  
 diphenoxylate<sup>1</sup>  
 doxepin<sup>2</sup>  
 doxylamine<sup>2</sup>

**E**

ephedrine<sup>\*</sup>  
 estazolam  
 etizolam  
 ethylone

**F**

x-fluoroamphetamine  
 fluoxetine<sup>2</sup>  
 fluoxetine (nor)<sup>2</sup>  
 flurazepam<sup>2</sup>  
 flurazepam (n-desalkyl)<sup>2</sup>  
 fluvoxamine<sup>2</sup>

**H**

haloperidol<sup>1</sup>  
 hydrocodone<sup>2</sup>  
 hydroxychloroquine  
 hydroxyzine<sup>1</sup>

**I**

ibogaine  
 imipramine<sup>2</sup>

**K**

ketamine<sup>2</sup>

**L**

lamotrigine<sup>2</sup>  
 laudanosine  
 levamisole  
 lidocaine  
 loratadine  
 loxapine<sup>2</sup>

**M**

maprotiline<sup>1</sup>  
 meclizine<sup>1</sup>  
 mefloquine<sup>1</sup>  
 meperidine<sup>2</sup>  
 meperidine (nor)<sup>2</sup>  
 mephedrone<sup>2</sup>  
 mepivacaine<sup>1</sup>  
 methadone<sup>2</sup>  
 methamphetamine<sup>2</sup>  
 methamphetamine (4-fluoro)  
 methedrone  
 methotrimeprazine<sup>2</sup>  
 methylenedioxyamphetamine (MDA)<sup>2</sup>  
 methylenedioxyethylamphetamine (MDEA)<sup>2</sup>  
 methylenedioxymethamphetamine (MDMA)<sup>2</sup>  
 3,4-methylenedioxypropylamphetamine (MDPV)  
 methylone<sup>2</sup>  
 methylphenidate<sup>2</sup>  
 metoclopramide<sup>1</sup>  
 metoprolol<sup>2</sup>  
 midazolam<sup>2</sup>  
 mirtazapine<sup>2</sup>  
 moclobemide<sup>1</sup>

**N**

nicotine<sup>1</sup>  
 nortriptyline<sup>2</sup>

**O**

olanzapine<sup>2</sup>  
 orphenadrine<sup>2</sup>  
 oxybutynin<sup>1</sup>  
 oxycodone<sup>2</sup>

**P**

paroxetine<sup>2</sup>  
 pentadron  
 pentazocine<sup>2</sup>  
 pentoxyphylline  
 pentylone  
 phenacetin  
 phencyclidine (PCP)<sup>2</sup>  
 phenethylamines (2C-B, 2C-B-Fly, 2C-T-7,  
 PEA)

pheniramine<sup>2</sup>  
 phenmetrazine  
 phentermine<sup>1</sup>  
 piperazine, 1-3 chlorophenyl (mCPP)  
 piperazine, trifluoromethylphenyl (TFMPP)  
 p-fluorofentanyl  
 p-methoxyamphetamine (PMA)<sup>2</sup>  
 p-methoxymeth-amphetamine (PMMA)  
 procainamide<sup>1</sup>  
 procaine<sup>1</sup>  
 prochlorperazine<sup>4</sup>  
 procyclidine<sup>1</sup>  
 propoxur<sup>1</sup>  
 propoxyphene<sup>2</sup>  
 propranolol<sup>2</sup>  
 protriptyline<sup>2</sup>  
 pseudoephedrine<sup>2</sup>  
 pyrilamine (mepyramine)<sup>1</sup>

**Q**

quetiapine<sup>2</sup>  
 quinidine<sup>1</sup>

**R**

ropinirole  
 ropivacaine

**S**

scopolamine (hyoscine)<sup>1</sup>  
 selegiline  
 sertraline<sup>2</sup>  
 strychnine<sup>1</sup>

**T**

tapentadol  
 terbinafine  
 thioridazine<sup>1</sup>  
 ticlopidine  
 tramadol<sup>2</sup>  
 tranlycypromine<sup>1</sup>  
 trazodone<sup>2</sup>  
 trifluoperazine<sup>1</sup>  
 trihexphenidyl<sup>2</sup>  
 trimethoprim<sup>4</sup>  
 trimebutine  
 trimipramine<sup>2</sup>  
 triprolidine<sup>2</sup>

**V**

valeryl fentanyl  
 varenicline  
 venlafaxine<sup>2</sup>  
 venlafaxine (O-desmethyl)<sup>2</sup>  
 verapamil<sup>2</sup>

**X**  
xylometazoline

**Z**  
zolpidem<sup>2</sup>  
zopiclone breakdown product

The GC and GC/MS screen is not capable of distinguishing racemates, therefore compounds such as dextrophan/levorphanol, citalopram/escitalopram and ephedrine/pseudoephedrine cannot be separated. Similarly, the GC and GC/MS screen cannot distinguish between 2-fluoroamphetamine, 3-fluoroamphetamine, and 4-fluoroamphetamine.

#### **QTOF Screen**

The QTOF screen is a powerful and sensitive method that can reliably detect the drugs included in the following methods (details are listed in Appendices 5 and 6):

- LC-MS/MS Mix 1
- LC-MS/MS Mix 2
- LC-MS/MS Mix 3
- LC-MS/MS Mix 4

In addition, the QTOF screen can identify U-47700 and psilocin. The list of drugs potentially identifiable by QTOF is too extensive to list within this document. For questions about a specific drug not listed, please contact the appropriate case coordinator.

#### **Immunoassay Tests (known cross-reactivity)**

##### **Barbiturates:**

amobarbital<sup>2</sup>  
butalbital<sup>2</sup>  
pentobarbital<sup>2</sup>  
phenobarbital<sup>2</sup>  
secobarbital<sup>2</sup>

#### **Head-space GC-FID analysis for volatiles (screen and quantitation)**

acetone  
ethanol  
isopropanol  
methanol  
n-propanol (not quantitated)

## Appendix 2

Compounds that may not be identified by screening methods, but might be detected and/or quantitated by targeted methods.

**A**

acebutolol<sup>4</sup>  
acepromazine<sup>4</sup>  
amiloride<sup>4</sup>  
antipyrine (phenazone)<sup>1</sup>  
atenolol<sup>4</sup>  
atracurium<sup>4</sup>  
azacyclonol<sup>4</sup>

**B**

bromocriptine<sup>4</sup>

**C**

carbaryl<sup>1</sup>  
carbon monoxide<sup>6</sup>  
chlorpropamide<sup>4</sup>  
chlorzoxazone<sup>4</sup>  
cyanide<sup>2</sup>

**D**

dantrolene<sup>4</sup>  
diclofenac<sup>4</sup>  
dipyridamole<sup>4</sup>

**E**

ethopropazine<sup>4</sup>  
ethylene glycol<sup>8</sup>

**F**

fenfluramine<sup>1</sup>  
fenodipine<sup>4</sup>  
fenopropfen<sup>4</sup>  
formic acid<sup>5</sup>

**G**

guaifenesin<sup>4</sup>

**I**

indomethacin<sup>4</sup>

**K**

ketoconazole<sup>4</sup>

**L**

labetolol<sup>4</sup>  
lithium<sup>7</sup>  
loperamide<sup>4</sup>

**M**

mefenamic acid<sup>4</sup>  
methaqualone<sup>1</sup>  
methocarbamol<sup>4</sup>  
metronidazole<sup>4</sup>  
mexiletine<sup>1</sup>

**N**

nabumetone<sup>4</sup>  
nadolol<sup>4</sup>

**O**

oxprenolol<sup>4</sup>

**P**

papaverine<sup>4</sup>  
pericyazine<sup>4</sup>  
phenylbutazone<sup>4</sup>  
phenyltoloxamine<sup>1</sup>  
physostigmine<sup>1</sup>  
pimozide<sup>4</sup>  
pindolol<sup>4</sup>  
pipotiazine<sup>4</sup>  
piroxicam<sup>4</sup>  
prazosin<sup>4</sup>  
propafenone<sup>4</sup>

**S**

sotalol<sup>4</sup>  
sufentanil<sup>1</sup>

**T**

terazosin<sup>4</sup>  
terfenadine<sup>4</sup>

tiaprofenate<sup>4</sup>  
timolol<sup>4</sup>  
tolbutamide<sup>4</sup>  
toluene<sup>5</sup>  
triamterene<sup>4</sup>

**V**

valproic acid<sup>5</sup>

**Y**

yohimbine<sup>4</sup>

**Z**

zuclopenthixol<sup>4</sup>

Methods used for the quantitation of compounds identified in the preceding appendices are denoted as follows:

<sup>1</sup> GC-NPD

<sup>2</sup> LC-MS/MS

<sup>3</sup> GC-MS

<sup>4</sup> LC-DAD

<sup>5</sup> GC-FID

<sup>6</sup> Visible spectrophotometry

<sup>7</sup> ICP-MS

<sup>8</sup> Qualitative

## Appendix 3

Initial analyses presented by case type

<b>Homicide:</b>	Ethanol, Screen, LC-MS/MS Mix 3, IA cannabinoids
<b>Attempted murder<sup>a</sup>:</b>	dependent upon case history
<b>Sexual assault<sup>a</sup>:</b>	dependent upon case history
<b>Alcohol-impaired driving:</b>	Ethanol
<b>Drug-impaired driving:</b>	Screen, IA cannabinoids, UDM, GHB <sup>a</sup>
<b>Possible drug-related death:</b>	Ethanol, Screen, LC-MS/MS Mix 3
<b>Rule Out/Routine Toxicology:</b>	Ethanol, LC-MS/MS Mix 3
<b>Death of child &lt; 5 years of age</b>	Ethanol, Screen, LC-MS/MS Mix 3, IA cannabinoids, IA acetaminophen and salicylate
<b>Mandatory inquest:</b>	Ethanol, Screen, LC-MS/MS Mix 3, IA cannabinoids
<b>SIU death investigation:</b>	Ethanol, Screen, LC-MS/MS Mix 3, IA cannabinoids
<b>Fire-related death<sup>b</sup>:</b>	CO (whole blood required)
<b>Confirmation of ketoacidosis:</b>	Ethanol (includes acetone), BHB
<b>Fatal motor vehicle collision (driver) and aviation death:</b>	Ethanol, Screen, LC-MS/MS Mix 3, IA cannabinoids, CO <sup>c</sup>

<sup>a</sup> dependent upon case history<sup>b</sup> other analyses may be performed dependent upon evidence/suspicion of intoxication<sup>c</sup> if fire is involved

## Appendix 4

Examples of drugs/compounds for which this laboratory does not have a method

<b>Animal toxins</b>	<b>Anesthetic gases</b>	<b>Curare-related toxins</b>	<b>Other</b>
$\alpha$ -bungarotoxin connotoxin maurotoxin tetrodotoxin	chloroform diethyl ether halothane isoflurane nitrous oxide	alloferine toxiferine tubocurarine	insulin lead, mercury polychlorinated biphenyls (PCB) succinylcholine thallium xylazine

## Appendix 5

## Capability of quantitative methods

**Barbiturate method (LC-MS/MS)**

amobarbital  
butalbital  
pentobarbital  
phenobarbital  
phenytoin  
primidone  
secobarbital

**Opioid method (LC-MS/MS)**

U-47700  
W-15 (qualitative)  
W-18 (qualitative)

**Acid drug method (UPLC-DAD)**

furosemide  
ketorolac  
naproxen  
salicylic acid

**Gamma-, Beta-hydroxybutyrate (GHB/BHB) method (GC-MS)**

$\gamma$ -hydroxybutyrate  
 $\beta$ -hydroxybutyrate

**LC-MS/MS Mix 1**

amlodipine  
diltiazem  
diltiazem (desacetyl)  
flurazepam  
lamotrigine  
metoprolol  
propranolol  
zaleplon  
ziprasidone  
zolpidem  
zopiclone

**LC-MS/MS Mix 2**

brompheniramine  
chlorpheniramine  
diphenhydramine  
doxylamine  
ephedrine  
orphenadrine  
pheniramine  
phenylephrine  
promethazine  
pseudoephedrine  
trimeprazine  
triprolidine

**LC-MS/MS Mix 3**

6-monoacetylmorphine (6-MAM; qualitative)  
alprazolam  
amitriptyline  
amphetamine  
benzoylecgonine  
bupropion  
carfentanil  
chlorpheniramine  
citalopram  
clonazepam  
clonazepam (7-amino)  
cocaine  
codeine  
cyclobenzaprine

dextromethorphan  
diazepam  
diazepam (nor)  
diphenhydramine  
fentanyl  
flunitrazepam (7-amino)  
fluoxetine  
fluoxetine (nor)  
flurazepam (n-desalkyl)  
hydrocodone  
hydromorphone  
ketamine  
ketamine (nor)  
lorazepam

meperidine  
 meperidine (nor)  
 mephedrone  
 methadone  
 methamphetamine  
 methylenedioxyamphetamine  
 methylenedioxyethylamphetamine  
 methylenedioxymethamphetamine  
 midazolam  
 mirtazapine  
 morphine  
 nortriptyline  
 olanzapine

**LC-MS/MS Mix 4**

acetyl fentanyl  
 alprazolam (hydroxyl)  
 amoxapine  
 bromazepam  
 buprenorphine  
 butyryl fentanyl  
 chlordiazepoxide  
 chlorpromazine  
 clobazam  
 clomipramine  
 clozapine  
 demoxepam  
 desipramine  
 desomorphine  
 diltiazem  
 diltiazem (desacetyl)  
 doxepin  
 doxylamine  
 duloxetine  
 etizolam  
 flunitrazepam  
 flunitrazepam (N-desmethyl)  
 flurazepam  
 fluvoxamine

**Antiepileptic method (LC-MS/MS)**

baclofen  
 gabapentin  
 topiramate  
 vigabatrin

**Digoxin method (LC-MS/MS)**

digoxin  
 digitoxin (qualitative)

oxazepam  
 oxycodone  
 oxymorphone  
 paroxetine  
 pseudoephedrine  
 quetiapine  
 risperidone  
 sertraline  
 temazepam  
 tramadol (cis)  
 trazodone  
 venlafaxine  
 zopiclone

imipramine  
 levorphanol  
 loxapine  
 MDPV  
 methotrimeprazine  
 methylone  
 methylphenidate  
 naloxone  
 naltrexone  
 nitrazepam  
 nitrazepam (7-amino)  
 O-desmethylvenlafaxine  
 olanzapine  
 orphenadrine  
 PCP  
 pentazocine  
 pheniramine  
 promethazine  
 propoxyphene  
 triazolam  
 triazolam (hydroxy)  
 trimipramine  
 ziprasidone  
 zolpidem

**Cannabinoid method (LC-MS/MS)**

$\Delta$ -9-tetrahydrocannabinol (THC)  
 11-nor-carboxy- $\Delta$ -9- tetrahydrocannabinol  
 (Carboxy-THC)

## Appendix 6

## Capability of targeted qualitative methods

**Urine Drug Mix (UDM; LC-MS/MS)**

6-monoacetylmorphine (6-MAM)

acetylfentanyl

acetylnorfentanyl

alprazolam

amitriptyline

amlodipine

amoxapine

amphetamine

baclofen

benzoylecgonine

bromazepam

brompheniramine

buprenorphine

buprenorphine glucuronide

bupropion

carfentanil

chlordiazepoxide

chlorpheniramine

citalopram

clobazam

clomipramine

clonazepam

clonazepam (7-amino)

clozapine

coccaethylene

cocaine

codeine

codeine-6-glucuronide

cyclobenzaprine

demoxepam

desipramine

desomorphine

dextromethorphan

diazepam

diazepam (nor)

diltiazem

diltiazem (desacetyl)

diphenhydramine

doxepin

doxylamine

duloxetine

ephedrine

fentanyl

flunitrazepam

flunitrazepam (7-amino)

flunitrazepam (N-desmethyl)

fluoxetine

fluoxetine (nor)

flurazepam

flurazepam (n-desalkyl)

fluvoxamine

gabapentin

heroin

hydrocodone

hydromorphone

hydromorphone-3-glucuronide

hydroxyalprazolam

hydroxytriazolam

imipramine

ketamine

ketamine (nor)

lamotrigine

levorphanol

lidocaine

lorazepam

lorazepam glucuronide

loxapine

meperidine

meperidine (nor)

mephedrone

methadone

methamphetamine

methylenedioxyamphetamine

methylenedioxyethylamphetamine

methylenedioxymethamphetamine

methylenedioxypropylamphetamine

methylone

metoprolol

midazolam

mirtazapine

morphine

morphine-3-glucuronide

morphine-6-glucuronide

naloxone

naltrexone

nitrazepam

nitrazepam (7-amino)

norfentanyl

nortriptyline

O-desmethylvenlafaxine

olanzapine  
orphenadrine  
oxazepam  
oxazepam glucuronide  
oxycodone  
oxymorphone  
paroxetine  
pentazocine  
phenazepam  
phencyclidine  
pheniramine  
propoxyphene  
propranolol  
pseudoephedrine  
quetiapine

risperidone  
sertraline  
tapentadol  
temazepam  
temazepam glucuronide  
topiramate  
tramadol (cis)  
trazodone  
triazolam  
trimipramine  
venlafaxine  
zaleplon  
ziprasidone  
zolpidem  
zopiclone

## Glossary

### Abbreviations

Analytical results are reported in terms of mg/100 mL, mg/L, or ng/mL, as shown below:

g	gram
mg	milligram
µg	microgram
L	litre
mL	millilitre
ng	nanogram

### Breakdown Product

A compound produced either inside or outside the body that may or may not be pharmacologically active.

### Carboxyhemoglobin saturation

The percentage of hemoglobin bound by carbon monoxide.

### Central Nervous System Depression (CNS depression)

A lowering of the functional activity of the brain and/or spinal cord. Depression of the respiratory and the cardio-regulatory centres are most relevant toxicologically.

### Coroner's Case Analytical Summary

Contains analytical results with general notes regarding the reported drug concentrations. In absence of a note, the detected drug concentration is considered to be toxicologically insignificant. No comment on therapeutic efficacy is implied by the detection of a drug.

### (D) Could Cause Death

The detected drug concentration could cause death.

### Detected

The drug has been identified in the sample. Identification is based on criteria specific to the analytical technique.

