Pathway to Modernization

Ontario Forensic Pathology Service

Annual Report July 27, 2012 – July 26, 2013

Ontario

← Coroner's Courts Entrance
← Bicycle Parking
↑ Main Entrance
↑ Shipping & Receiving

Cover photo: The new Forensic Services and Coroner's Complex, completed in summer 2013. Staff moved into the new facility in September the same year.

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Chief Forensic Pathologist's Report

Once again, I have the privilege of writing the foreward for the annual report of the Ontario Forensic Pathology Service (OFPS), the statutory entity that provides medicolegal autopsy services. During the past year (and in a slightly enlarged reporting period for the purposes of this report), we have achieved several important milestones on our path towards modernization. I am enormously proud of the efforts of our staff in working together to move us forward.

After a seamless move to the Forensic Services and Coroner's Complex in northwestern Toronto in September 2013, we are now fully operational in our new headquarters. I am proud to share that we now work in the best forensic facility in the world. The new facility equips us to deliver a number of innovative programs, such as molecular autopsy, postmortem imaging with CT and magnetic resonance, postmortem recovery of tissues for transplantation and enhanced continuing education and professional development. These advances will help drive the continued refinement of the field of forensic pathology, and I look forward to sharing the progress of these initiatives in next year's annual report.

I am also pleased to share that the Minister of Community Safety and Correctional Services has directed us to widen the professional scope of forensic pathologists in Ontario, stemming from recommendations from an external review of Ontario's death investigation system by KPMG. Specifically, forensic pathologists will soon be appointed coroners for homicides and criminally suspicious cases. Now that forensic pathologists will determine the cause and manner of death in these complex cases, the duties, responsibilities and accountability of forensic pathologists will be better aligned. This will result in benefits to families and other stakeholders, such as the criminal justice system. Forensic pathologists welcome this recognition of their contribution to death investigation, which is also endorsed by the Death Investigation Oversight Council and a number of key stakeholders.

Another achievement has been the ongoing resolution of issues related to past organ retention practices. Many families have responded to our widespread public notification initiative, which involved newspaper ads, news releases, and a media announcement in 2012. We continue to help families who inquire by giving them information about whether their loved one's organ was retained, and by supporting their decisions about the disposition of available organs. Our current policies ensure that families are notified when an organ must be retained and asked how that organ should be treated when testing is completed. As an organization, we have learned from the past, and continually strive to foster and maintain public trust and confidence through transparency and open communication.

In the past year, we have contributed to the administration of justice in the province by providing credible, independent expert witness testimony in court and at inquests. The public has had the benefit of the medical expertise of Ontario's forensic pathologists.

We have also promoted international and local capacity development through our continuing education and professional development initiatives. Our forensic pathology training program, delivered in partnership with the University of Toronto, is going strong and was favorably reviewed by the Royal College of Physicians and Surgeons of Canada. Ontario pathologists are contributing to the academic landscape through teaching, research activities and publishing.

It is incredibly rewarding to serve as part of the death investigation team in Ontario. We are fortunate to do fascinating work that helps families, the public and the criminal justice system in a meaningful way.

Michael S. Pollanen MD PhD FRCPath DMJ (Path) FRCPC Founder, forensic pathology
Chief Forensic Pathologist for Ontario
Director, Centre for Forensic Science and Medicine
Associate Professor, University of Toronto

About Us

The 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 diseases 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 16,000 deaths investigated by coroners annually, about 6,000 undergo medicolegal autopsy performed by pathologists working under the auspices of 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.

Our Vision

A seamless forensic pathology system that fully integrates public service, education and research.

Our Mission

To provide the highest quality forensic pathology service aimed at contributing to the administration of justice, preventing premature death and protecting public safety.

Our Values

The OFPS and the OCC share core values that speak to our commitment to public service:

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.

Diversity: We respect a diverse team with different backgrounds, professional training and skills.

The OFPS encourages the practical application of these core values. This is achieved by embracing an independent and evidence-based approach that emphasizes the importance of thinking objectively in pursuit of the truth.

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 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 Madeleine Meilleur. The Deputy Minister of Community Safety, Mr. Ian Davidson, provides direction on administrative matters.