### Fatal Reference

A minimum drug concentration at which death has been reliably reported in the forensic literature.

### (I) Interpretive Data Note

Provides additional information concerning the result.

### Inconclusive

The presence or absence of a drug could not be determined.

### Metabolite

The product of enzymatic conversion of a drug within the body to a different compound that may or may not be pharmacologically active.

### No [other] significant findings by a [method name(s)]

This comment is inserted to provide a reference to the methods that were used. Appendix 1 and 5 above can be used to identify compounds not listed and that were either not detected or the results were deemed to not be toxicologically significant, e.g., caffeine or nicotine. This may also apply to endogenous compounds, e.g., acetone < 2 mg/100 mL.

**Not Detected**

The drug is either not present or is present but at an amount that cannot be discerned from other constituents in the sample.

**Post-mortem redistribution**

A phenomenon that refers to a change (either an increase or a decrease) in blood drug concentration after death; post-mortem redistribution may occur regardless of sampling site but is commonly observed as increased drug concentrations in heart blood as compared to femoral blood.

**Putrefaction**

The decomposition of organic material that involves micro-organisms.

**Report**

Contains a comprehensive summary of analytical results accompanied by interpretative conclusions.

**(T) Toxicologically Significant**

The detected drug concentration may produce toxicity.

**Tentative**

A drug, or class of drugs, has been identified using a non-specific screening method or has not been confirmed by additional methods. For positive identification further analysis is required.

**Therapeutic**

The detected drug concentration is generally considered to not be toxicologically significant. The use of this term does not imply clinical efficacy.

**Traces**

The drug was detected at a concentration below that which can be reliably quantitated. The use of this term does not imply clinical efficacy.

This is Exhibit "L" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018



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*Commissioner for Taking Affidavits (or as may be)*



*cutting through complexity*

# Executive Summary

*This section of the report highlights the salient points of analysis during this engagement.*

## How to Read This Report

**DRAFT FOR  
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PURPOSES ONLY**

The purpose of this document is to summarize the work completed over the course of this engagement relating to analysis of the current state of the Ontario death investigation system, and the analysis of options for improving or enhancing the current system. This report constitutes the final deliverable for this project.

Procedures consisted of analysis of Ministry-provided information, research, interviews with internal stakeholders, surveys of external stakeholders and interviews with contacts from international jurisdictions. Moreover, input and validation was solicited from Subject Matter Advisors in the field of death investigation as well as legal personnel from the Ministry of Community Safety and Correctional Services (MCSCS) and the Ministry of the Attorney General (MAG).

The Ministry are responsible for the decisions to implement any options resulting from the systemic review contemplated as a result of this project and for considering their impact. Implementation of these opportunities may require the Ministry to plan and test any changes to ensure that the Ministry will realize satisfactory results.



Between January and July 2012, KPMG was engaged by the Ministry of Community Safety and Correctional Services (MCSCS) to assess the Death Investigation System in Ontario and to facilitate an analysis of options for improving or enhancing the current system. In accomplishing this objective, the Executive Sponsors, Steering Committee and KPMG agreed on a workplan which included an analysis of the current state, discussions and inputs from numerous stakeholders and Subject Matter Advisors and finally, a series of workshops with the Project Steering Committee. This report summarizes the key components of these activities. The analysis revealed several models that, when considered independently or in combination with other models, could increase the effectiveness, efficiency, reliability and sustainability of Ontario's death investigation system. Moreover, the transitional impacts and costs associated with the implementation of these models are aligned with the anticipated gains. These options are supported by the Subject Matter Advisors agreed to by the Executive Sponsors.

Consensus was achieved amongst the Executive Sponsors and Steering committee that the Ministry should consider implementing the following changes to the death investigation system in Ontario;

- A subcommittee of DIOC would be formed to review all potential discretionary inquests and make recommendations to the Chief Coroner regarding whether the case should proceed to inquest and who should preside over the inquest. In addition, the role of the Death Investigation Oversight Committee (DIOC) would be expanded to play a greater role in the areas of strategic and financial planning and in the recruitment and interviewing of senior personnel.
- Legislation would be amended to allow the Chief Coroner the flexibility to appoint inquest coroners or request the assignment of judges as the presiding authority over inquests.
- Responses to inquest and death review committee recommendations are considered obligatory and posted on the Ministry's webpage.

Consensus was not achieved among the Steering Committee or Sponsors, however, in the area of potential changes to the death investigation model. In this instance, input from Subject Matter Advisors and the analysis conducted led to a potential change in some components of the existing current state model, namely that Forensic Pathologists would become certified as coroners and able to certify the identity, cause and manner of death in cases referred to them by physician coroners for post-mortem exam. It is expected based on data provided during this review, that this would impact approximately 23% of all coroner cases in Ontario. The following pages of this report outline the project in further detail.

Between January and July 2012, KPMG was engaged by the Ministry of Community Safety and Correctional Services (MCSCS) to assess the Death Investigation System in Ontario. The overarching aim of this project was to prepare a report containing analysis of the current state of the Ontario death investigation system, and analysis of options for improving or enhancing the current system. To accomplish this objective, the following were performed:

- Review and explore the mandates of differing death investigation systems, including the current system, and provide an assessment of the various models.
- Provide an assessment on the quality, reliability and accountability of the current and alternate systems, with a focus on identifying which systems could serve the unique requirements of Ontarians and their communities.
- Undertake a further review on select models resulting from the systemic review to identify their value for money, sustainability and the financial, human resource and policy implications of implementing these.
- Work collaboratively with the Steering Committee to verify current state, identify potential options for the future and make conclusions about potential changes.

The approach employed during this engagement is consistent with other organizational design methodologies in similar engagements. Moreover, the approach to the engagement, as well as the activities conducted within each phase were directed by the Executive Steering Committee and Project Sponsors, who were involved throughout the course of this project.

The project involved a series of six distinct phases and spanned between January and July 2012. The phases of the project included:

- 1.Current State Analysis** – Project kick-off and analysis of the current strengths, weaknesses and opportunities for improvement
- 2.Phase 1 Jurisdictional Scan** – A cursory literature scan of multiple jurisdictions for comparison to Ontario
- 3.Phase 2 Jurisdictional Scan** – A detailed analysis of jurisdictions selected by the Steering Committee in the areas of governance, organizational structure, roles and responsibilities, and perceived strengths and weaknesses
- 4.Model Development & Selection** – Development of multiple models for consideration and evaluation by the Executive Steering Committee and Project Sponsors
- 5.Analysis of Selected Models** – Analysis of a select number of models against evaluation criteria established by the Executive Steering Committee and Project Sponsors
- 6.Development of an Option Resulting from the Systemic Review** – Proposed models for the Ministry's further consideration

The scope of services to be conducted during the review were established by the Executive Steering Committee and excluded the following:

- Development of a robust and detailed financial forecast used for operational budgetary planning purposes
- Operational, or process-level analyses of alternative systems
- Detailed implementation planning
- Stakeholder engagement following Executive Sponsor sign-off of the final report

The following groups of individuals were selected by the Ministry to play key roles in the oversight and execution of the project. Their respective roles are summarized below.

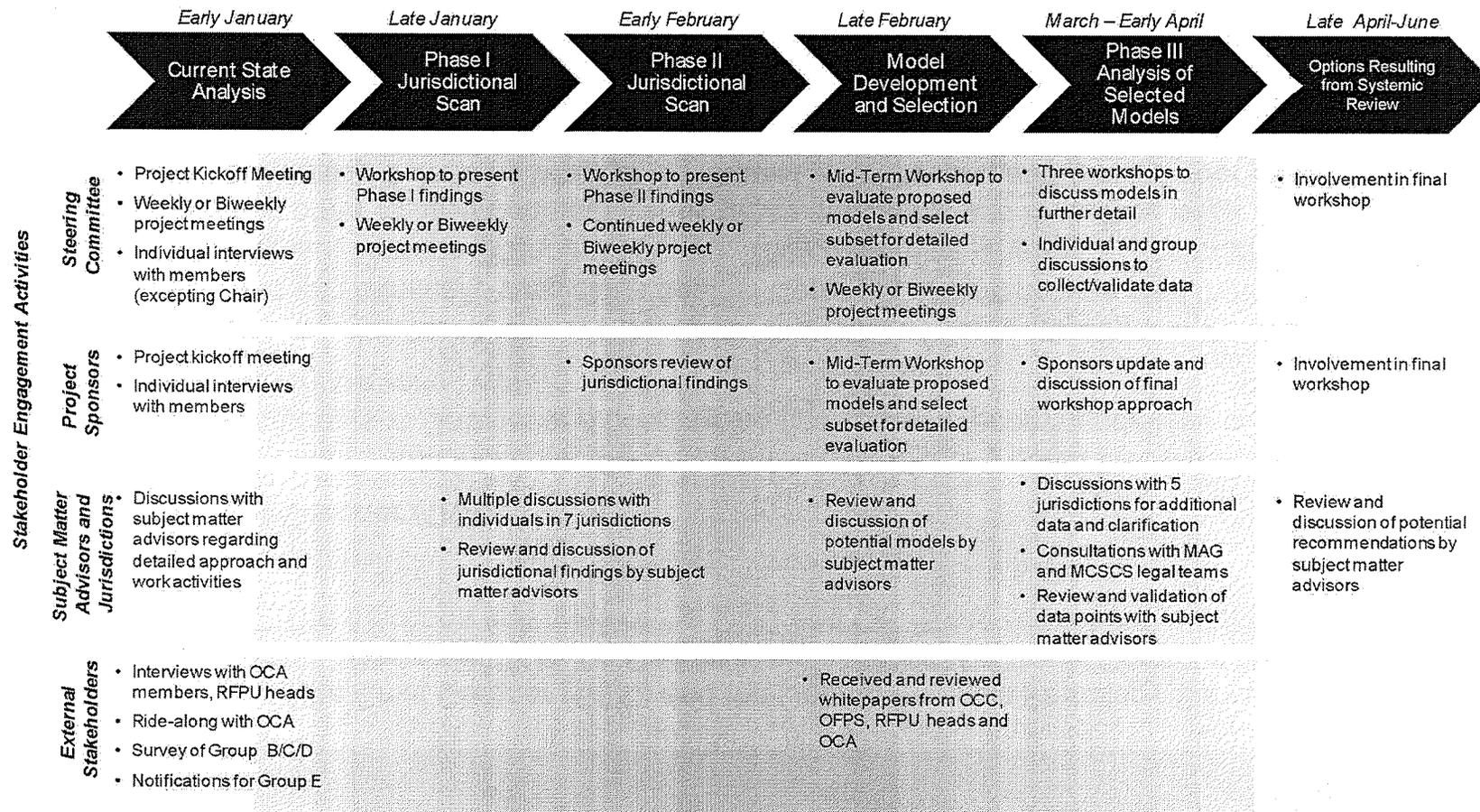
Role	Representation	Responsibilities
Office of the Deputy Minister	<ul style="list-style-type: none"> <li>Deputy Minister</li> </ul>	<ul style="list-style-type: none"> <li>Guide Project Team in performing the review and managing public communications</li> <li>Represent the greater public interest within the aims and key considerations of the project</li> <li>Receive and review final deliverables</li> </ul>
Executive Project Sponsors	<ul style="list-style-type: none"> <li>Chief Coroner</li> <li>Chief Forensic Pathologist</li> <li>Chair of DIOC</li> <li>ADM Corporate Services &amp; CAO</li> </ul>	<ul style="list-style-type: none"> <li>Provide overall direction and guidance</li> <li>Provide insight and content knowledge</li> <li>Sign-off on deliverables</li> <li>Sign-off on Subject Matter Advisors to be consulted during the engagement</li> <li>Provide project updates and briefings to the Minister and Deputy Minister, as needed</li> </ul>
Executive Steering Committee	<ul style="list-style-type: none"> <li>Strategic Business Unit</li> <li>Operational Services Division</li> <li>OCC</li> <li>OFPS</li> <li>DIOC</li> <li>Communication Unit</li> </ul>	<ul style="list-style-type: none"> <li>Provide cross Ministry perspectives and advice to KPMG Project Team</li> <li>Liaise within respective Divisions to gather information</li> <li>Provide working level direction and guidance</li> <li>Review and provide feedback on project deliverables</li> <li>Provide a forum for the engagement of key stakeholders</li> </ul>
KPMG		<ul style="list-style-type: none"> <li>Facilitate the process of model identification and evaluation with guidance from the Executive Steering Committee and Project Sponsors</li> </ul>
Subject Matter Advisors	<ul style="list-style-type: none"> <li>Former Chief Medical Examiner of a Canadian Province</li> <li>Former Chief Coroner and Chief Prosecutor of a Canadian Province</li> <li>Forensic Sciences Regulator in the United Kingdom</li> </ul>	<ul style="list-style-type: none"> <li>Leverage expertise in respective fields to provide the Executive Steering Committee and Project Sponsors with a first-hand, independent and unique understanding of death investigation systems</li> <li>Assist in the identification of relevant jurisdictions and models for investigation</li> <li>Review and provide feedback on all project deliverables</li> </ul>

# Executive Summary

## Engagement of Key Stakeholders

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Various key stakeholders were engaged to provide insight and feedback into the detailed approach, work streams and analysis throughout the project, as illustrated in the diagram below. The stakeholders, as well as their respective levels of engagement were directed by the Executive Steering Committee and Project Sponsors.



In 2009, the Office of the Chief Coroner (OCC) and the Ontario Forensic Pathology Service (OFPS) became separate organizations reporting independently to the Deputy Minister of the Ministry of Community Safety and Correctional Services (MCSCS). The functions and roles of the OCC and OFPS are set out in the Coroners Act as amended in 2009.

### **Office of the Chief Coroner (OCC)**

The OCC is responsible for administering the Coroners Act; conducting death investigations; supervising, directing and controlling all coroners in Ontario; and bringing the findings and recommendations of coroners' juries to the attention of appropriate persons.

Coroners in Ontario are physicians who are trained by the OCC in death investigation to conduct investigations of sudden, unexpected and criminally suspicious deaths. Coroners determine who died, how (medical cause of death), when, where and by what means (manner of death). They determine whether a postmortem exam (PME) or other testing is required in order to assist with answering these questions; and if so, they issue a Warrant for PME to a Pathologist. Coroners also determine whether an inquest is necessary, and preside over inquests when they are held.

### **Ontario Forensic Pathology Service (OFPS)**

The OFPS was created in July 2009 following amendments to the Coroners Act. Under the supervision and direction of the Chief Forensic Pathologist, registered forensic pathologists in the OFPS perform autopsies when authorized by a Warrant for PME issued by a coroner.

Pathologists are specialized physicians who have undertaken additional training after medical school in pathology (the study of disease). Forensic pathologists also have post-graduate training in forensic pathology, the application of medicine and science to legal issues usually in the context of sudden death. Forensic pathologists conduct detailed, specialized medical examinations (the autopsy), coordinate and interpret ancillary testing, and work collaboratively with other experts in death investigation. Forensic pathologists provide expert opinions related to the relevant forensic issues in a given death investigation, including cause of death, mechanism of death, mechanism of injury as well as many others as part of the Report of PME. Forensic Pathologists may also be called upon to testify in court and at inquest.

The OFPS works closely with the OCC to ensure a coordinated and collaborative approach to death investigation in the public interest. Together, the Chief Forensic Pathologist and Chief Coroner provide dual leadership for the death investigation system in Ontario.

### **Context for the Review**

In 2013, the two organizations, will relocate to a new state-of-the-art Forensic Services Complex. The OCC and OFPS will share space with the Centre of Forensic Sciences. In preparation for this move, the Ministry believed it prudent to examine the system in which the OCC and OFPS operate, in order to assess the effectiveness, efficiency and innovativeness of death investigation in Ontario. It is also critical that the organizations provide services that are modern, relevant and reflective of the evolving needs of Ontario's diverse communities.

The Executive Steering Committee determined a list of eleven internal stakeholders to be interviewed during this engagement. The interviews revealed both strengths and issues with the current state of the death investigation system. In addition, review of documentation provided by the Ministry, position papers from internal and external stakeholders, and a survey of external stakeholders complemented the analysis of the current state. The purpose of the survey was to gain insight regarding the current state of the Ontario death investigation system, including the perceived strengths and challenges that exist within the current death investigation system and how the system could be enhanced going forward. The survey was distributed to 46 stakeholders identified by the Ministry and responses were received from 27 organizations. The data collected is comprised of a mixture of quantitative measures and written responses. These trends, by their nature, are critical, as they focus mainly on opportunities for enhancement and do not address the many positive features of the Ministry's current activities and undertakings. The strengths, weaknesses and opportunities that were identified during these activities grounded the development and analysis of potential models for the future.

### **Summary of Internal Stakeholder Interview Findings**

Strengths were noted in the ongoing improvement of quality assurance processes, as well as with the comprehensive nature of the public safety system. Weaknesses were identified with the current leadership structure, the limited role of DIOC, and the increasingly strained professional relationship between the OCC and OFPS. In addition, internal stakeholders had inconsistent and often conflicting views around the extent to which pathologists should be integrated into the death investigation system. A systemic risk was also identified relating to the ability of forensic pathologists and coroners' official reports to document discrepant causes of death.

### **Summary of External Stakeholder Survey Findings**

From an external stakeholder perspective, survey respondents identified the following opportunities for change going forward: increased IT support, engaging broader medical and legal expertise at the onset of inquests, increased utilization of full-time resources, increased integration of pathologists, and increased communication with stakeholders.

Section 2 of this report outlines the results of the current state stakeholder assessment in further detail.

A two-part jurisdictional review was conducted with guidance from the Executive Steering Committee and Executive Sponsors as to the jurisdictions of focus. Specifically, a literature scan of 23 jurisdictions from Canada, the United States and other international countries was first conducted. The scan provided a high-level summary of the demographics and geography of the jurisdiction, as well as the scope of services and roles provided with respect to death investigation and public safety.

The Executive Steering Committee then chose 7 jurisdictions from among the initial scan to receive more detailed examination: Virginia, Quebec, British Columbia, New Mexico, Alberta, Manitoba, and Victoria, Australia. These jurisdictions were selected by the Executive Steering Committee based on their relative similarity to Ontario in geography and demographics, as well as the insights that they would provide with respect to death investigation and public safety. This phase of the jurisdictional review was informed by a literature scan and interviews with key contacts in each jurisdiction. The outcomes of the jurisdictional were circulated to the key contacts for validation.

Interviews with representatives from each of the 7 jurisdictions revealed similarities between Ontario and the jurisdictions, as well as many unique features of alternative death investigation systems. While no two systems are exactly alike or can be compared on an “apples-to-apples” basis, the review helped inform the development of death investigation models, leadership structures, inquest and organizational models for potential consideration in Ontario. Thus, the jurisdictional scan provided a proof of concept for some of the models proposed for consideration by the Ministry, including a cursory understanding of the respective benefits and drawbacks. Some of the unique characteristics of each jurisdiction are highlighted on the following page.

# Executive Summary

## Summary of Jurisdiction Attributes

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Jurisdiction	Unique characteristics
<b>Victoria, Australia</b>	<ul style="list-style-type: none"> <li>Utilizes lawyers/magistrates as coroners and police officers as investigators.</li> <li>Recent legislative change (2009) transformed the system, including its structure, governance, and roles of key resources.</li> <li>Forensic pathology services are provided by a separate, independent agency, governed by a separate council.</li> <li>Relies heavily on public servants (e.g., a Death Prevention Unit) to support coroners in their death prevention mandate.</li> </ul>
<b>Alberta</b>	<ul style="list-style-type: none"> <li>Utilizes physicians as the primary investigator in some rural areas.</li> <li>A Fatality Review Board allows Alberta to maintain a small but important role in reviewing deaths and recommending public inquiries.</li> </ul>
<b>Manitoba</b>	<ul style="list-style-type: none"> <li>Pathologists are employed by a separate, third party entity commissioned by the government to provide not-for-profit pathology services</li> <li>Inquests are led and managed by lawyers in the provincial court system</li> </ul>
<b>British Columbia</b>	<ul style="list-style-type: none"> <li>Employs lay individuals as coroners.</li> <li>No official pathology service; pathologists are engaged on as needed basis from community hospitals across the Province.</li> </ul>
<b>Virginia</b>	<ul style="list-style-type: none"> <li>Employs a regional structure, with each of four regions led by an Assistant Chief Medical Examiner.</li> <li>All medicolegal autopsies are performed in one of the four regional centres.</li> <li>Utilizes physicians as the primary investigator where possible, and lay individuals elsewhere.</li> </ul>
<b>New Mexico</b>	<ul style="list-style-type: none"> <li>Governed by the University of New Mexico's Board of Medical Investigators, which is composed of the Dean of Medicine, Secretary of Health, Chief of the Police, Chairman of the Board of Funeral Directors, and Secretary of Indian Affairs.</li> <li>All autopsies are transported and performed in the State capital.</li> <li>Utilizes lay medical investigators in both rural and urban areas.</li> <li>Rigorous training standards for Medical Investigators and Field Deputies.</li> </ul>
<b>Quebec</b>	<ul style="list-style-type: none"> <li>Inquests are presided over by one of three judicial coroners, who are trained as lawyers.</li> <li>The Province has no mandatory inquests.</li> <li>Coroners have time-bound appointments.</li> </ul>

Sources: Literature scan  
Interviews with key jurisdictional contacts.



# Executive Summary

## Model Development and Analysis - Process Overview

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Thirty-three potential alternative models were created for the Executive Steering Committee and Executive Sponsors' consideration using jurisdictional research, input from Subject Matter Advisors, whitepapers received from stakeholders and insights gained from the current state analysis. The high-level analysis of these models included descriptions, benefits, drawbacks, and proof of concept (where applicable). Each model fell into one of the following categories:

- Death Investigation (6)
- Inquest and Public Health and Safety (17)
- Governance (3)
- Organization (3) and Leadership (4)

Each of the models were reviewed with Executive Steering Committee and Executive Sponsors in March 2012 and an evaluation exercise was conducted to determine which models would proceed for further examination. Twelve models were ultimately selected by the Executive Steering Committee and Sponsors to proceed for detailed analysis.

These selected models were then analyzed from the perspective of effectiveness, efficiency, reliability and public confidence, and sustainability (as described on the following pages). The transitional impact of each model was also analyzed and presented for consideration. Details and assumptions around each of the models were informed by internal stakeholders, data received from multiple jurisdictions, Subject Matter Advisors, as well as legal counsel from MCSCS and MAG.



The models were evaluated using the evaluation criteria approved by the Executive Sponsors and Steering Committee during a mid-point workshop held in March 2012. Four evaluation criteria were established: effectiveness, efficiency, sustainability and reliability and public confidence. Effectiveness included such constructs as the quality of the death investigation system, the level of family support and responsiveness. Efficiency considered such factors as the value for money of the model and resource productivity. Sustainability was focused on the inclusivity and diversity of the model, as well as the predicted ability of the model to maintain current levels of effectiveness. Lastly, reliability and public confidence incorporated the consistency of the model and the extent of public service, among other attributes.

The models were given a rating according to the impact and change created by the model relative to current state. All models were evaluated relative to the status quo. A current state analysis of the status quo was performed in Phase 1 of the engagement. The scale and legend of the rating system is illustrated below.

 Improvement on Current State

 Relatively Equivalent to Current State

 Reduction from Current State

Any model which demonstrated the ability to improve the death investigation system from the current state was given a '+' rating. A '++' rating was used to differentiate models which were believed to potentially exceed the improvement proffered by models with a '+' rating. Models which were assessed to have little or no change from the current state, were rated as '='. Lastly, models which were perceived to potentially reduce the performance of the system relative to the current state were rated as '-'.

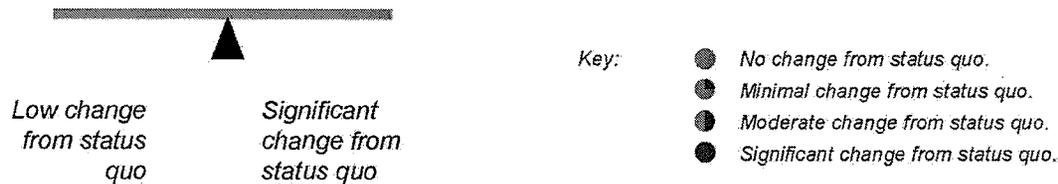
The final ratings were reviewed with the Executive Steering Committee and Sponsors during the final workshop held in June 2012.

# Executive Summary

## Transition Implications

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The system-level human resource, legislative and financial implications associated with the implementation of each model were summarized to inform future decision making. The analysis, data and assumptions were reviewed by the MCSCS Project Manager as well as the Subject Matter Advisors. The transitional impacts of each model were summarized using the scales that are illustrated below:



The financial and human resource implications are based on estimates and assumptions informed by multiple sources, including:

- Estimates received from members of the Steering Committee regarding the amount of time currently spent on activities and the perceived impact of models on business processes;
- Time and cost data received from jurisdictional contacts in British Columbia, Alberta, New Mexico, Virginia, Manitoba, Victoria (AUS), and England; and
- Background documentation provided by the Ministry (e.g., budget information, job classes and salary ranges, caseload statistics, etc.).

In general, the approach to estimating the transitional implications associated with a model involved identifying and defining the major changes, as compared to the current state; determining the potential high level workflow, time and effort implications of each change; and estimating the potential costs or potential savings associated with the change.

The detailed analysis, data and assumptions were reviewed by the MCSCS Project Manager as well as the Subject Matter Advisors.

# Executive Summary

## Key Findings – Death Investigation Models

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Based on the direction of the Executive Steering Committee and Sponsors, the following three potential models for death investigation in Ontario were analyzed in detail:

- “Model 2” - Forensic Pathologists in Forensic Pathology Units (FPU) Regions Certify Cases Referred to them for Postmortem Exam (PME)
- “Model 3” - Increased Integration of Pathologists into the Current Model
- “Model 4” - Medical Examiner (ME) System

### Summary of Analysis

The primary difference in the design of Model 2 as compared to Model 3 is in regards to the role and responsibility around *certification* of death. In Model 2, certification is conducted by both FPs and physician coroners and, a change in some components of the existing current state model are proposed. Specifically Forensic Pathologists would become certified as coroners and able to certify the identity, cause and manner of death in cases referred to them by physician coroners for post-mortem exam. In Model 3, only coroners may certify deaths (as in the current state). In the case of Model 2, the OCC has stressed a significant risk of coronial flight from the system due to the perception that this model is a step towards the implementation of an ME system, as a result consensus was not achieved amongst the Executive Sponsors. Notwithstanding this drawback, further access to FPs’ training in the area of death investigation may be valuable to the public, and may be more effectively and efficiently leveraged in Model 2 than Model 3. As a result, Model 2 is proposed for further consideration, examination and discussion on the part of the Ministry. It should be noted that based on information provided to during this project, the proposed change is expected to affect approximately 23% of all coroner cases. The ME model (Model 4), while potentially able to reduce costs, was found to be unsustainable from a human resource perspective and did not offer any tangible evidence of improved quality of service for the public. Thus, the Executive Steering committed and Project Sponsors agreed that an ME system is neither warranted in Ontario at this time, nor would it be simple to transition to such a system given the legislative, regulatory and HR challenges required.



# Executive Summary

## Key Findings – Inquest, Public Safety & Death Prevention Models

**DRAFT FOR  
DISCUSSION  
PURPOSES ONLY**

Based on direction from the Executive Steering Committee, the following five models for improved inquest, death prevention and public safety in Ontario were examined:

1. The Use of an Advisory Committee to Call Inquests
2. Fewer Mandatory Inquests
3. Ability to Utilize Judges as the Presiding Authority Over Inquests
4. Decreased Use of Juries
5. Obligatory Response to Inquest Recommendations

### Summary of Analysis

Both the analysis contained herein and initial reactions from stakeholders support the use of a subcommittee of DIOC to support the Chief Coroner in determining whether to call discretionary inquests, and potentially to hear inquest appeals if legislation is amended to support this activity.

Any efficiency or cost benefits from reducing the number of mandatory inquests conducted, or by using juries, was not believed to be worth the likely decrease in system reliability and public confidence and was therefore not supported by the analysis or Committee.

Aside from the perception that it is difficult for either DIOC or the Chief Coroner to identify, in advance, an inquest case that is well-suited for a judge to preside over, the option to utilize judges as presiding authorities over inquests was supported by the analysis conducted and internal stakeholders. Specifically, the model increases the capacity of the system to oversee highly complex proceedings or cases involving systemic issues, and may mitigate risks relating to public confidence, consistency and reliability of the system.

There was widespread support among the Steering Committee and Sponsors for responses to inquest and death review committee recommendations being made obligatory. This model has been shown to increase the effectiveness and degree to which recommendations following from inquests and death review committees are acted upon. In so doing, it is likely that public confidence and safety will increase in the system. It is expected that the short-term and ongoing additional costs of this model will be offset by the long-term implications on public safety and decreased preventable deaths.

# Executive Summary

## Key Findings – Governance & Leadership Models

**DRAFT FOR  
DISCUSSION  
PURPOSES ONLY**

Based on consensus achieved with the Executive Steering Committee, the following four models of governance and leadership in Ontario were selected for analysis:

1. Agency & Board Model
2. Increased Role for DIOC
3. Commissioner as an Alternative Leader of the Death Investigation System
4. Chief Coroner as the Leader of the Death Investigation System

### Summary of Analysis

While there was no evidence to suggest an agency/board model would be any more effective or reliable than the current system, there were concerns about public confidence relating to such a model given recent events with OPS agencies. As a result, this model was not supported for further consideration at this time.

An increased role for DIOC in budgetary, strategic and HR planning activities was universally supported by the Steering Committee and Sponsors as the model enables DIOC to fulfill the entire scope of its current legislative capacity.

The results of the analysis and the views of stakeholders produced mixed results over the effectiveness or appropriateness of a Commissioner (or alternate leader) to mediate strategic, financial, cultural and leadership issues between the OCC and OFPS, and whether such an individual would be a prudent use of funding. An alternative proposal was made by the OCC to split the OCC and OFPS into two distinct administrative entities in order to eliminate budgetary issues. This model was not analyzed during the scope of this engagement and as a result, further analysis in this area is required. A Chief Coroner leading the system was perceived as against the principles of the Goudge inquiry, and as such constitutes an unwarranted risk to public confidence.



# Executive Summary

## Responses from the OCC & OFPS Regarding Models Under Consideration

**DRAFT FOR  
DISCUSSION  
PURPOSES ONLY**

In March 2012, the OCC and OFPS submitted white papers describing their respective positions on the current state of the Ontario Death Investigation system and opportunities for the future. These position papers were reviewed and considered in the analysis of the current and future state death investigation system.

### **Response from the OFPS**

The white paper from the OFPS highlighted their endorsement for death investigation Model 2 - Forensic Pathologists in FPU Regions Certify Cases Referred to them for PME. Overall, the OFPS perceives this model to enrich the current system by appointing some forensic pathologists working in forensic pathology units as coroners. This model could further benefit families by increasing direct communication with forensic pathologists who perform autopsies. In contrast, from the perspective of the OFPS, Model 3 does not address any of the concerns of the OFPS.

### **Response from the OCC**

Notably, the white paper submitted by the OCC highlighted their endorsement of death investigation Model 3 – Increased Integration of Pathologists Into Status Quo. Overall, the OCC perceives this model to have small, yet positive impact on the effectiveness, reliability, efficiency and sustainability of the Ontario death investigation system. The extent of the change resulting from this model is aligned with the degree of change required in the system in the view of the OCC. In contrast, the OCC believes Model 2 creates no real additional benefits for the people of Ontario.

### Option Resulting from Systemic Review

The process and various lines of enquiry of the systemic review revealed several models that, when considered independently or in combination with other models, could increase the effectiveness, efficiency, reliability, public confidence and sustainability of Ontario's death investigation system. Moreover, the transitional impacts and costs associated with the implementation of these models are aligned with the anticipated gains.

It is suggested that the Ministry consider implementing the following changes to the death investigation system in Ontario; in addition these options are supported by the Subject Matter Advisors involved in this review:

- Forensic pathologists are certified as coroners and able to certify the identity, cause and manner of death in cases referred to them by physician coroners for post-mortem exam.
- A subcommittee of DIOC is formed to review all potential discretionary inquests and make recommendations to the Chief Coroner regarding whether the case should proceed to inquest and who should preside over the inquest. In addition, the role of DIOC is expanded to play a greater role in the areas of strategic and financial planning and in the recruitment and interviewing of senior personnel.
- Legislation is amended to allow the Chief Coroner the flexibility to appoint inquest coroners or request the assignment of judges as the presiding authority over inquests.
- Responses to inquest and death review committee recommendations are considered obligatory and posted on the Ministry's webpage.

It should be noted that members of the Executive Steering Committee and the Executive Sponsors agree with the implementation of the latter three options listed above. Consensus was not achieved among the Steering Committee or Sponsors regarding the suitability of the first option listed above regarding the death investigation model.

# Executive Summary

## Option Resulting from Systemic Review & Implications

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DISCUSSION  
PURPOSES ONLY**

### Implications

Implementation of all components of the option resulting from the systemic review would necessitate the training and addition of human resources, legislative change, and an increase in ongoing costs. Specifically, 1 FTE would be required in the OCC to manage the increased workload associated with obligatory responses to inquest recommendations. In addition, 13-14 additional members must be recruited to form committees of DIOC, and 27 forensic pathologists would require training and appointments as coroners. Legislative change is required to sections 8, 19, 26 and 30 of the Coroners Act in order for the proposed changes to be implemented. Lastly, additional net ongoing costs of less than \$50,000 are estimated to be incurred (these costs are associated with the addition of the personnel described above), but are considered reasonable when compared to the overall budget of the Ministry and the expected benefits.



# Executive Summary

## Benefit and Drawbacks of the Option Resulting from Systemic Review

**DRAFT FOR  
DISCUSSION  
PURPOSES ONLY**

What follows below is a summary of the benefits and drawbacks of the option resulting from systemic review. Further detail on these is provided in the main body of the report.

### **Expected Benefits**

The proposed changes to the death investigation model could increase the integration of forensic pathologists into the system while maintaining the expertise and use of physician coroners. Moreover, the proposed death investigation model maintains the concept of a most responsible physician and prevents any issue of self-referral or conflict of interest by keeping the responsibility to warrant a PME with the physician coroner. Notably, the death investigation model resulting from the systemic review could eliminate the existing risk that forensic pathologists and coroners will have discrepant case findings.

With respect to governance, an increased role for DIOC in the system will result in additional oversight, public accountability and direction to the OCC and OFPS.

Allowing judges to be appointed as the presiding authority over inquests will create flexibility in the system to utilize the most qualified and appropriate authority to preside over inquests.

### **Expected Drawbacks**

The largest drawback associated with the implementation of the proposed death investigation model relates to the potential attrition of coroners due to a loss of professional satisfaction and involvement in death investigations. Moreover, there is also the potential for confusion with respect to reporting relationships in the day-to-day execution of death investigation for forensic-pathologist-coroners.

Lastly, there is also the possibility that increasing the involvement of DIOC in operational decisions will increase bureaucracy in the system.



# Executive Summary

## Next Steps & Implementation Considerations

**DRAFT FOR  
DISCUSSION  
PURPOSES ONLY**

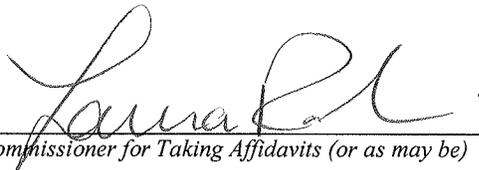
This report summarizes the analysis conducted during this engagement and marks the final deliverable of the project. The Ministry may use this report, along with other relevant analysis and documentation, to inform their discussions and decisions going forward.

Specifically, the Ministry should now consider what changes, if any, should be made to the following aspects of the Ontario death investigation system based on this engagement:

- Death investigation model
- Leadership structure
- The role of DIOC
- Inquest and public safety models

As previously noted, support exists among the Executive Steering Committee and Project Sponsors for the implementation of all models resulting from systemic review save for the proposed death investigation model (“Model 2”). Going forward, the Ministry should give its own thoughtful consideration to all options resulting from systemic review and seek to ensure that all stakeholders are in agreement as to the future directives and operations of the Ministry.