The Death Investigation Oversight Council ensures that death investigation services are provided in an effective and accountable manner. As an independent advisory agency, DIOC provides oversight of the OFPS and OCC, administers a public complaints process and supports quality. 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:

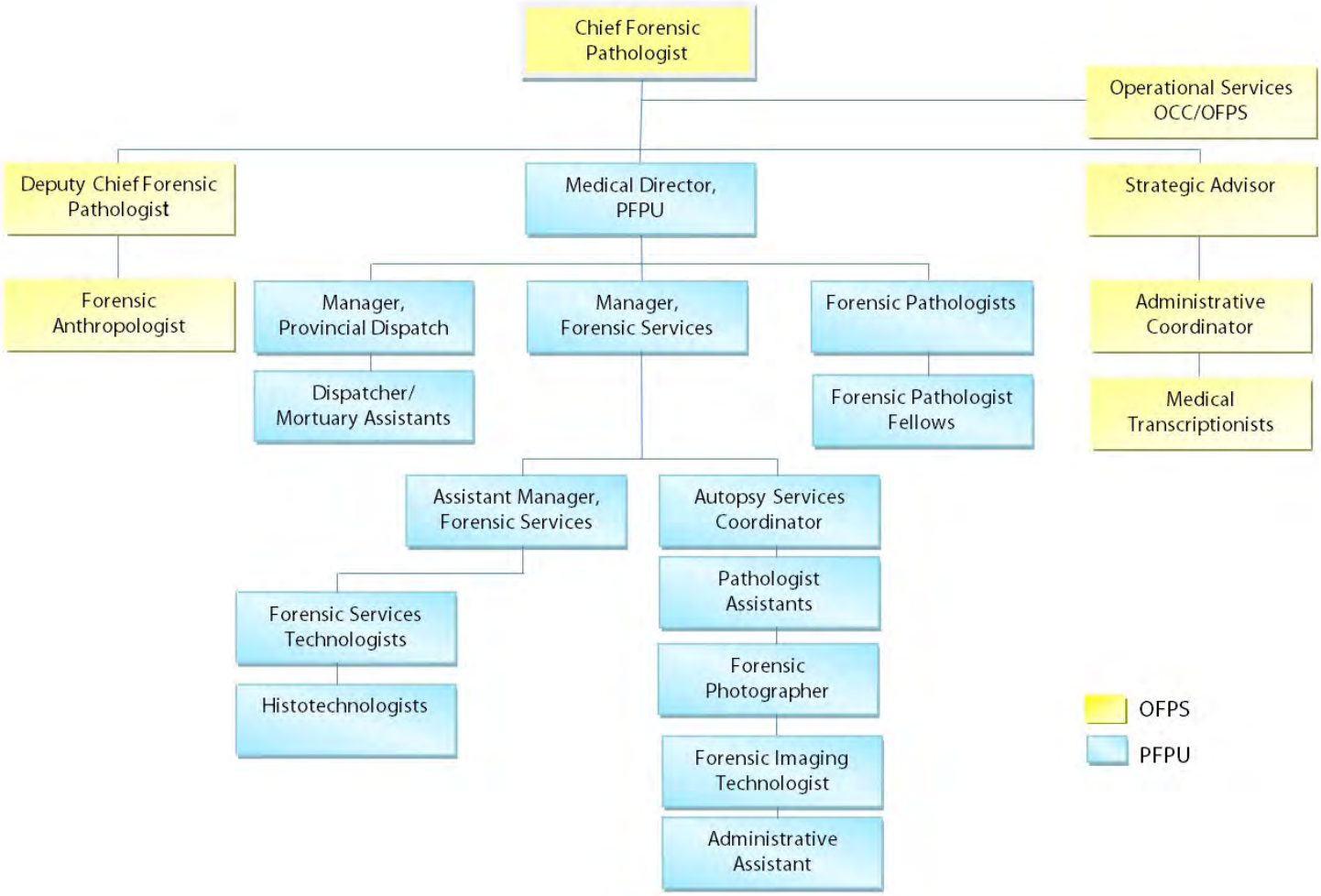
- supervises and directs pathologists in the provision of services
- conducts programs for the instruction of pathologists
- prepares, publishes and distributes a code of ethics
- maintains a register of pathologists authorized to provide services

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.