This is Exhibit "M" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018



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*Commissioner for Taking Affidavits (or as may be)*

# The Wettlauffer case

Preliminary review & meeting with Crown  
and OPP on November 16, 2016

Dr Michael Pollanen

Chief Forensic Pathologist for Ontario  
Professor of Laboratory Medicine and  
Pathobiology, University of Toronto

# Cases

1. Maurice Garant
2. Arpad Horvath
3. Helen Matheson
4. Gladys Millard
5. Maureen Pickering
6. James Silcox
7. Helen Young
8. Mary Zurawinski

---

# Insulin & glucose

- Glucose, a simple sugar, is the fuel of the body
- Glucose comes from food and some fluids
- Insulin regulates glucose (along with glucagon)
- Insulin lowers glucose level
- Hypoglycemia: low glucose
  - Confusion, pallor, diaphoresis, shakiness, irritability, hunger, anxiety, tachycardia, dizziness, headache, weakness, reduced level of consciousness, coma, death
  - Mild: mild symptoms only
  - Severe: can be fatal

# Insulin & death

- Administering insulin and dying from its effects are two different things
- The nexus between insulin and death is:
  - Severe hypoglycemia
- The nexus can be suspected, but it cannot be assumed from the perspective of medicine/science

---

## Circumstantial, medical and scientific evidence of fatal insulin-induced hypoglycemia

1. Circumstantial evidence of the non-therapeutic administration of insulin.
2. Severe hypoglycemia preceding rapid death or incapacitation.
3. Irreversible hypoglycemic brain damage (e.g., hypoglycemic encephalopathy preceding delayed death, as confirmed by neuropathologic examination).
4. Elevated insulin level in blood that was out of proportion to C-peptide level, as detected in blood samples obtained at autopsy, or during the hypoglycemic episode.
5. No other alternate cause of death, as determined by autopsy.

# Methodology

- Scope
  - Medical records
  - Wettlaufer's statement
  - Cases reviewed individually, not collectively
  - Only evidence accepted for hypoglycemia was considered to be actual blood glucose measurement
- Limits
  - No autopsies
  - No insulin testing
  - Nonspecific signs/symptoms of hypoglycemia not accepted as clear medical evidence of hypoglycemia (confirmation bias)

---

# Maureen Pickering

- 79 year old woman
- Alzheimer's disease, hypertension, and congestive heart failure. No diabetes.
- On a day in March 2014, at 8 pm, administered 80 U long-acting insulin.
- March 23, 2014, found unresponsive with severe hypoglycemia ("0.4") at 8:00 am, treated with D50W.
- Assessed in hospital with possible pontine infarct.
- Died several days later in palliative care.

# Arpad Horvath

- 75 year old man
- Type II diabetes, hypertension, carotid atheroma, and vascular dementia.
- On a day in August 2014, at approximately 8 pm, administered 80 U short acting insulin and 60 U long acting insulin.
- Found unresponsive and transferred to hospital
- Blood glucose was “3.1” and glucagon was administered.
- Died of a hypertensive intracerebral hemorrhage.

# Maurice Garant

- 84 year old man
- Prostate carcinoma with possible bone metastasis.
- Insulin administered at 8 pm; coma the next morning and dead in afternoon on a day in September or October 2007.
- 5 am, December 23, 2007: Diaphoretic, tachycardic with difficulty breathing; decreased level of consciousness but rousable .
- 10:39 am: unresponsive.
- 11:45 am: dead.

# Helen Matheson

- 95 year old woman
- Dementia, hypertension and peripheral vascular disease.
- 50 U short-acting insulin administered on a day in October 2011; died 2 days later.
- Died at 1 am on October 27, 2011.
- Declining status for several days with morphine administration and apnea, in the setting of end of life care.
- Body buried.

# Gladys Millard

- 87 year old woman
- Newly diagnosed possible breast cancer (right)
- Past medical history: dementia, hypertension, and 'stroke'.
- On a day in November 2011 at approximately 5 am 60 U of short acting insulin and 40 U of long acting insulin administered with diaphoresis and unresponsiveness by 7 am and death in the evening.
- October 14, 2011 at breakfast time was found pale, cold, clammy, drooling, diaphoretic, tachycardic, and twitching.
- Morphine provided.
- Dead at 4:05 pm.

# James Silcox

- 84 year old man
- Insulin-dependent diabetes, hypertension, and Alzheimer's disease.
- 50 U short-acting insulin administered at 10:30 pm with death at 3 am on a day in September 2007.
- Found dead at 3:55 am on August 12, 2017.
- Sudden unexpected death on post-operative day 8 following repair of hip fracture.

# Helen Young

- 90 year old woman
- Dementia, hypertension, atrial fibrillation, and peripheral vascular disease.
- On a day in October 2013, just before supper, 60 U of short acting insulin administered and then 60 U of long acting insulin administered; developed a seizure and died 2 days later.
- Sudden diaphoresis and unresponsiveness with morphine administration and apnea, in the setting of end of life care.

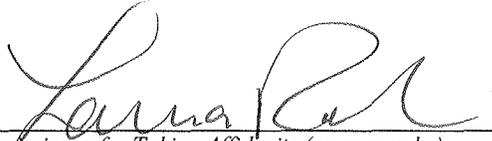
# Mary Zurawinski

- 96 year old woman
- Dementia, COPD, hypertension, and compression fractures.
- On a day in November 2011, at approximately 4 pm, 50 U of short acting insulin and 30 U of long acting insulin administered with death the next afternoon.
- At 5:55 pm on November 6, 2007, patient was in dining room and asked to be brought to bed so she could die.
- At 2:15 am on November 7, 2007 she was found dead.

# Preliminary conclusions

1. In none of the eight cases can the cause of death be medically and scientifically proven to be due to the administration of insulin because autopsies and insulin testing was not conducted in any case.
2. Maureen Pickering died of the effects of hypoglycemia, which corroborates Wettlaufer's statement.
3. Arpad Horvath died of natural causes. Insulin did not play a role in his death.
4. In the other six cases, I am medically undecided about the role of insulin in contributing to death because the medical data is not complete enough to support or refute Wettlaufer's statement.
5. The body of Helen Matheson should be exhumed for autopsy to determine if hypoglycemic encephalopathy is present and to determine the cause of death, if possible.

This is Exhibit "N" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018

A handwritten signature in black ink, appearing to read "Larina R.", written over a horizontal line.

*Commissioner for Taking Affidavits (or as may be)*

Ministry of Community Safety  
and Correctional Services

Ontario Forensic Pathology Service

Forensic Services and  
Coroners' Complex  
25 Morton Shulman Avenue  
Toronto ON M3M 0B1

Telephone: (416) 314-4040  
Facsimile: (416) 314-4060

Ministère de la Sécurité communautaire  
et des Services correctionnels

Service de médecine légale de l'Ontario

Complexe des sciences judiciaires  
et du coroner  
25, Avenue Morton Shulman  
Toronto ON M3M 0B1

Téléphone: (416) 314-4040  
Télécopieur: (416) 314-4060



Log # 21-1869

Dr. Michael S. Pollanen  
Chief Forensic Pathologist for the Province of Ontario

Tel 647-329-1914 (Direct)  
Email [Michael.Pollanen@ontario.ca](mailto:Michael.Pollanen@ontario.ca)

November 17, 2016

Fraser Kelly  
General Crown Counsel  
Criminal Law Division – West Region  
Ministry of the Attorney General  
150 Dufferin Avenue, Suite 202  
London, ON N6A 5N6

Email: [Fraser.Kelly@ontario.ca](mailto:Fraser.Kelly@ontario.ca)

Dear Mr. Kelly,

**Re: R. v. Elizabeth Wettlaufer**

At your request, I have reviewed the medical records and Wettlaufer's statement regarding the deaths of Helen Matheson, Arpad Horvath and six others. In my view, substantial medical/scientific evidence of murder or attempted murder could be gained if the bodies of Matheson and Horvath were exhumed and autopsies were conducted.

In my opinion, the information available from the medical records indicates that both Matheson and Horvath may have sustained irreversible brain damage from insulin-induced hypoglycemia. Examination of the bodies, particularly the brains, could ascertain whether hypoglycemic brain damage is present in either or both. If hypoglycemic brain damage is found to be present, it would corroborate Wettlaufer's statement about administering insulin to Matheson and Horvath.

On a medical basis, the exhumation and autopsy of the remains of Matheson and Horvath is the only way to determine if either or both suffered brain damage incurred by the administration of insulin.

LTCI00065283-1

There is a reasonable basis to believe that autopsies could provide data to indicate the administration of insulin and therefore the possible commission of murder or attempted murder. The pattern of brain damage due to hypoglycemia has been well described in the published medical literature. If this pattern of brain damage is present in Matheson and/or Horvath, this would provide evidence about how they died.

Furthermore, the autopsies may provide material evidence that is not currently available in the investigation to-date. This material evidence includes samples of brain tissue that can be examined by different experts, using histological techniques. This will broaden the type of evidence that could be presented in the setting of a criminal trial.

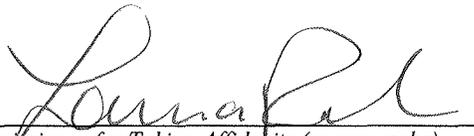
Thus, in the interest of seeking truth behind the deaths of Horvath and Matheson, exhumation and autopsy must occur. There is a reasonable basis to believe, based on medicine and science, that exhumation and autopsy may reveal evidence that could corroborate that the deaths of Horvath and Matheson are related to murder, or that either or both incurred brain damage from attempted murder.

Sincerely,

A handwritten signature in cursive script, appearing to read "M. S. Pollanen".

Michael S. Pollanen, MD PhD FRCPath DMJ (Path) FRCPC Founder, forensic pathology  
Chief Forensic Pathologist of Ontario and Deputy Chief Coroner  
Professor, Department of Laboratory Medicine & Pathobiology, University of Toronto

This is Exhibit "O" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018

A handwritten signature in black ink, appearing to read "Linn Kall", written over a horizontal line.

*Commissioner for Taking Affidavits (or as may be)*

**INITIAL REPORT OF THE MEDICAL INVESTIGATION INTO  
EIGHT ELDERLY PEOPLE WHO DIED UNDER THE CARE OF  
ELIZABETH WETTLAUFFER**

**Prepared for:**

Fraser Kelly, Crown Attorney, London, Ontario

**Prepared by:**

Dr. Michael S. Pollanen, Chief Forensic Pathologist for Ontario

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    - 4.2.1. Scope
    - 4.2.2. Limits
5. RESULTS AND DISCUSSION
6. CONCLUSIONS

## **1. QUALIFICATIONS**

**Michael S. Pollanen BSc MD PhD FRCPath DMJ (Path) FRCPC Founder, forensic pathology**

I am the Chief Forensic Pathologist of Ontario and a Professor of Laboratory Medicine and Pathobiology at the University of Toronto. I am also a Deputy Chief Coroner for Ontario and an investigative Coroner for homicide and criminally suspicious deaths. I regularly perform and supervise medicolegal autopsies, provide second opinions on controversial cases (prosecution, defense, and reviews for other jurisdictions) and testify in court. I have conducted over 2500 medicolegal autopsies, testified over 200 times in court and have twice testified in the Ontario Court of Appeal, Truscott (Re), 2007 ONCA 575 and R. v. Mullins-Johnson, 2007 ONCA 720. My administrative duties include oversight of the Ontario Forensic Pathology Service. My academic duties at the University of Toronto include directing the Centre for Forensic Science and Medicine and the Forensic Pathology Residency/Fellowship training programs. I have a special interest in capacity development of forensic medicine in low and middle income countries to support human rights and the rule of law. I have sustained creative professional activities in forensic medicine and regularly publish in the peer reviewed literature.

## **2. DECLARATION**

I understand that my overriding duty is to the court, both in preparing reports and in giving oral evidence. I have complied with and will continue to comply with that duty. I have done my best, in preparing this report, to be accurate and complete. I have mentioned all matters that I regard as relevant to the opinions I have expressed.

### 3. INTRODUCTION

#### 3.1. Background

On November 3, 2016, I attended a meeting with Fraser Kelly and members of the Office of the Chief Coroner and Ontario Provincial Police. At the meeting, I was briefed about the alleged murder of eight elderly people in long-term care by a nurse, Elizabeth Wettlauffer. The deaths were purportedly caused by the non-therapeutic administration of insulin. I was asked to undertake a medical review of the cases and determine if exhumations were warranted.

On November 4, 2016, medical records and the statements of Wettlauffer were received in my office. On November 6, 2016, I commenced my review of the records. The primary goal of my review was to explore the medical records relative to the purported non-therapeutic administration of insulin. My review was based on my knowledge and experience as a physician and forensic pathologist. Prior to this report, I recommended that the bodies of Arpad Horvath and Helen Matheson undergo exhumation and autopsy.

These cases are different from a usual death investigation. In a typical case, we start with an open hypothesis, perform an autopsy, and proceed with a medical investigation to learn the truth. In this case, a hypothesis was presented from the outset (based on Wettlauffer's statements) and autopsies were not performed. However, the principles and practices of forensic pathology can still equally apply.

Most importantly, for the criminal justice system, a careful and thoughtful review by a forensic pathologist is vital because there is a risk of confirmation bias, based on Wettlauffer's statements.

#### 3.2. Insulin and glucose

The basic fuel of the body is glucose, a simple sugar. We obtain glucose from the food we eat and the some of the fluids we drink. All cells in our body use glucose to stay alive. The glucose is transported to our cells in our blood. As a result, the body has developed two hormones to regulate how much glucose is in our blood: insulin and glucagon. Insulin is a hormone that lowers the level of glucose in our blood. Glucagon is the hormone that increases the level of glucose in our blood. In type 1 diabetes, the body does not make enough insulin, so the glucose level is too high. This is why some diabetic patients are treated with insulin injections. An elevated blood glucose level is called hyperglycemia.

The brain is very vulnerable to a drop in blood glucose level. A drop in blood glucose level is called hypoglycemia. Hypoglycemia is due to many causes; but, if insulin is administered to

someone it can cause hypoglycemia. In hypoglycemia, the brain and the rest of the organs cannot function properly. The symptoms depend on the severity of the hypoglycemia.

In mild hypoglycemia, the symptoms are confusion, pallor, diaphoresis, shakiness, irritability, anxiety, tachycardia, dizziness, headache, weakness, and reduced level of consciousness. This form of hypoglycemia can be reversed by giving the person glucose (or dextrose) by mouth, or by injection. Glucagon can also be given, instead of glucose. In severe hypoglycemia, there can be irreversible brain damage with coma and death. This is called hypoglycemic encephalopathy. Some people with hypoglycemic encephalopathy may appear to have had a stroke.

If a normal person is given insulin by injection, hypoglycemia will occur. If a large amount of insulin is given and severe hypoglycemia occurs, death can ensue by hypoglycemic encephalopathy. This will be preceded by unconsciousness, sometimes with seizures, and progression to coma.

There is another substance, C-peptide, that is produced naturally by the body, along with insulin. It can be measured in the blood to demonstrate how much insulin is being made by the body. In the presence of hypoglycemia, the ratio between insulin and C-peptide can indicate whether excess insulin has been administered.

### **3.3. Death of the elderly**

Most deaths in our society occur due to diseases related to aging, and the accumulated effects of genetic and environmental risk factors such as diabetes, hypertension (high blood pressure), obesity, hypercholesterolemia (high cholesterol) and smoking etc. Such diseases include atherosclerosis (hardening of the arteries) that can lead to myocardial infarction (heart attack), cerebral infarction (a type of stroke), cancer (lung, breast, and colon), hypertensive cardiovascular and cerebrovascular disease (hemorrhagic stroke, kidney failure, heart failure etc), and neurodegenerative diseases (Alzheimer's disease).

In general, when chronically-ill elderly people die, their deaths are routinely attributed to the underlying diseases that have caused their poor health. The person's physician will sign a death certificate indicating the most likely disease that caused the person's death. In the infirm elderly, such deaths are not unexpected. As a result, deaths of the elderly are not routinely investigated by coroners or forensic pathologists in Ontario or any other jurisdiction unless there is obvious trauma or *a priori* suspicion of a crime.

However, it is well known to forensic pathologists that homicides can be easily concealed in the elderly, such as in the case of the serial killer Harold Shipman and others. These deaths are often due to over-administration of medications. The reason why it is difficult to detect deaths

related to the over-administration of medication is that, even if an autopsy is conducted, it would be unusual to undertake laboratory testing to determine the range of medications that might be present in the body at the time of death. In addition, it may be difficult or impossible to detect some of the medications, unless special analytical testing is conducted (e.g., insulin).

A note on palliative care (end of life care) is required in this report. It is good medical practice to provide end of life care to elderly patients who are nearing the end of their life from a disease. One of the components of end of life care is the administration of opiates, such as morphine. Morphine is provided for comfort care but it also depresses the central nervous system's ability to sustain breathing. This is clinically manifested by apnea (periods of no breathing) preceding death when morphine is administered for end of life care. It is a convention in forensic pathology that if morphine (or another opiate) is administered for end of life care in the setting of a terminal illness, that death is attributed to the illness, even if the morphine hastened death. The thinking behind this is that the disease is inevitably fatal, so there is no medicolegal value to opining that the end of life care played a material role in death.

However, if end of life care is provided for a condition that is not related to a disease, such as incapacitation by the non-therapeutic insulin-induced hypoglycemia the situation is different. In the latter circumstance, the person may be comatose (or dying) due to the effects of hypoglycemia, but the morphine is the 'final' cause of death.

Thus, if end of life care is initiated on a patient thought to be dying of a disease, but the patient *was actually comatose due to insulin-induced hypoglycemia*, then the underlying and immediate causes of death are the insulin-induced hypoglycemia and morphine toxicity, respectively.

#### 4. MATERIALS AND METHODS

##### 4.1. Materials

I have reviewed the medical records and handwritten statement of Elizabeth Wettlaufer (September 24, 2016) pertaining to eight patients in long-term care.

All patients resided in Caressant Care (Woodstock) other than Horvath who resided in Meadow Park (London).

All documents were provided to me on a USB key. The list of documents on the USB key included:

Maurice Granat, 84 year old man Cremated	Caessant Care Woodstock - Progress Notes (25 Pages). Medical Certificate of death and Medical Records (396 pages).
Arpad Horvath, 75 year old man Buried	Medication Administration Records (28 pages). Monthly Medication Schedule (147 pages). Meadow Park London - Progress Notes (80 Pages). Meadow Park London - Progress Notes ( 80 Pages). Meadow Park London - Progress Notes (5 Pages).
Helen Matheson, 95 year old woman Buried	Medical Certificate of Death and other notes (354 Pages). Caessant Care Woodstock - Progress Notes (50 Pages). Medical records from Dr. Vu (14 Pages)
Gladys Millard, 87 year old woman Cremated	Caessant Care Woodstock - Progress Notes. - (76 pages) Medical Records (125 pages)
Maureen Pickering, 70 year old woman Cremated	Medical records/ Medical Certificate of Death (258 pages). Caessant Care Woodstock - Progress Notes (47 pages). Caessant Care Woodstock - Progress Notes (49 pages).
James Silcox, 84 year old man Cremated	Caessant Care Woodstock - Progress Notes (10 pages). Medical Certificate of Death and other notes (89 pages). Internal Notes/Outgoing Letters/Invoices/Power of Attorney Information/Affidavits/ Medical Records – (275 pages).
Helen Young, 90 year old woman Cremated	Medical Records – (280 pages). Medical Records – (594 pages). Caessant Care Woodstock Progress Notes.
Mary Zurawinski, 96 year old woman Cremated	Medical Certificate of Death/Medical Records (236 pages). Caessant Care Woodstock Progress Notes.

Furthermore, the statement of Wettlaufer also indicates that insulin was administered to other patients without fatal effect.

## 4.2. Methods

### 4.2.1. Scope

The best circumstantial, medical (clinical and pathological) and laboratory-based evidence<sup>1</sup> to conclude that non-therapeutic administration of insulin caused death would be:

1. Circumstantial evidence of the non-therapeutic administration of insulin.
2. Severe hypoglycemia preceding rapid death or incapacitation.
3. Irreversible hypoglycemic brain damage (e.g., hypoglycemic encephalopathy preceding delayed death, as confirmed by neuropathologic examination).
4. Elevated insulin level in blood that was out of proportion to C-peptide level, as detected in blood samples obtained at autopsy or during the hypoglycemic episode.
5. No other alternate cause of death, as determined by autopsy.

Based on the retrospective nature of the review of the eight cases, none of these criteria can be applied. This is because no autopsies were conducted, no insulin testing was conducted, and blood glucose measurement was conducted in only two cases.

Therefore, for the purposes of my review of these eight cases, I have focused on four variables to guide my assessment:

1. Circumstantial evidence of the non-therapeutic administration of insulin.
2. Severe hypoglycemia as determined by quantitation of blood glucose concentration preceding death, or preceding coma in the case of delayed death.
3. Medical evidence of irreversible hypoglycemic brain damage.
4. Other probable causes of death, appropriate to the clinical context.

More specifically, my analysis could be viewed as comparing the medical data (points 2 to 4) to the circumstantial data (point 1).

### 4.2.2. Limits

There are limits on how much can be learned upon review of these cases because autopsies and insulin analyses were not conducted in any case. To be rigorous in my review, I have: (1) considered each case individually, i.e., I have not considered all cases collectively; (2) only accepted an actual measured glucose blood level to establish if severe hypoglycemia occurred. However, inferring hypoglycemia from the signs/symptoms listed in the medical records could also be done. However, because the symptoms of hypoglycemia are nonspecific, any

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<sup>1</sup> <http://onlinelibrary.wiley.com/doi/10.1002/pdi.875/full>

interpretation could be tacitly influenced by confirmation bias. I believe there is a solution to this problem and it is discussed below.

Furthermore, it is worth remembering that administering insulin and someone dying from its effects are two different things<sup>2</sup>. Clearly, the latter requires the former, but the former does not guarantee the latter. The medical nexus between insulin administration and death requires showing that there was severe hypoglycemia and then showing that the hypoglycemia caused death (i.e., death did not occur coincidentally due to another cause). Finally, the determination of postmortem hypoglycemia is not possible in light of postmortem artefactual decrease in glucose.

## 5. RESULTS AND DISCUSSION

The basic data are summarized in Tables 1. Table 2 summarizes my medicolegal analysis of Table 1.

The death of **Maureen Pickering** stands out compared to all other cases. In her case, there was an acute episode of severe hypoglycemia followed by coma and death. She was treated for severe hypoglycemia by an infusion of dextrose, and then hospitalized. During hospitalization, she was in coma. Clinically, the coma was thought to be due to a possible pontine infarct. She later died in the setting of end of life care with opiate administration.

In my view, Maureen Pickering had severe hypoglycemia that resulted in irreversible brain damage and coma. There are two possible mechanisms for how the hypoglycemia caused the brain damage: hypoglycemic encephalopathy (direct hypoglycemic brain damage) or hypoglycemia-induced cerebral ischemia in the setting of cerebrovascular disease. Maureen Pickering most likely had hypoglycemic encephalopathy, rather than an acute pontine infarct. Specifically, my interpretation of the medical records does not support that coma and death was due to an acute pontine infarct, since the pontine infarct was only equivocally observed on the CT scans. Furthermore, several old lacunar infarcts and other changes typical of chronic hypertensive cerebrovascular disease were present on neuroimaging, thus indicating that an alternate explanation could be an old lacunar infarct of the pons. However, hypoglycemia can also precipitate an acute pontine infarct in the setting of underlying cerebrovascular disease, due to reduced blood flow to the brainstem. We know that she did have underlying cerebrovascular disease, so the latter is mechanistically plausible. Thus, whether Maureen

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<sup>2</sup> This is why an admission of injecting someone with insulin does not amount to satisfactory evidence that the administration of insulin was fatal, even if death ensued. There is a fundamental difference between circumstantial evidence of causation and medical/scientific evidence of causation.

Pickering's coma was due to direct hypoglycemic brain damage, or hypoglycemia-induced cerebral ischemia; both mechanisms herald back to hypoglycemia<sup>3</sup>.

No insulin testing was conducted at the time of the acute hypoglycemic episode. Thus, there is no scientific proof that the hypoglycemia was due to the administration of insulin. The only proof is the statement of Wettlaufer. I note that end of life care was initiated, so opiate toxicity may have hastened/caused death, if the preceding coma was caused by insulin-induced hypoglycemia.

It is indisputable that the medical evidence corroborates the statement provided by Wettlaufer. In her statement, Wettlaufer claimed to have administered "80 units of long-acting insulin" to Maureen Pickering to "cause her some brain damage" and that "she become comatose and died approximately 5 days later".

In the cases of **Maurice Granat, Gladys Millard and Helen Young** blood glucose levels were not measured at the time of death, or during acute clinical deterioration. However, in all cases there was clinical documentation of nonspecific signs/symptoms that could be interpreted as the effects of hypoglycemia, such as:

- **Granat:** Diaphoretic, tachycardic with difficulty breathing; decreased level of consciousness but rousable.
- **Millard:** Pale, cold, clammy, drooling, diaphoretic, tachycardic, and twitching.
- **Young:** Sudden diaphoresis and unresponsiveness.

It is unlikely that I would have suggested hypoglycemia as the cause of the signs/symptoms, if I did not already know about Wettlaufer's statement, i.e., possible effect of confirmation bias. Therefore, the question is: how do we reliably interpret these nonspecific signs/symptoms of hypoglycemia, in retrospect, without succumbing to confirmation bias? In my opinion, the best approach is to determine the frequency of the signs/symptoms in a relevant control population that was not receiving insulin, but is otherwise comparable to the eight cases currently under review<sup>4</sup>. Specifically, we could review the medical records of other patients in the Caressant care facility and see how often such signs/symptoms occurred in people who died, but who we know did not receive insulin. The baseline frequency of the signs/symptoms could then inform an evidence-based opinion about the relevance of the signs/symptoms in the current cases.

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<sup>3</sup> See: Sontineni SP, Lee JM, Porter J. Hypoglycemia-induced pontine infarction in a diabetic male with basilar artery stenosis: insight into the mechanisms of hypoglycemic stroke. *Cerebrovasc Dis.* 2008;25(3):281-2 and associated references.

<sup>4</sup> This is to determine the base rate of the signs/symptoms. This is because, the lower the base rate, the more reliable the inference may become.

The death of **James Silcox** could have been due to complications of his hip fracture (e.g., pulmonary thromboembolism) rather than due to the administration of insulin. An autopsy could have determined if pulmonary thromboemboli were present. Thus, an exhumation and autopsy would be required to retrospectively determine the cause of death. However, the body was cremated. Thus, there is little medical evidence to implicate the role of insulin in his death. Similarly, there is little medical evidence to implicate the role of insulin in the death of **Mary Zurawinski**.

I will not comment further on the deaths of **Helen Matheson** and **Arpad Horvath** until after exhumation and autopsy.

**TABLE 1. CIRCUMSTANCES AND MEDICAL HISTORY FOR THE EIGHT CASES**

<u>Name</u>	<u>Circumstances according to Wettlaufer</u>	<u>Medical history</u>	<u>Past medical history</u>
Pickering	On a day in March 2014, at 8 pm, administered 80 U long-acting insulin.	<ul style="list-style-type: none"> <li>• March 23, 2014, found unresponsive with <u>severe hypoglycemia</u> ("0.4") at 8:00 am, treated with D50W.</li> <li>• Assessed in hospital with possible pontine infarct.</li> <li>• Died several days later in palliative care.</li> </ul>	Alzheimer's disease, hypertension, and congestive heart failure. No diabetes.
Granat	Insulin administered at 8 pm; coma the next morning and dead in afternoon on a day in September or October 2007.	<ul style="list-style-type: none"> <li>• 5 am, December 23, 2007: <u>Diaphoretic, tachycardic with difficulty breathing; decreased level of consciousness but rousable</u>.</li> <li>• 10:39 am: unresponsive.</li> <li>• 11:45 am: dead.</li> </ul>	Prostate carcinoma with possible bone metastasis.
Millard	On a day in November 2011 at approximately 5 am 60 U of short acting insulin and 40 U of long acting insulin administered with diaphoresis and unresponsiveness by 7 am and death in the evening.	<ul style="list-style-type: none"> <li>• October 14, 2011 at breakfast time was found <u>pale, cold, clammy, drooling, diaphoretic, tachycardic, and twitching</u>.</li> <li>• Morphine provided.</li> <li>• Dead at 4:05 pm.</li> </ul>	Newly diagnosed possible breast cancer (right) Past medical history: dementia, hypertension, and 'stroke'.

Young	On a day in October 2013, just before supper, 60 U of short acting insulin administered and then 60 U of long acting insulin administered; developed a seizure and died 2 days later.	<ul style="list-style-type: none"> <li>• <u>Sudden diaphoresis and unresponsiveness</u> with morphine administration and apnea, in the setting of end of life care.</li> </ul>	Dementia, hypertension, atrial fibrillation, and peripheral vascular disease.
Silcox	50 U short-acting insulin administered at 10:30 pm with death at 3 am on a day in September 2007.	<ul style="list-style-type: none"> <li>• Found dead at 3:55 am on August 12, 2017.</li> <li>• Sudden unexpected death on post-operative day 8 following repair of hip fracture.</li> </ul>	Insulin-dependent diabetes, hypertension, and Alzheimer's disease.
Zurawinski	On a day in November 2011, at approximately 4 pm, 50 U of short acting insulin and 30 U of long acting insulin administered with death the next afternoon.	<ul style="list-style-type: none"> <li>• At 5:55 pm on November 6, 2007, patient was in dining room and asked to be brought to bed so she could die.</li> <li>• At 2:15 am on November 7, 2007 she was found dead.</li> </ul>	Dementia, COPD, hypertension, and compression fractures.
Matheson	50 U short-acting insulin administered on a day in October 2011; died 2 days later.	<ul style="list-style-type: none"> <li>• Died at 1 am on October 27, 2011.</li> <li>• Declining status for several days with morphine administration and apnea, in the setting of end of life care.</li> </ul>	Dementia, hypertension and peripheral vascular disease.
Horvath	On a day in August 2014, at approximately 8 pm, administered 80 U short acting insulin and 60 U long acting insulin.	<ul style="list-style-type: none"> <li>• Found unresponsive and transferred to hospital</li> <li>• Blood glucose was "3.1" and glucagon was administered.</li> <li>• Died of a massive cerebral infarct.</li> </ul>	Type II diabetes (oral hypoglycemics), hypertension, carotid atheroma, and vascular dementia.

**TABLE 2. MEDICOLEGAL ANALYSIS OF THE EIGHT CASES.**

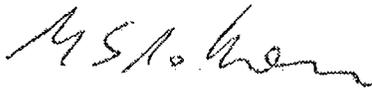
<u>Name</u>	<u>Hypoglycemia</u>	<u>Analysis</u>
Pickering	Severe hypoglycemia proceeding coma	The underlying cause of death is hypoglycemic brain damage. The medical evidence corroborates Wetlauffer's claims to have administered "80 units of long-acting insulin" to "cause her some brain damage" and that "she became comatose and died approximately 5 days later".
Young Granat Millard	Unknown	Each case has nonspecific signs/symptoms of hypoglycemia. But to determine the reliability of inferring hypoglycemia from this evidence, we need to know the base rate of the signs/symptoms.
Silcox Zuranwinski	Unknown	No clear medical evidence of hypoglycemia; death could have been unrelated to insulin administration.
Horvath	Hypoglycemia	
Matheson	Unknown	Exhumation and autopsy is required to determine in hypoglycemic encephalopathy is present.

## 6. CONCLUSIONS

1. Maureen Pickering died of the effects of hypoglycemia. This corroborates Wetlauffer's claim to have administered "80 units of long-acting insulin" to "cause her some brain damage" and that "she became comatose and died approximately 5 days later".
2. I am undecided about the role of insulin in causing death in the other cases:
  - 2.1. I will provide a final opinion on the deaths of Matheson and Horvath after exhumation and autopsy.
  - 2.2. I will provide a final opinion on the deaths of the other cases, after we establish the base rate of nonspecific hypoglycemic signs/symptoms in a retrospective case-controlled review of patients who died naturally in the Caressant care facility.
3. The medical records of the surviving patients with alleged insulin administration must be reviewed using the same analysis framework as I have used for Maureen Pickering.

I reserve the right to amend my report and opinions based on additional information.

Dated: December 1, 2016



Michael S. Pollanen MD PhD FRCPath FRCPC DMJ (Path) Founder, forensic pathology

This is Exhibit "P" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018

A handwritten signature in cursive script, appearing to read "Larina K.", written in black ink.

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*Commissioner for Taking Affidavits (or as may be)*

**Mann, Rick (MCSCS)**

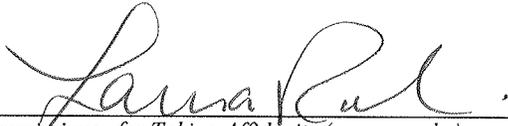
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**From:** Pollanen, Michael (MCSCS)  
**Sent:** January 26, 2017 4:54 PM  
**To:** Mann, Rick (MCSCS)

Case AH  
Well embalmed and mildly decomposed  
No major findings  
Heart, brain and pancreas retained for exam  
Body released  
COD: Pending

Michael  
M.D., M.P.H., P.C.H.P.  
Regional Supervising Coroner  
JAN 26 2017  
West Region - London Office

This is Exhibit "Q" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018

A handwritten signature in cursive script, appearing to read "Larva Kul", is written over a horizontal line.

*Commissioner for Taking Affidavits (or as may be)*

**Mann, Rick (MCSCS)**

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**From:** Pollanen, Michael (MCSCS)  
**Sent:** January 26, 2017 4:54 PM  
**To:** Mann, Rick (MCSCS)

Case HM  
Poorly embalmed and moderately decomposed  
Endometrial carcinoma with regional spread  
Heart and brain retained  
Body released  
COD: pending

MSP

Sent from my BlackBerry 10 smartphone on the Rogers network.



This is Exhibit "R" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018



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*Commissioner for Taking Affidavits (or as may be)*



**REPORT OF POSTMORTEM EXAMINATION**

<b>NAME</b>	Arpad HORVATH
<b>AGE</b>	75 years
<b>SEX</b>	Male
<b>AUTOPSY NUMBER</b>	R2017-00129
<b>CIS NUMBER</b>	2014-14867
<b>CORONER</b>	Dr. M. Pollanen
<b>DATE OF AUTOPSY</b>	January 26, 2017
<b>DATE OF DEATH</b>	August 31, 2014
<b>RESIDENTS &amp; FELLOWS</b>	Dr. T. Brown Dr. N. Richards Dr. A. Williams Dr. S. Park Dr. E. Salagean Dr. S. Morgan
<b>PATHOLOGIST'S ASSISTANTS</b>	Y. Nerkowski
<b>FORENSIC IDENTIFICATION OFFICERS</b>	T. Jackson
<b>INVESTIGATORS</b>	Detective R. Hagerman Detective S. Simone

QUALIFICATIONS

**Michael S. Pollanen BSc MD PhD FRCPath DMJ (Path) FRCPC Founder, forensic pathology**

Michael S. Pollanen is the Chief Forensic Pathologist for Ontario, Canada and a Professor of Laboratory Medicine and Pathobiology at the University of Toronto. He graduated from the University of Toronto with an MD (1999) and PhD (1995) and completed his residency in 2003. His duties include supervising and directing the Ontario Forensic Pathology Service (7000 autopsies/year), conducting autopsy (>2500 autopsies conducted to date), testifying in court (>250 court appearances to date), and directing academic activities in forensic pathology at the University of Toronto. Professor Pollanen's educational focus is training forensic pathologists and strengthening forensic capacity in the developing world. He has been involved in case work or forensic missions in: East Timor, Cambodia, Kazakhstan, Uzbekistan, Haiti, Thailand, Jamaica, Iraq, and Bermuda. His current research interests include nodding disease in Uganda, the pathology of torture, and amyloid. He has published over 80 papers in peer-reviewed journals. Professor Pollanen is a member of the forensic advisory board of the International Committee of the Red Cross and is currently the President of the International Association of Forensic Science (2015-17). He was named a Founder of Forensic Pathology in the Royal College of Physicians and Surgeons of Canada. He is also a Deputy Chief Coroner in Ontario.