The head office of the OFPS recently relocated to a new facility in northwest Toronto. The OFPS is co-located with the Provincial Forensic Pathology Unit, the Office of the Chief Coroner (OCC) and the Centre of Forensic Sciences (CFS) to facilitate communication and professional collaboration. The OFPS and the OCC are supported by Operational Services, led by a Director who oversees 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 1,900 autopsies per year, mainly originating in the Greater Toronto Area. The PFPU,



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 PFPU reports to the Chief Forensic Pathologist. In July 2013, Dr. Jayantha Herath became the Medical Director of the PFPU.

The operation of the PFPU includes professional and technical roles in addition to forensic pathologists. These include a forensic anthropologist, pathologist assistants, technologists and imaging specialists, as well as administrative and management personnel.

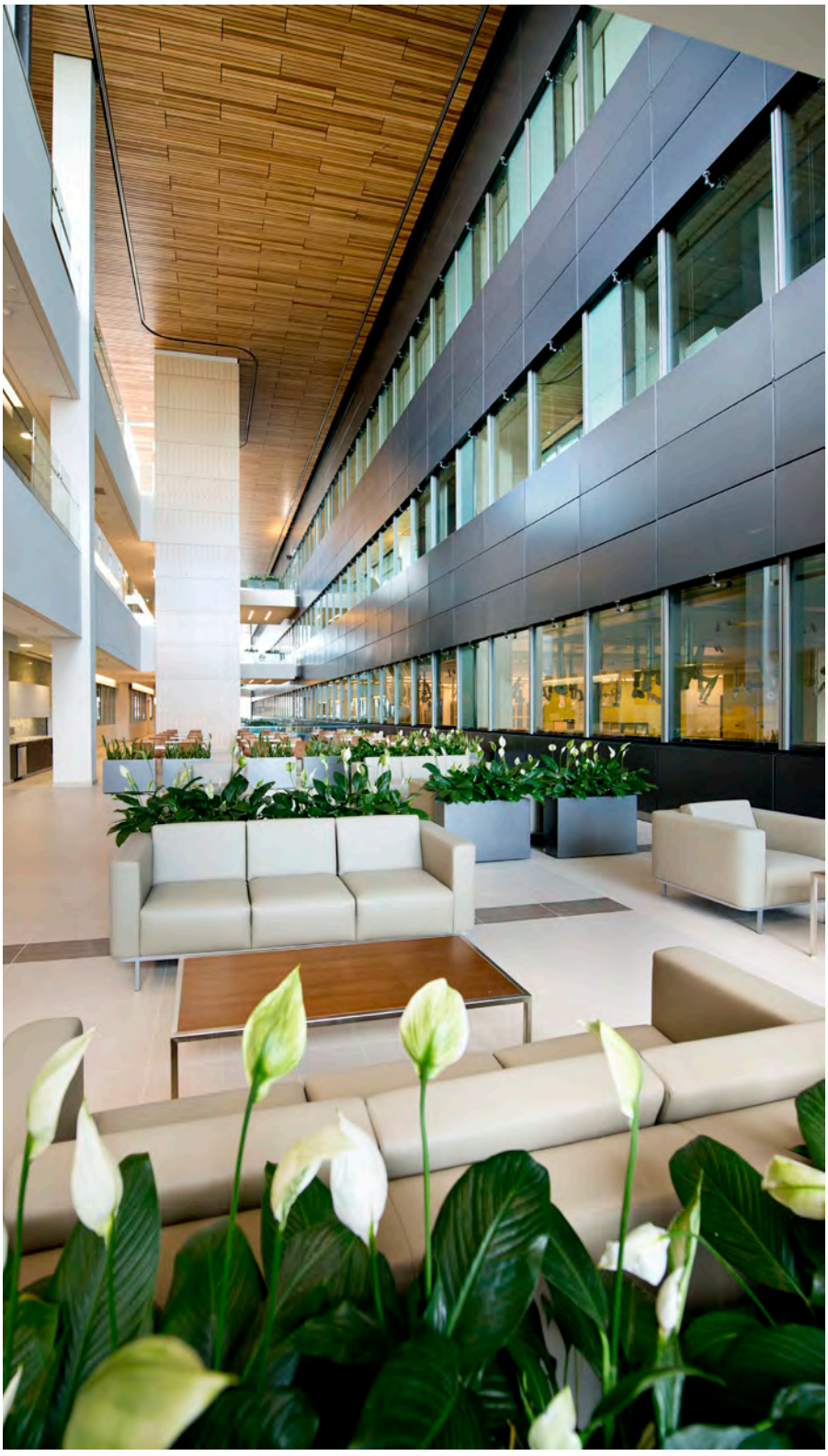