DECLARATION

I understand that my overriding duty is to the court, both in preparing reports and in giving oral evidence. I have complied with and will continue to comply with that duty. I have done my best, in preparing this report, to be accurate and complete. I have mentioned all matters that I regard as relevant to the opinions I have expressed.

PRE-AUTOPSY INFORMATION

**MEDICAL HISTORY**

1. Hypertension
2. Coronary artery disease
3. Hyperlipidemia
4. Vascular dementia
5. Stroke (2000, left hemiparesis with left)
6. Carotid stenosis
7. Type II diabetes mellitus with episodic hypoglycemia
8. Chronic kidney disease
9. Ex-smoker and history of ethanol abuse

**MEDICATIONS**

1. Metformin (1000 mg twice daily 08:00 & 17:00, ordered May 2014, received August 19-23).
2. Sitagliptin (50 mg once daily 08:00, ordered August 21, 2014 & received August 22 & 23).
3. Ramipril
4. Risperidone
5. Trazadone
6. Mirtazapine
7. Lansoprazole
8. Rosuvastatin
9. Vitamin D
10. Vitamin B12

**SOCIAL HISTORY**

Admitted to long term care in August 29, 2013.

HISTORY OF PRESENTING ILLNESS & COURSE IN HOSPITAL

August 23, 2014		Yelling, spitting, and swinging fists when approached for care in evening. At 20:50 and was calm; care provided and put to bed.
August 24, 2014	06:15	Unresponsive in bed, diaphoretic, cool, clammy, with elevated body temperature (38C), tachycardia (140 bpm), stable blood pressure (154/84 mmHg), lower than normal oxygen saturation (81%), and blood glucose measured at 3.1 mmol/L.
	06:17	EMS call occurrence time.
	06:28	Glucagon administered with no effect.
	06:31	Blood glucose, 1.4 mmol/L. Dextrose administered, intravenously.  Glasgow coma score of 3, despite increase in blood glucose to 10.4 mmol/L.  Transported to hospital.
	06:55	Hospital triage time.
	07:08	Blood glucose measured at 9.5 mmol/L.
	07:15	Intubated.
	09:20	Blood glucose measured at 2.2 mmol/L; dextrose administered, intravenously.
	09:50	Blood glucose measured at 5.9 mmol/L.
	20:15	Blood glucose measured at 5.4 mmol/L.
August 25	04:20	Blood glucose measured at 13.1 mmol/L.
August 25-30		Blood glucose measured at 4.9-12.1 mmol/L.

August 30	20:29	Blood glucose measured at 2.7 mmol/L (was on insulin infusion; dextrose given and insulin stopped). Extubated.
August 31		Death

In hospital, a CT scan of the head was interpreted to reveal an acute left middle cerebral artery territory/occipital infarct and a remote right middle cerebral artery territory infarct. Additional studies, including MRI/MRA, were interpreted to reveal a left middle cerebral artery territory infarct (posterior limb of internal capsule, posterior insula, left parietal and occipital lobe), nearly complete atheromatous occlusion of proximal left internal carotid artery, moderate atheromatous occlusion of right proximal internal carotid artery, and cerebral arterial atherosclerosis. He remained in coma with seizures, until extubated for end of life care on August 30. Death occurred on August 31.

#### **POLICE INVESTIGATION**

There is history of non-therapeutic insulin administration by a nurse, prior the onset of hypoglycemia. This was not known to the healthcare team at the time of death.

#### **PROCEDURES**

1. Pre-autopsy postmortem imaging is performed (CT scan).
2. Images are obtained by OFPS staff and the police.
3. A standard external examination is performed.
4. A standard internal examination is performed.
5. The brain and heart are retained for examination after fixation.

#### **CONTINUITY AND IDENTIFICATION**

1. The body is presented in a body bag.
2. A coroner's identification tag is present.
3. The identification is established by a coroner's tag.

EXTERNAL EXAMINATION

**GENERAL DESCRIPTION**

1. The body is that of a 5'5" and 141 lb elderly man clad in a blue striped suit, bolo tie, shirt, socks, shoes, and a handkerchief. Personal effects include a folding knife, deck of cards, rosary, lapel pins, and business cards.
2. The body is mildly putrefied with evidence of embalming, mold growth and some mummification.
3. An embalming port is present in the anterior abdominal wall and subsequent dissection shows trocar effects in the organs. The pelvis is wrapped in plastic.

**HEAD AND NECK**

1. The hair is grey and there is male pattern baldness.
2. The eyes are collapsed and covered by corneal shields; the iris is dark.
3. The teeth are natural.

**TORSO AND LIMBS**

1. No lesions.
2. No injuries.

**EXTERNAL GENITALIA AND PERINEUM**

1. No lesions.
2. No injuries.

SIGNS OF (EXTERNAL AND INTERNAL) INJURY

None.

INTERNAL EXAMINATION

The organs and tissues are moderately well preserved by embalming.

**HEAD AND CENTRAL NERVOUS SYSTEM**

SKULL	Not fractured.
MENINGES AND SPACES	See neuropathology report.
CIRCLE OF WILLIS	See neuropathology report. The common, proximal internal and proximal external carotid arteries are examined. There is eccentric sub-occlusive calcific atheroma present throughout the entire system examined.
BRAIN (EXTERNAL)	820 g. See neuropathology report.
BRAIN (INTERNAL)	See neuropathology report.

**BODY CAVITIES**

PERICARDIUM & CAVITY	No effusion or hemorrhage.
PLEURA & CAVITIES	No effusion or hemorrhage.
PERITONEUM & CAVITY	No effusion or hemorrhage.
MEDIASTINUM	Unremarkable.
RETROPERITONEUM	Unremarkable.

**CARDIOVASCULAR SYSTEM**

HEART (EXTERNAL)	440 g. See cardiovascular pathology report.
CORONARY ARTERIES	See cardiovascular pathology report.
ATRIA & VENTRICLES	See cardiovascular pathology report.
CARDIAC VALVES	See cardiovascular pathology report.
MYOCARDIUM	See cardiovascular pathology report.
INFERIOR VENA CAVA	Unremarkable.
AORTA	Mild-to-moderate atherosclerosis.

**NECK AND RESPIRATORY SYSTEM**

TONGUE & SOFT TISSUES	Unremarkable.
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HYOID BONE & LARYNX	Not injured.
TRACHEA & BRONCHI	Copious mucoid material in airways.
LUNGS	Right – 760 g. Left – 630 g. No consolidation, tumour or emboli . There is also a 1 cm calcific nodule in the right upper lobe.

**DIGESTIVE SYSTEM**

ESOPHAGUS	Unremarkable.
GASTRIC MUCOSA	Unremarkable.
INTESTINES	Not obstructed or perforated. The contents and mucosa are not examined.
LIVER	1640 g. Uniform brown parenchyma with no focal lesions.
GALL BLADDER	Unremarkable.
PANCREAS	Unremarkable.

**GENITOURINARY SYSTEM**

KIDNEYS	Right – 130 g. Left – 120 g. Cortex and medulla free of lesions.
URINARY BLADDER	Unremarkable.
PROSTATE GLAND	Enlarged, mild nodularity.

**OTHER ORGANS AND TISSUES**

SPLEEN	220 g. Unremarkable.
LYMPH NODES	Not enlarged.
BONES	No abnormalities or deformities.
SKELETAL MUSCLES	Unremarkable.
PITUITARY GLAND	Not examined.
THYROID GLAND	Unremarkable.
ADRENAL GLANDS	Unremarkable.

MICROSCOPIC EXAMINATION

BRAIN	See neuropathology report.
HEART	See cardiovascular pathology report.
LUNG	Scattered recanalizing and recanalized microthrombemboli; ossified parenchymal nodule; alveolar edema; acute purulent bronchitis.
LIVER	Patchy chronic inflammation of portal triads.
KIDNEY	Moderate chronic hypertensive changes.
PANCREAS	Autolysis.
ADRENAL	Unremarkable.
SPLEEN	Unremarkable.
THYROID	Unremarkable.
CAROTID ARTERIES	There is eccentric calcific atheroma of the right and left carotid arterial system with up to 70% stenosis of the right carotid bifurcation and approximately 50% stenosis of the other branches. There is no acute thrombus.

SAMPLES

TISSUE SAMPLES RETAINED	Small tissue samples have been retained in formalin and will undergo disposition in 2 years.
WHOLE ORGANS RETAINED	The brain and heart are retained. The family was notified.

OPINION

Arpad Horvath, a 75-year-old type II diabetic man, was found to be unconscious and hypoglycemic in his bed at a long-term care facility. He was brought to hospital and was found to have hypoglycemia. In hospital, he remained comatose with seizures and a clinical diagnosis of an acute cerebral infarct due carotid atherosclerosis was made. He died 7 days after he his initial presentation. An autopsy was not conducted.

Several months after death, a nurse claimed to have administered insulin to him, non-therapeutically. This claim precipitated an exhumation and autopsy that occurred 29 months after burial.

At autopsy, the body was moderately well-preserved by embalming. The autopsy consisted of a detailed examination of the body, macroscopically and microscopically. The heart and brain were examined by a cardiac pathologist and neuropathologist, respectively. Toxicologic examination could not be conducted due to embalming. The main findings at autopsy included:

1. There was chronic atherosclerotic and hypertensive cardiovascular and cerebrovascular disease with old cerebral and myocardial infarcts. Other chronic diseases were also present, correlating with the past medical history (e.g., age-related neurodegenerative changes).
2. There were histologic changes in the brain representing a global cerebral insult which could be either due to the hypoglycemia, or hypoxia/ischemia. However, the level of preservation of the brain was not as optimal. Despite this, the preservation of the brain was sufficient to exclude an acute cerebral infarct.
3. Terminal acute bronchitis was present.

My medicolegal analysis of the case involves a clinicopathologic correlation. I have also considered the issue of insulin administration. My analysis is as follows:

1. The sequence of events leading to death started with hypoglycemia. Death occurred 7 days later, following coma.
2. The hypoglycemia could have caused coma and could corroborate the putative administration of insulin. Another possible explanation is hypoglycemia from oral hypoglycemic medication.
3. Hypoglycemic encephalopathy is a possible cause of death. However, the neuropathologic evidence is only suggestive, not definitive.
4. Overall, based on the limitation of the autopsy and the lack of insulin testing at the time of the initial hypoglycemic episode, the cause of death is undetermined.

CAUSE OF DEATH

1 (a)	Undetermined
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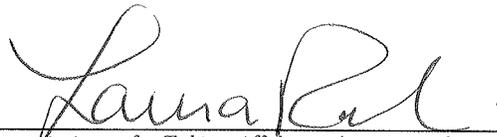
*MSA*

*May 8/17*

MICHAEL S. POLLANEN MD PhD FRCPath DMJ (Path) FRCPC Founder, forensic pathology

Date

This is Exhibit "S" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018



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*Commissioner for Taking Affidavits (or as may be)*



## REPORT OF POSTMORTEM EXAMINATION

<b>NAME</b>	Helen MATHESON
<b>AGE</b>	95 years
<b>SEX</b>	Female
<b>AUTOPSY NUMBER</b>	R2017-00128
<b>CORONERS</b>	Dr. M.S. Pollanen
<b>DATE OF AUTOPSY</b>	January 26, 2017
<b>DATE OF DEATH</b>	October 27, 2011
<b>RESIDENTS &amp; FELLOWS</b>	Dr. T. Brown Dr. N. Richards Dr. A. Williams Dr. S. Morgan Dr. E. Salagean Dr. S. Park
<b>PATHOLOGIST'S ASSISTANTS</b>	T. Gardner Y. Nerkowski
<b>FORENSIC IDENTIFICATION OFFICERS</b>	T. McLachlan M. Wilkinson

**QUALIFICATIONS**

**Michael S. Pollanen BSc MD PhD FRCPath DMJ (Path) FRCPC Founder, forensic pathology**

Michael S. Pollanen is the Chief Forensic Pathologist for Ontario, Canada and a Professor of Laboratory Medicine and Pathobiology at the University of Toronto. He graduated from the University of Toronto with an MD (1999) and PhD (1995) and completed his residency in 2003. His duties include supervising and directing the Ontario Forensic Pathology Service (7000 autopsies/year), conducting autopsies (>2500 autopsies conducted to date), testifying in court (>250 court appearances to date), and directing academic activities in forensic pathology at the University of Toronto. Professor Pollanen's educational focus is training forensic pathologists and strengthening forensic capacity in the developing world. He has been involved in case work or forensic missions in: East Timor, Cambodia, Kazakhstan, Uzbekistan, Haiti, Thailand, Jamaica, Iraq, and Bermuda. His current research interests include nodding disease in Uganda, the pathology of torture, and amyloid. He has published over 80 papers in peer-reviewed journals. Professor Pollanen is a member of the forensic advisory board of the International Committee of the Red Cross and is currently the President of the International Association of Forensic Sciences (2015-17). He was named a Founder of Forensic Pathology by the Royal College of Physicians and Surgeons of Canada. He is also a Deputy Chief Coroner in Ontario.

**DECLARATION**

I understand that my overriding duty is to the court, both in preparing reports and in giving oral evidence. I have complied with and will continue to comply with that duty. I have done my best, in preparing this report, to be accurate and complete. I have mentioned all matters that I regard as relevant to the opinions I have expressed.

**PRE-AUTOPSY INFORMATION**

**MEDICAL HISTORY**

1. Peripheral vascular disease.
2. Essential hypertension.
3. Dementia.
4. Frequent falls.
5. Suspected uterine cancer and weight loss (vaginal bleeding with endometrium thickened to 1.6 cm (2011), no adnexal masses; no biopsy performed).
6. No diabetes mellitus.

**MEDICATIONS**

Metoprolol, telmisartan, senokot, colace, milk of magnesia, B12, acetaminophen, and morphine for end of life comfort.

**SOCIAL HISTORY**

Admit to hospital in December 2009 with failure to cope at home and discharge to a long-term facility in January 2010.

**FINAL COURSE IN LONG TERM CARE**

Progressive deterioration with decreased oral intake, refusal to take medication, weight loss, pallor, and weakness. Died on October 27, 2011 and end of life care with morphine administration. The clinical impression was that death occurred due to uterine cancer.

**POLICE INVESTIGATION**

There is history of non-therapeutic insulin administration by a nurse, prior death. This was not known to the healthcare team at the time of death.

**PROCEDURES**

1. Pre-autopsy postmortem imaging is performed (CT scan).
2. Images are obtained by OFPS staff and the police.

3. A standard external examination is performed.
4. A standard internal examination is performed.

**CONTINUITY AND IDENTIFICATION**

1. The body is presented in 2 body bags.
2. A coroner's identification tag is present.
3. The identification is established by cemetery records.

**EXTERNAL EXAMINATION**

**GENERAL DESCRIPTION**

1. The body is that of a 5'0" and 118 lb elderly woman clad in a dress, stockings, bra, full slip, underpants, necklace, and left wristwatch with a ring on the left ring finger.
2. The body is moderately to markedly putrefied and mummification of the distal extremities. There is mold growth on the skin.
3. The body has been embalmed. There is an embalming incision in the right subclavian area and subsequent dissection shows trocar effects in the organs. The pelvic area is wrapped in plastic.

**HEAD AND NECK**

1. The hair is grey.
2. The eyes are essentially lost to decomposition.
3. The teeth are replaced by dentures.

**TORSO AND LIMBS**

1. No lesions.
2. No injuries.

**EXTERNAL GENITALIA AND PERINEUM**

1. No lesions.
2. No injuries.

SIGNS OF (EXTERNAL AND INTERNAL) INJURY

None.

INTERNAL EXAMINATION

The examination is hampered by moderate to marked putrefaction.

**HEAD AND CENTRAL NERVOUS SYSTEM**

SKULL	Not fractured.
MENINGES AND SPACES	No blood clots.
CIRCLE OF WILLIS	Not apparent
BRAIN	460 g. Putrefied fluidy mass. See neuropathology report.

**BODY CAVITIES**

PERICARDIUM & CAVITY	No effusion or hemorrhage.
PLEURA & CAVITIES	No effusion or hemorrhage.
PERITONEUM & CAVITY	No effusion or hemorrhage.
MEDIASTINUM	Unremarkable.
RETROPERITONEUM	Unremarkable.

**CARDIOVASCULAR SYSTEM**

HEART (EXTERNAL)	210 g. See cardiovascular pathology report.
CORONARY ARTERIES	Widely patent.
ATRIA & VENTRICLES	See cardiovascular pathology report.
CARDIAC VALVES	See cardiovascular pathology report.
MYOCARDIUM	See cardiovascular pathology report.
INFERIOR VENA CAVA	Unremarkable.
AORTA	Mild atherosclerosis.

**NECK AND RESPIRATORY SYSTEM**

TONGUE & SOFT TISSUES	Unremarkable.
HYOID BONE & LARYNX	Not injured.

TRACHEA & BRONCHI	Unremarkable.
LUNGS	Right – 200 g. Left – 230 g. No consolidation, emboli or tumours.

#### DIGESTIVE SYSTEM

STOMACH CONTENTS	Empty.
ESOPHAGUS	Unremarkable.
GASTRIC MUCOSA	Unremarkable.
INTESTINES	Not obstructed or perforated.
LIVER	280 g. Uniform brown parenchyma with no focal lesions.
GALL BLADDER	Not identified.
PANCREAS	Autolysed.

#### GENITOURINARY SYSTEM

KIDNEYS	Right – 60 g. Left – 80 g. Cortex and medulla free of lesions.
URINARY BLADDER	Unremarkable.
UTERUS, TUBES, AND OVARIES	There is a 9 x 5 x 5 cm pink-grey friable left adnexal tumour mass that extends into pelvic side wall. The uterine cavity contains a 5 cm diameter pink-grey friable polypoid exophytic tumour that invades the myometrium.

#### OTHER ORGANS AND TISSUES

SPLEEN	50 g. Unremarkable.
LYMPH NODES	Not enlarged.
BONES	Marked osteopenia and osteoarthritic changes, especially in sternoclavicular joints.
SKELETAL MUSCLES	Unremarkable.
PITUITARY GLAND	Not apparent.
THYROID GLAND	Unremarkable.
ADRENAL GLANDS	Unremarkable.