Forensic Pathology Units

Forensic Pathology Units are located in university teaching hospitals in Hamilton, Kingston, London, Ottawa and Sudbury. These units provide expertise in forensic pathology for approximately 2,300 routine and complex autopsies annually, including homicides and pediatric cases. The Ministry of Community Safety and Correctional Services, through the OFPS, provides transfer payment funding to these units.

Complex forensic autopsies are performed at one of the Forensic Pathology Units 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 33 community hospitals contribute to the OFPS by conducting routine medicolegal autopsies in their facilities on a fee-for-service basis.



Our Partners and Working Relationships

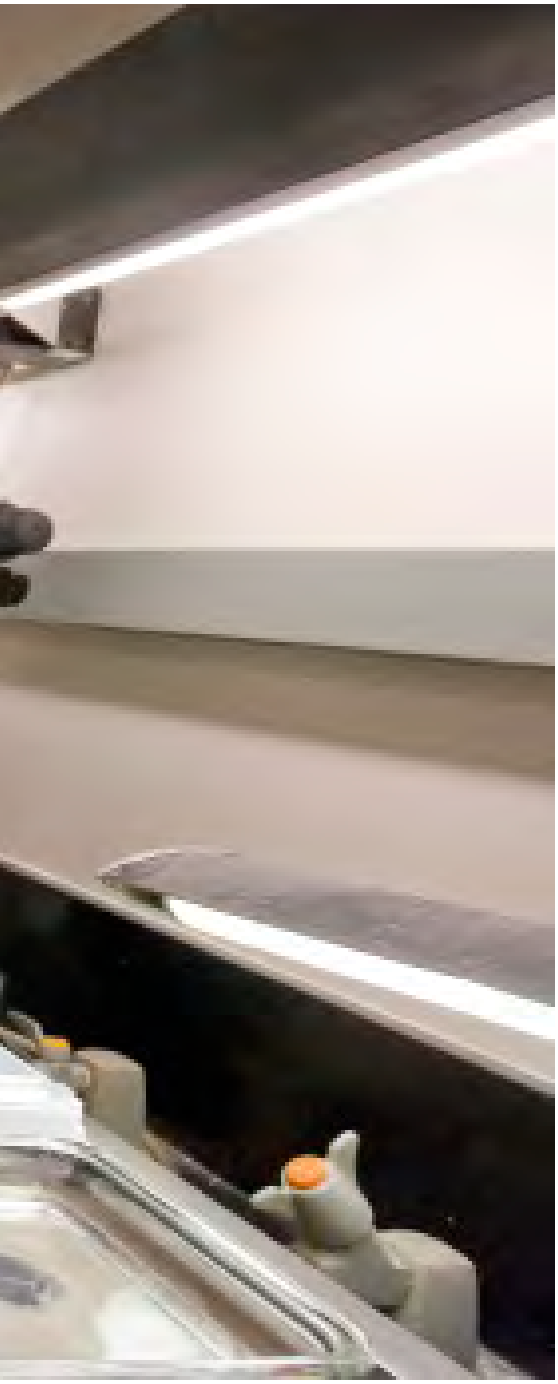
Our major partners include the OCC, municipal and provincial police agencies, the Ontario Fire Marshal, the Special Investigations Unit, the Centre of Forensic Sciences, the criminal justice system and Ontario families.

The OFPS also collaborates with universities on research, education and training. Furthermore, the OFPS provides services to organizations outside Ontario such as the federal Department of National Defence.

Our Services

The OFPS provides a range of services in support of the death investigation and justice 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. In some cases, photographs, video recordings and other imaging techniques replace the scene visit.

3. Autopsies

Pathologists conduct autopsies and observe, document and interpret findings to support the determination of cause of death. There are five steps to a medicolegal autopsy:

- review of case history, scene and circumstances
- external examination, including documentation by photography
- internal examination by dissection, including documentation by photography as indicated
- ancillary tests: this may include radiology, histology, cardiovascular, neuropathology, anthropology and odontology consultations, toxicology, metabolic screening and DNA testing
- opinion and report writing

4. Forensic pathology consultations and expert opinions

Forensic pathologists:

- participate in case conferences with other death investigation partners
- provide consultations and expert opinions on complicated and "cold" cases from Ontario and other jurisdictions. These requests may come from police agencies, crown prosecutors or defence attorneys
- provide occasional consultations and expert opinions on injuries on living individuals to assist with investigations

5. Testimony in trials and other hearings

Forensic pathologists 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 5 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, 2012 – July 26, 2013)

Administration and Operation of the OFPS

Start-up plan for the OFPS

In 2009, a five year plan for the OFPS (Our Plan 2010-2015) was released with two overarching strategic goals: to modernize forensic pathology services, and to focus on quality assurance, service sustainability and innovation. The OFPS aspires to maintain a leadership role in forensic pathology and advance service provision, education and research.

The ten strategic priorities that were identified in the start-up plan have been implemented or are well underway:

1. Pathologist Register
2. Pathology Information Management System
3. Quality management processes
4. Strengthening Forensic Pathology Units
5. Redeveloping services in geographic areas that are under-served by pathologists
6. Health and safety
7. Contracts or other agreements with major OFPS clients
8. Technical support services
9. Molecular autopsy as a core service
10. Training of future generations of Canadian forensic pathologists

The progress made in these areas is documented in this report.

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 regional forensic pathology units, the president of the Ontario Association of Pathologists and the Chief Coroner.

During the reporting period, the committee convened twice to discuss policy issues including:

- autopsy report turnaround
- external and partial autopsies
- organ and tissue donation
- child abuse notification to Children's Aid Societies
- multiple fatality planning
- organ retention and disposition

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 provides advice to the Chief Forensic Pathologist to advance the quality and independence of medicolegal autopsies.

During the reporting period, members of the committee met once to receive updates regarding the KPMG Review of

Ontario's Death Investigation System and the status of pathologist quality assurance data for the courts.

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), or
- non-suspicious pediatric cases (Category C)

As of July 26, 2013, a total of 137 registered pathologists are active, including 31 Category A pathologists permitted to conduct all types of autopsies. These 31 pathologists are recognized as having additional experience, training and/or certification in forensic pathology.

Category	# of Registered Pathologists
Category A	31
Category B	99
Category C	7

The Credentialing Subcommittee of the Forensic Pathology Advisory Committee reviews applications and provides advice to the Chief Forensic Pathologist regarding acceptance to the register.

The OFPS Register is available publicly through the Ministry's website at: http://www.mcscs.jus.gov.on.ca/english/Pathology/PathologistsRegistry/pathologists_registry.html

Performance management of registered pathologists related to quality of medicolegal autopsies is the responsibility of the Chief Forensic Pathologist. 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.

To ensure that it is consistent and fair, the OFPS is currently reviewing its approach to performance management of pathologists from medical and legal perspectives, including the threshold for reporting to the College.

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.

The Practice Manual includes the Code of Ethics, practice guidelines for medicolegal autopsies, and explanations of the peer review system and the Register. Together, these documents provide the professional and policy foundation for the OFPS. The practice guidelines are currently being reviewed and updated.

The Code of Ethics was adapted from the Forensic Pathology Section of the Canadian Association of Pathologists.

The OFPS and OCC have released memoranda which address a range of operational and administrative matters to augment this policy framework.