MICROSCOPIC EXAMINATION

BRAIN	See neuropathology report.
HEART	See cardiovascular pathology report.
LUNG	Postmortem changes.
LIVER	Postmortem changes.
KIDNEY	Postmortem changes with moderate nephrosclerosis.
PANCREAS	Postmortem changes.
ADRENAL	Postmortem changes with cellular nodule (comment: either adenoma or metastatic carcinoma).
UTERUS AND ADNEXAL TISSUES	Markedly decomposed invasive carcinoma.

SAMPLES

TISSUE SAMPLES RETAINED	Small tissue samples have been retained in formalin and will undergo disposition in 2 years. Samples of liver, kidney and psoas are retained and frozen.
WHOLE ORGANS RETAINED	Brain and heart. The family has been notified.

OPINION

This 95 year old woman with a history of gradual decline, attributed to endometrial carcinoma, died in a long-term care facility. There is a historical evidence of non-therapeutic insulin administration. The body was buried and later underwent exhumation and autopsy.

At autopsy, the body was that of an elderly woman with moderate to marked decomposition. Examination revealed regional infiltrative endometrial carcinoma and Alzheimer's disease.

The body was too decomposed to determine the cause of death. Death could be due to endometrial carcinoma and Alzheimer's disease. Furthermore, the body was too decomposed to determine if any findings were present that could corroborate the history of non-therapeutic insulin administration.

CAUSE OF DEATH

1 (a)	Undetermined
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*MS Pollanen*

*May 8/17*

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MICHAEL S. POLLANEN MD PHD FRCPath DMI (Path) FRCPC Founder, forensic pathology

Date

This is Exhibit "T" referred to in the Affidavit of Michael S. Pollanen affirmed July 6, 2018

A handwritten signature in cursive script, appearing to read "Laura R. Kelly". The signature is written in black ink and is positioned above a horizontal line.

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*Commissioner for Taking Affidavits (or as may be)*

Ministry of Community Safety  
and Correctional Services

Ontario Forensic Pathology Service

Forensic Services and  
Coroners' Complex  
25 Morton Shulman Avenue  
Toronto ON M3M 0B1

Telephone: (416) 314-4040  
Facsimile: (416) 314-4060

Ministère de la Sécurité communautaire  
et des Services correctionnels

Service de médecine légale de l'Ontario

Complexe des sciences judiciaires  
et du coroner  
25, Avenue Morton Shulman  
Toronto ON M3M 0B1

Téléphone: (416) 314-4040  
Télécopieur: (416) 314-4060



Log # 21-2117

Dr. Michael S. Pollanen  
Chief Forensic Pathologist for the Province of Ontario

Tel 647-329-1914 (Direct)  
Email [Michael.Pollanen@ontario.ca](mailto:Michael.Pollanen@ontario.ca)

May 25, 2017

Fraser Kelly  
General Crown Counsel  
Criminal Law Division – West Region  
Ministry of the Attorney General  
150 Dufferin Avenue, Suite 202  
London, ON N6A 5N6

Email: [Fraser.Kelly@ontario.ca](mailto:Fraser.Kelly@ontario.ca)

Dear Mr. Kelly:

**Re: R v Elizabeth Wetlauffer (EW) - the 'clinical' cases**

At your request I have reviewed hundreds of pages of medical records on 6 patients, as follows:

1. Michael PRIDDLE, died at 63 years. Huntington's disease.
2. Beverly BERTRAM, date of birth August 28, 1948. Diabetes treated with insulin, hypertension, and peripheral arterial disease.
3. Albina DEMEDEIROS, died at 91 years. Diabetes treated with insulin, and hypertension.
4. Wayne HEDGES, died at 57 years. Diabetes treated with insulin, schizophrenia, seizure disorder, and hypothyroidism.
5. Sandra TOWLER, date of birth April 6, 1939. Diabetes treated with oral hypoglycemic agent, and dementia.

LTCI00065257-1

6. Clotilde ADRIANO, died at 87 years. Diabetes treated with insulin, chronic obstructive lung disease, hypertension, coronary artery disease, and breast cancer.

The records were provided to me by the OPP on an external storage device. The inventory of documents is captured on the directory of the device. Most of the records are clinical notes from long-term care facilities.

I understand that my overriding duty is to the court, both in preparing reports and in giving oral evidence. I have complied with and will continue to comply with that duty. I have done my best, in preparing this report, to be accurate and complete. I have mentioned all matters that I regard as relevant to the opinions I have expressed.

The purpose of my review was to correlate the statement of EW (in which she claims to have covertly administered insulin) with medically-documented episodes of hypoglycemia. My approach was to review cases individually; I did not consider the cases as an aggregate.

I have reviewed the records based on forensic pathology. I am not a clinical expert in diabetes; thus, my perspective is informed by the forensic approach, rather than a patient-care approach. This is both a benefit and a limit. It is a benefit because I am familiar with the types and levels of medical evidence presented in our Courts. It is a limit because I do not have direct clinical experience in treating elderly patients with diabetes, i.e., fluctuations in blood glucose. As a preface to my analysis, I advise caution about interpreting medical records in retrospect in these patients. Many of the patients have complex medical records with comorbidities and advanced age. This makes interpretation of the medical records difficult and must be factored in when assessing the utility of my observations and comments.

Based on my review of the records I offer the following observations and comments:

1. There is no definitive medical evidence that hypoglycemic episodes were caused by the administration of insulin in any of the patients, as claimed by EW. This is because no insulin testing was conducted at the relevant times. Thus, we cannot assess if there is a forensic medical link between EW's claims and any episode of hypoglycemia.

2. Sandra TOWLER. On September 7, 2015 an unexplained episode of severe symptomatic hypoglycemia occurred<sup>1</sup>. This required emergent medical intervention with administration of dextrose by paramedics, who were called to attend the long-term care facility<sup>2</sup>. There was also a brief hospital admission. I note EW's claim to have administered insulin in "winter 2016".
3. Clotilde ADRIANO. Episodes of severe symptomatic hypoglycemia occurred on August 27, 2007<sup>3</sup>, and October 6, 2007<sup>4</sup>. The medical records indicate that the hypoglycemic episodes were attributed to poor oral intake. The medical records also state that a medication error was considered and rejected as an explanation for the October 6, 2007 episode. EW claims to have administered insulin in "September 2007".
4. On a medical basis alone<sup>5</sup>, EW's claims cannot be excluded as an explanation for the three hypoglycemic episodes I have distilled from the medical records. However, after considerable analysis and review, I remain uncertain about how best to forensically interpret the significance of these episodes. Specifically, both patients were diabetic and their medical records showed that they both had fluctuations in blood glucose levels during their stays in long-term care facilities. For example, in the case of ADRIANO there was periodic hypoglycemia over March 6-21, 2007<sup>6</sup>, i.e., remote in time from the two episodes of hypoglycemia in August and October 2007. On this basis, I am unable to differentiate the background fluctuations in blood glucose levels from hypoglycemia that could have been induced by EW.
5. There are no medically-documented hypoglycemic episodes that correlate with the claimed administration of insulin by EW, involving the patients Michael PRIDDLE and Beverly BERTRAM.
6. I am unsure about patients Wayne HEDGES and Albina DEMEDEIROS. There are episodes of hypoglycemia documented. However, the medical records are too complex for me to interpret. Specifically, the complexity of their medical status and baseline variability in blood glucose levels makes interpretation of their medical records, for me, even more difficult than for the other cases.

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<sup>1</sup> Excerpt #1: 100/1957, medical records, Multidisciplinary progress notes. Entry by Dr. Williams.

<sup>2</sup> Excerpt #2: 525/1957, medical records: Telfer Place. Entry by Dianne Beauregard, RN.

<sup>3</sup> Excerpt #3: 37/44, progress notes, Caressant Care Woodstock, Entry by Suzanne Kungl, RN.

<sup>4</sup> Excerpt #4: 34 & 35/44, progress notes, Caressant Care Woodstock, Entry by Miriam Wight, RN and Bradley Lane, RN.

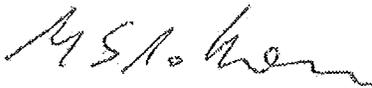
<sup>5</sup> I am unaware if EW had access to the patients at the relevant times.

<sup>6</sup> Excerpt #5: 1-3/693, multidisciplinary progress notes, Caressant Care Woodstock, multiple entries.

7. A review of the medical records by a clinical expert in diabetes may provide further medical insights. For example, a clinical expert may be better able to ascertain the significance of the hypoglycemic events relative to EW's claims, compared to alternate causes of hypoglycemia. I am unable to proceed beyond the analysis I have provided.

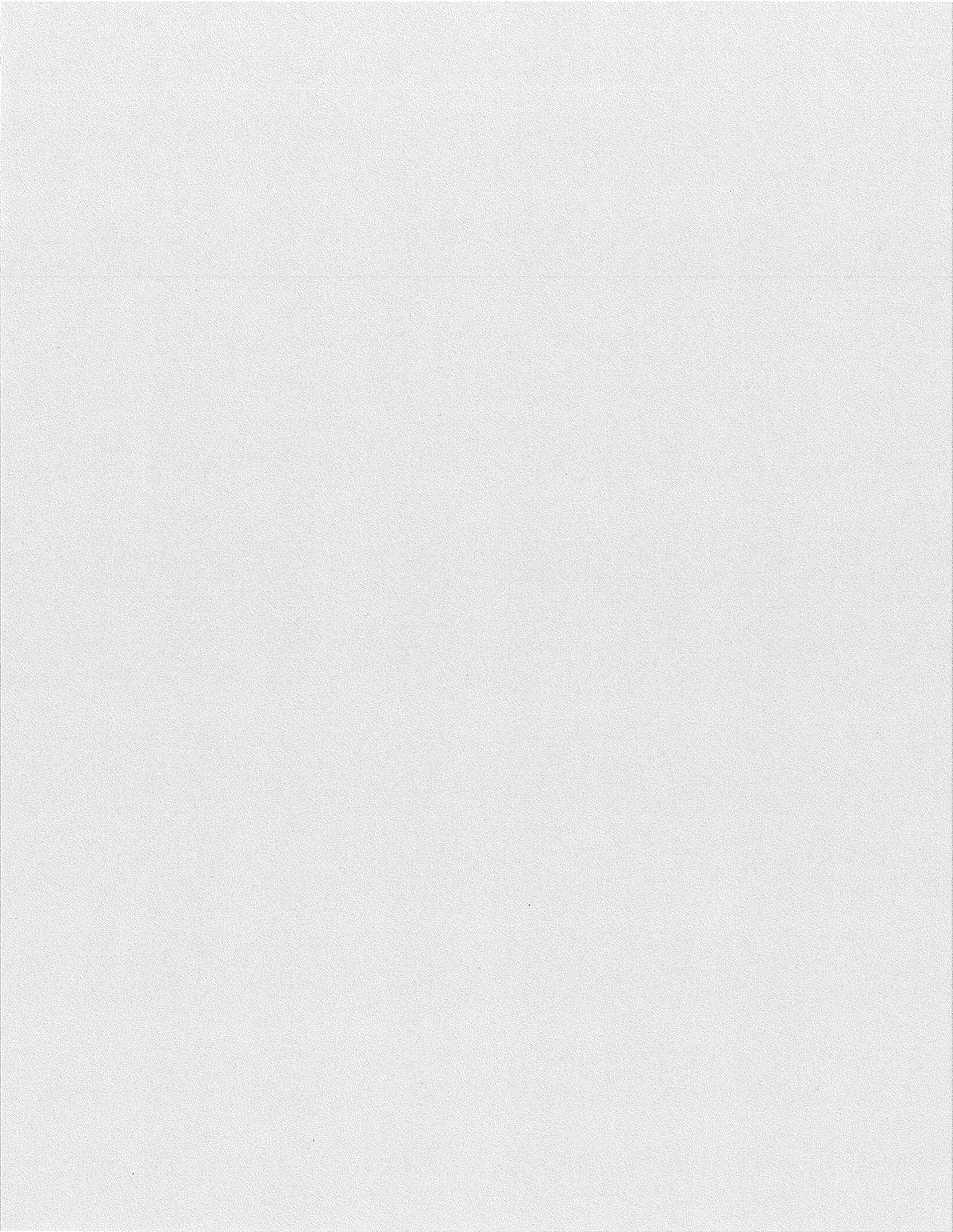
I reserve the right to amend my report based on additional information.

Sincerely,



Michael S. Pollanen, MD PhD FRCPath DMJ (Path) FRCPC Founder, forensic pathology  
Chief Forensic Pathologist of Ontario and Deputy Chief Coroner  
Professor, Department of Laboratory Medicine & Pathobiology, University of Toronto

*Excerpts enclosed.*



Mr./ Miss/ Mrs.

SANDRA  
Given Name

TOWLER  
Surname

MULTIDISCIPLINARY PROGRESS NOTES

DATE	TIME	CODE	DESCRIPTION	SIGNATURE/ DESIGNATION
16/9/15	1330		9 days - episode of unconsciousness attributed to hypoglycemia. Treated with 1L glucose by EMS. Subsequently transferred to BCH later in the evening with ongoing clinical hypoglycemia? reason labs at BCH + LTC reviewed. EP held tramexon + Janumet. Recent CEG F9-10 R/L-16 VS stable bp average 110/60 on PCC Cholesterol 248 -	
			Do Hypoglycemic episode. Metformin low dose resumed Hypotensive ACE dose ↓	J. Williams
21/9/15	1630		No further hypoglycemic episode CEG 7-13 F+R non 60/34 to 110/73 → better level. No side effect of Metformin Dementia gradually worsening with more restrictive behaviours. No sign of delirium. 1cm ulcer on (R) upper back ? ulcerated BCC.	J. Williams

Code Nsg-Nursing Med-Physician Rec-Recreation  
 RD-Dietician C-Consultant OT-Occupational Therapy  
 SP-Speech Therapy FSM-Food Service Manager PT-Physiotherapy  
 Res-Restorative WC-Wound Care Therapy CH-Chaplain  
 ED-Executive Director OM-Office Manager DOM-Director of Marketing

Facility #: 53410  
Date: Oct 7, 2016  
Time: 11:27:21 ET

Telfer Place (7127)  
Progress Notes \*NEW\*

Facility Code: 7127  
User: Cheryl Muise

Primary Physician: All Progress Note Type: All Effective Date Range: 1/2/2015 to 1/2/2016 Effective Time Range: All Created Date Range: All  
Created Time Range: All Author: All Department: All

Resident Name : Towler, Sandra Location : Admission Date : 02/12/2014  
Medical Record # : Gender : F Date of Birth : 04/06/1939

Physician : Williams, Robert Pharmacy : Classic Care Pharmacy

Allergies : CRUSH MEDS GIVE IN PUDDING, Environmental-Dust,Mold Query-Penicillin

Diagnoses : Asthma, unspecified, without stated status asthmaticus(J45.90), Dementia in Alzheimer's disease, unspecified(F00.0), Benign hypertension (I10.0), Conductive hearing loss, unspecified(H90.2), Stroke, not specified as haemorrhage or infarction(I64), Unspecified dementia(F03), Hyperlipidaemia, unspecified(E78.5), Osteoporosis, unspecified(M81.0), Type 2 diabetes mellitus without (mention of) complications(E11.9), Vitamin B12 deficiency anaemia, unspecified(D51.0), Dysphasia and aphasia(R47.0)

Created Date: 09/07/2015 02:44

Effective Date: 09/07/2015 02:35 Type: Interdisciplinary Care

Subjective :

Objective : At 0120 during incontinent care Sandy was not responding to staff.

Assessment : Sandy was pale in color. Skin cold, clammy and diaphoretic. Unresponsive to verbal and painful stimuli, T-35.0 BP103/64 P77 R16 Oxygen saturation 92% on room air.

Blood sugar 2.2

Plan : 911 called at 0130. Paramedics arrived at 0140. IV started in right arm. IV dextrose given by paramedics. After 20 minutes Sandy was responsive and conversing with staff. Speech clear. Denied pain at the time. No nonverbal indication of pain or discomfort noted. Equal hand grips bilaterally. 2 cookies and 1 glass of apple juice taken with no difficulties. At 0220 Blood sugar 6.7.

BP106/66 P55 R16 T35.6

No transfer to hospital needed as Sandy was her normal self.

Will continue to monitor.

Author: Dianne Beauregard Nursing - Registered Nurse

Signature: \_\_\_\_\_

Created Date: 09/07/2015 04:20

Effective Date: 09/07/2015 04:17 Type: Interdisciplinary Care

Subjective :

Objective : POA called and spoke with POA's wife about hypoglycemic episode. Daughter in law stated they will come in for a visit today.

Assessment : 09/07/2015 02:35 Interdisciplinary Care [Author: Dianne Beauregard]

Plan :

Created Date: 09/07/2015 05:53

Effective Date: 09/07/2015 05:46 Type: Interdisciplinary Care

Subjective :

Objective : Sandy rouses easily when spoken to. Conversing well, speech clear.

Assessment : 09/07/2015 02:35 Interdisciplinary Care [Author: Dianne Beauregard]

Plan : Apple sauce given. On call physician called and discussed findings. Dr.Vlaar ordered to stop Diamicron, follow up with family physician in 2 days. Check blood sugars hourly. Oncoming shift will be notified of the above.

RECEIVED  
OCT 07 2016  
OK  
532

Date: Oct 7, 2016  
 Time: 11:00:39 ET  
 User: Helen Crombez

Caressant Care Woodstock  
 Progress Notes

Facility # 52623

Page # 25

Resident Name: Clotilde Adriano	Location: -	Admission Date: 3/5/2007
8/27/2007 07:48	Type: Activity Quarterly Summary	
<b>Note Text:</b>		
<p>Note Text : Resident pale, clammy, perspiring , difficult to rouse at 0030 . Staff were giving orange juice when RN assessed. Bs 2.4 and resident having difficulty swallowing well due to drowsiness so 30cc of corn syrup BS was 3.2 after 20 min. Resident more alert, less clammy and perspiring reduced but remained very pale and 'not feeling well' BP 120/78 .P88 Resident given another 30 cc cornsyrup and orange juice as unable to eat well and BS up to only 3.6. By 0230, Sandwich, juice given with good results. Resident's BS at 0600 was 9.6, BP stable and resident states she is feeling much better.</p>		
Transcriber: Suzanne Kungl Nursing - RN		
8/28/2007 22:32	Type: Food & Fluid Intake & Output	
<b>Note Text:</b>		
<p>Resident's blood sugar at 16:30 was 5.3. Resident was given 60 cc.s resource at 17:10 as supper was served to her late and resident was slumped at table with her eyes closed.</p>		
Transcriber: Elizabeth Wettlaufer Nursing - RN		
8/23/2007 23:16	Type: LAB/DIAGNOSTIC NOTE	
<b>Note Text:</b>		
<p>Blood sugar @ HS 3.6. Resource 2.0 125cc and banana given.</p>		
Transcriber: Lois Durbldge Nursing - RN		
8/16/2007 06:39	Type: LAB/DIAGNOSTIC NOTE	
<b>Note Text:</b>		
<p>Blood drawn for creatinine, electrolytes, INR.</p>		
Transcriber: Jennifer Hague Nursing - RN		
8/13/2007 22:50	Type: Behaviour	
<b>Note Text:</b>		
<p>wrong chart -          wrong chart - Behavior Exhibited - Ingestion of foreign substances—observed drinking sweetener and also poured skin lotion onto her hand and licked it off.          wrong chart - Intervention - Joanne was redirected from dining room. Put her on her bed for a rest.          wrong chart - Time and Frequency - 5 min x 2          wrong chart - Evaluation - Good</p>		
Strike Out Date:		
Transcriber: Shelly Clark Nursing - RN		
8/13/2007 22:49	Type: Pain	
<b>Note Text:</b>		
<p>We have been giving Clotilde her prn tylenol routinely, tid to help keep her comfortable. This has been effective and continues. We are awaiting Dr. Reddick's visit to obtain the order to give the tylenol routinely.</p>		
Transcriber: Shelly Clark Nursing - RN		
8/6/2007 00:34	Type: Food & Fluid Intake & Output	
<b>Note Text:</b>		
<p>Resident has been refusing H.S. snack, Blood sugar tonight was 3.6 Resident was given snack and staff stayed with her until she had taken it all. Blood sugar was rechecked at 22:50 and was 5.6</p>		
Transcriber: Elizabeth Wettlaufer Nursing - RN		
7/30/2007 11:25	Type: Dietary Note	
<b>Note Text:</b>		
<p>Note Text ; Nutrition F/U for high risk status finds resident to still be experiencing hypoglycemic incidents which tend to occur in the evening despite getting 125 ml milk at PM snack (6 grams CHO, 4 gram protein) and a whole sandwich at HS (30 gram CHO, 4 gram Protein). Do not want to increase size of snacks as residents weight is up 0.8 kg this month and is 137% ABWR. For hypoglycemic episodes administer 15 grams of quick acting glucose such as 125 ml of apple or orange juice (Resource not best choice). Repeat treatment in 15 minutes if blood glucose level remains less than 4 mmol/L. If next meal or snack is more than 1 hour away, follow treatment with a sustaining snack that contains carbohydrate and protein such as cheese and crackers or 1/2 sandwich or 125 ml milk. Note: This resident does not have an order for Resource supplement.</p>		
Transcriber: Karen Reading Dietary - Dietitian		
7/29/2007 02:41	Type: Pain	
<b>Note Text:</b>		
<p>We have been doing a trial of Tylenol 500 mg ii tabs tid routinely with a good effect. Awaiting Dr. Reddick's visit so he can order this routinely as it has been effective.</p>		
Transcriber: Shelly Clark Nursing - RN		
7/24/2007 14:52	Type: Activity Quarterly Summary	
<b>Note Text:</b>		
<p>Held sanokot at 0600.</p>		

Date: Oct 7, 2016  
 Time: 11:00:39 ET  
 User: Helen Crombez

Caressant Care Woodstock  
 Progress Notes

Facility # 52623

Page # 22

Resident Name: Clotilde Adriano [REDACTED] Location: - Admission Date: 3/5/2007

10/17/2007 16:32 Type: Medication Note

Note Text: Did leave note to Dr. to ask if Anuzinc could be ordered if needed sine Anusol is not covered.

Transcriber: Miriam Wight Nursing - RN

10/17/2007 12:28 Type: Family Note

Note Text: Family TC back, will pay for anusol and for staff to please order.

Transcriber: Laura Huck Nursing - RPN

10/16/2007 23:00 Type: Family Note

Note Text: Message left with daughter re: prescription cost for Anusol @ 2000hr.

Transcriber: Lois Durbidge Nursing - RN

10/16/2007 07:21 Type: Skin/Wound Note

Note Text: Head to toe assessment completed on return from hospital, has a small bruise on right elbow, no other skin problems noted. Slept well, is weak and pale.

Transcriber: Shelly Clark Nursing - RN

10/15/2007 19:07 Type: Transfer/LOA

Note Text: Returned from hospital. Appears pale and frail. Orders received, and daughter-in law visited this p.m.

Transcriber: Miriam Wight Nursing - RN

10/11/2007 17:14 Type: Transfer/LOA

Note Text: Called hospital to-day. Staff report that she is "fine", less drowsy.

Transcriber: Miriam Wight Nursing - RN

10/9/2007 18:01 Type: Transfer/LOA

Note Text: Called hospital to-day. The staff report that resident remains very lethargic. Nurse said her blood sugars have been somewhat higher.

Transcriber: Miriam Wight Nursing - RN

Late Entry

10/7/2007 17:58 Type: Family Note

Note Text: Daughter called to say that mother is to be admitted to floor when bed becomes available. She is on I.V. -getting glucose, yet her B.S. is still only around 5.

Transcriber: Miriam Wight Nursing - RN

10/7/2007 16:33 Type: Family Note

Note Text:

Note Text : Resident was down to breakfast. Ate 4 packages of jam. fluids, toast. Staff report at approx. 1030, that resident is very diaphoretic. B.S. 1.9. Given glass of sweetened applejuice, and crackers and jam. Also given small choc. bar. B.S. 5.3. At 1130, it was down to 3.3. Daughter visiting. Sates some heaviness in chest but no longer diaphoretic. Tray given at noon. Blood sugar 3.7. after good lunch. Lethargic at times and barely responds to daughter. Daughter concerned and would like her mother checked. Spoke to Dr. on call, and although he says that an infection usually makes a B.S. go up, her agreed that resident could be sent to hospital. Ambulance and Emerg. notified.

Transcriber: Miriam Wight Nursing - RN

10/7/2007 07:23 Type: Incident Note

Note Text:

Subjective : Note: when speaking with Dr. Yu, he told me to observe resident here, not necessary to send to hospital.

Objective :

Assessment :

Plan :

Transcriber: Bradley Layne - RN - Temp

10/7/2007 04:56 Type: Incident Note

Note Text:

Subjective : Resident's bloods sugar remained unstable throughout the night continually dropping. I called Dr. Yu at 0415 to recieve orders on her treatment and he told me that a nurse from CC had called earlier in the evening to inform him of an insulin overdose, the resident was recieving 30/70 insulin and got a dose of almost 30 units. He told me that I needed to continue to monitor her BS and continue to give juice and carbohydrates. After speaking with Dr. Yu I checked for any incident reports and found none completed, I was not informed of any overdoses at shift change.

Date: Oct 7, 2016  
 Time: 11:00:39 ET  
 User: Helen Crombez

Caressant Care Woodstock  
 Progress Notes

Facility # 62623

Page # 23

Resident Name: Clotilde Adriano	Location: -	Admission Date: 3/5/2007
<p><b>Objective :</b> At 2315 resident found by PSW's diaphoretic, lethargic, RN alerted. BS 1.9, resident given 10cc corn syrup, 7 tsp of sugar in 450cc of apple juice. BS increased to 3.8. At 0330 BS 2.2, Glucagon 1mg given SC, resident roused and given more apple juice. Dr. Yu called at that time.</p> <p><b>Assessment :</b></p> <p><b>Plan :</b> Continue to monitor BS q1h, give juice with sugar and carbohydrates until sugars stabilize.</p> <p>Transcriber: Bradley Layne - RN - Temp</p>		
10/5/2007 03:54	Type: Nursing Quarterly Summary	
<p><b>Note Text:</b></p> <p><b>Nursing Summary :</b> This 86 year old female admitted on 3/5/2007 with Dx of IDDM,CAD,COPD,HTN,Obesity, Arthritis, L Br.Ca, Umbilical Hernia. She has been stable this last quarter up until last week when her blood sugars were trending low and insulin adjustments were made.</p> <p><b>Biological/Physical:</b> Clotilda has lost some weight since admission, but remains 20kg above goal weight (46.4-56.4kg) at 76.4kg.</p> <p><b>ADL's and CCL's</b> have been reviewed on 10/5/2007 and are current as per care plan.</p> <p><b>Behavioral/Safety:</b> Staff are concerned she may be feeling socially isolated at times due to language barrier. Interventions per RCP require 1:1 10 min x3/daily. She appears sad/depressed at times, staff spend 10 min x2 daily enquiring of her day.</p> <p><b>ADL and CCL :</b> ADL's and CCL's have been reviewed and are effective, current and ongoing as per care plan.</p> <p><b>Potential for Injury :</b> Clotilde is at risk for injury to self from falls due to unsteady shuffling gait. requires assistance and supervision when walking from 1 staff 20 minutes per shift.</p> <p><b>Ineffective Coping :</b> She appears sad/depressed at times, staff spend 10 min x2 daily enquiring of her day. she spends meals with her sister, [REDACTED] and relatives visit often.</p> <p><b>Pain Management :</b> Pain management is effective as per CP, adjustments have been made since last review.</p> <p><b>Restraints :</b> Uses none.</p> <p><b>Skin Integrity :</b> Skin is normal colour and turgor, intact.</p> <p>Transcriber: Lois Durbidge Nursing - RN</p>		
10/2/2007 15:57	Type: Physician visit/contact Note	
<p><b>Note Text:</b> Reviewed sugars with Dr. Reddick over the phone as they have been low in the morning. He decreased her insulin.</p> <p>Transcriber: Shelly Clark Nursing - RN</p>		
9/28/2007 13:48	Type: Nursing Quarterly Summary	
<p><b>Note Text:</b></p> <p><b>Nursing Summary :</b> This 86 year old female admitted on 3/5/2007 with Dx of diabetes, hypertension, angina,arthritis, COPD, umbilical hernia and left breast cancer[has been stable / this last quarter:</p> <p><b>Biological/Physical:</b></p> <p><b>ADL's and CCL's</b> have been reviewed on 6/15/2007 and are current as per care plan.</p> <p><b>Behavioral/Safety:</b></p> <p><b>ADL and CCL :</b> have been reviewed and are current as per care plan.</p> <p><b>Potential for Injury :</b> Has a high risk of falls due to unsteady shuffling gait. requires assistance and supervision when walking from 1 staff 20 minutes per shift.</p> <p><b>Ineffective Coping :</b> Communication with care givers continues to be a struggle due to language barrier. Takes 1 staff 10 minutes per shift.</p> <p><b>Pain Management :</b> Pain management is effective as per CP.</p> <p><b>Restraints :</b> N/A</p> <p><b>Skin Integrity :</b> Skin interventions effective as per CP.</p> <p>Transcriber: Elizabeth Wettlaufer Nursing - RN</p>		
9/27/2007 18:29	Type: Pain	
<p><b>Note Text:</b> Complaining that she feels that bowels must move. Supp. given for small amount soft stool felt high in rectum.</p> <p>Transcriber: Miriam Wight Nursing - RN</p>		

RESIDENT NAME CLOTILDE ADRIANO		MULTIDISCIPLINARY PROGRESS NOTES			
ROOM NO. 39		BED NO. 2		ATTENDING PHYSICIAN REDDICK.	
DATE/TIME	PROBLEM/FOCUS	DISCIPLINE	NOTES		SIGNATURE
MAR 4/07		1400	I met to daughter L. to complete nursing history and sign vaccine consents with consent & management of life form done in a town of CWH (any L. Milledon) RN.		
1100			Admitted via wife from R.H. accompanied by staff. Pleasant. Has leg cast & some unfortable. wife lying down (unilateral) Dr. awake. Orders received 2pm B.P. 152/52 P. 70 R-18 Temp. 35.6		
1400			In DR - ate well at table E. sister family in to help with law filing		
MAR 5/07			no vocal for main shift. All dinner well socializing & eating. Pleasant & cooperative.		
2230			Slept well, no chills		
6/13/07 6-3-07	status NSG.	RN 1030	Mobility & transfer assessment completed 1 staff provided assistance transfer. Braden scale score 22: not at risk for development of pressure ulcers. Restraint assessment completed - none required. Fall risk assessment score 11: medium risk for falls. DR RCP interventions under safety. RCP completed.		
MAR 6/07	change		A. L. Milledon RN		
6-3-07			very receptive, pleased when Mike & med. takes well. No vocal complaint, very pleasant. In dining room for meals.		Res
6/3/07	VBS	NSG	Rola, diaphoretic @ 2130h. Blood sugar taken @ 2230h and was 2.3. Orange juice and 60cc corn syrup given. Night shift RN made aware.		
6/3/07	Sign	RN	Took a glass of juice + 1/2 sandwich in first rounds.		SCR
6/6/07	Sign	RN	Slept well; no chills Accu check this am = 32.8.		SCR

USE REVERSE FOR FURTHER NOTES

DATE/TIME	PROBLEM/FOCUS	DISCIPLINE	NOTES	SIGNATURE
7/13/07	11:20		Very little. He a.m. + pm - rest.	
7/13/07		NSG	Refused to come to supper - 1/2 day nothing. Took poor supper in morning. US can't give insulin @ 1000 to help settle.	
8/3/07	12:00	NSG	Milk of Magnesia 30ml given to bowels. Pleasant. Visiting sister in Am.	
9-3-07		NSG	BS at 2:00 2.8 O.I. given. - m. Carling RN 3	
9-3-07	2:10 entry		Very wet & perspiring. Asked Maynard to do BS. was hypoglycemic. All mellowed	
9-3-07		NSG	BS at 2:30 3.9. - m. Carling RN	
10/3/07	BS	RS	Blood sugar remains 3.9. Milk 1200 Resburap plus + 1/2 sandwich	Alvin
10/3/07	BS	RS	BS = 10.4. Slept well	Alvin
10/3/07			Deep sedating from room to DR. Early bedtime	Alvin
11/3/07	1400	NSG	Slept well	Alvin
11/3/07	1400	NSG	Appears lethargic.	Alvin
2/3/07		RS	Noted pale, diaphoretic. BS = 1.7. Given 125ml Resburap plus. Very "giggly" & euphoric - (unsteady on) feet & almost fell.	Alvin
3/3/07		RS	Took 2 arrowroot cookies & a glass of milk. BS = 7.5 after.	Alvin
3/3/07	BS	RS	BS = 3.1 - OS given & rechecked @ 5:14	Alvin
13-3-07		NSG	1/2 dose of 100mg qd & given 1/2 500mg tylo 1345 & no effect yet @ thick RR	
4-3-07		NSG	1/2 500mg tylo given @ 1200 & no effect yet @ thick RR	
4-3-07		NUTRITION	Nutrition Profile started Open Mark's Probiotic diet with mineral tablets - M. Springer D.C.	
4/03/07		NUTRITION	Nutrition Profile Completed, see pcc. Care Plan started, see pcc. Moderate Nutritional Risk due wt 72% ABO and IDDM. High Fibre Intolerance all being owned to constipation. To be followed	Alvin, RD
10/13/07	10:30	NSG	BS = 2.0 - Given orange juice & cran syrup - rechecked 15 min later @ 3:8 with monitor	Alvin



RESIDENT NAME *Clotilde Adriano*  
 ROOM NO. *39* BED NO. *2*

MULTIDISCIPLINARY PROGRESS NOTES

ATTENDING PHYSICIAN *Dr. Reddick*

DATE/TIME	PROBLEM/FOCUS	DISCIPLINE	NOTES	SIGNATURE
18-3-07 1200	B.S.	NSG	Blood sugar at 3.0 - feeling shaky - SOB given orange & burger + juice. Drinking tea. Little morsel of lunch. Family expressed concern that resident is now lethargic & bloated. Had 2 deep sup.	
19-2-07	B.S. 0600 sup		Blood sugar 2.2 - responds to voice, able to drink orange juice. B.S. @ 0700 3.8 -	<i>Dr. Reddick</i>
19/3/07 1430			Call to Dr. re ↓ B.S.	
20/3/07	B.S.	NSG	Blood sugar 1.7 @ 0530h Orange juice + juice + orange juice given + 2 egg salad sandwich + 2 bananas + banana being called @ 0630h B.S. 4.4, sup in WC, a lot.	<i>Dr. Reddick</i>
20-3-07	Blood sugar	NSG	Starve down for 2 hrs and now	<i>Dr. Reddick</i>
20/3/07 1700			Appears more tired + requiring more care.	<i>Dr. Reddick</i>
20-3-07		NSG	1630 B.S. 2.9 Orange juice + bread + butter given. B.S. 6.3 @ 1700, lasulin given @ this time. B.S. 7.0 @ H.S. Comfortable @ this time.	<i>Dr. Reddick</i>
21/3/07	Blood sugar	NSG	Blood sugar 3.2 Orange juice + corn syrup (30a) given (200u)	<i>Dr. Reddick</i>
21/3/07	7150	NSG	Diaper change for 2nd soft stool.	<i>Dr. Reddick</i>
21/3/07 2205	incontinence reaction	RN	Biggest behavior, flailing arms screaming, diaphoretic. Washed B&W what she had. C.H. snack - drunk mly as didn't want food. Accucheck read "error". Refused to drink. Accucheck now 0.7. Given 4 tsp corn syrup - no improvement. Mucagon injection prepared - RN checked sugar - now 12.4 1/2 Mucagon not given. Behavior remains unchanged. Staff present	<i>Dr. Reddick</i>
21/3/07 2315	incontinence	RN	Remains unchanged -	<i>Dr. Reddick</i>

USE REVERSE FOR FURTHER NOTES