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 postmortem examination 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 collected information is used to evaluate resources, as well as statistics about performance and quality. PIMS, in conjunction with the postmortem examination record, facilitates accountability, and the oversight of autopsies by the Chief Forensic Pathologist.

To maximize performance, quality and service integration, the OFPS and OCC are developing an electronic case management system, called the Death Investigation System Technology. The new system, to be implemented in 2014, will record information from death investigations beginning with notification of the coroner and ending with case closure, and will unify and streamline existing documentation and administrative procedures.

Caseload Statistics

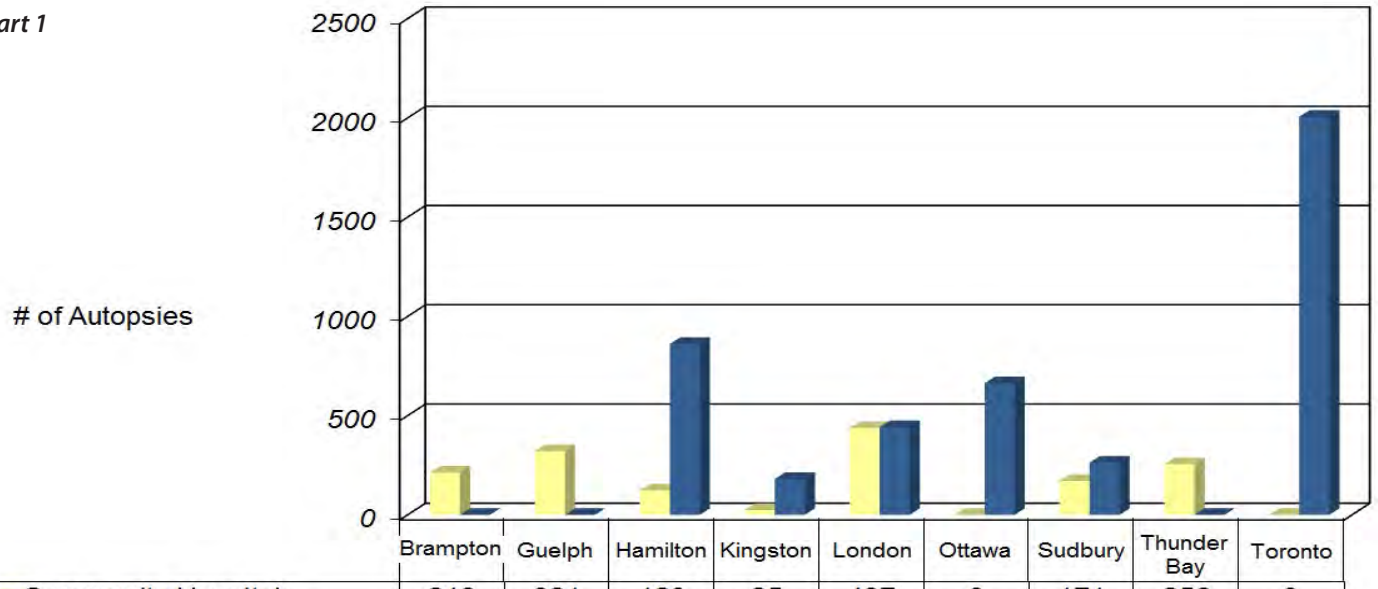
Caseload statistics are derived from postmortem examination records submitted during the reporting period.

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.

Some non-suspicious (medical type) autopsies of children are performed at pediatric sites. Only routine autopsies are conducted in community hospitals. Seventy-two percent (72%) of all autopsies were performed in Forensic Pathology Units and 28% in community hospitals. Of routine cases, about half were performed in community hospitals.

Chart 1 shows the distribution of autopsies captured in the system by OCC investigative regions.

Chart 1



	Brampton	Guelph	Hamilton	Kingston	London	Ottawa	Sudbury	Thunder Bay	Toronto
Community Hospitals	213	321	123	25	437	0	171	256	0
FPUs and Pediatric/Perinatal Sites	0	0	861	181	442	663	263	1	2006

The distribution of autopsies performed in Forensic Pathology Units and pediatric/perinatal sites is shown in ***Chart 2***.

Chart 2

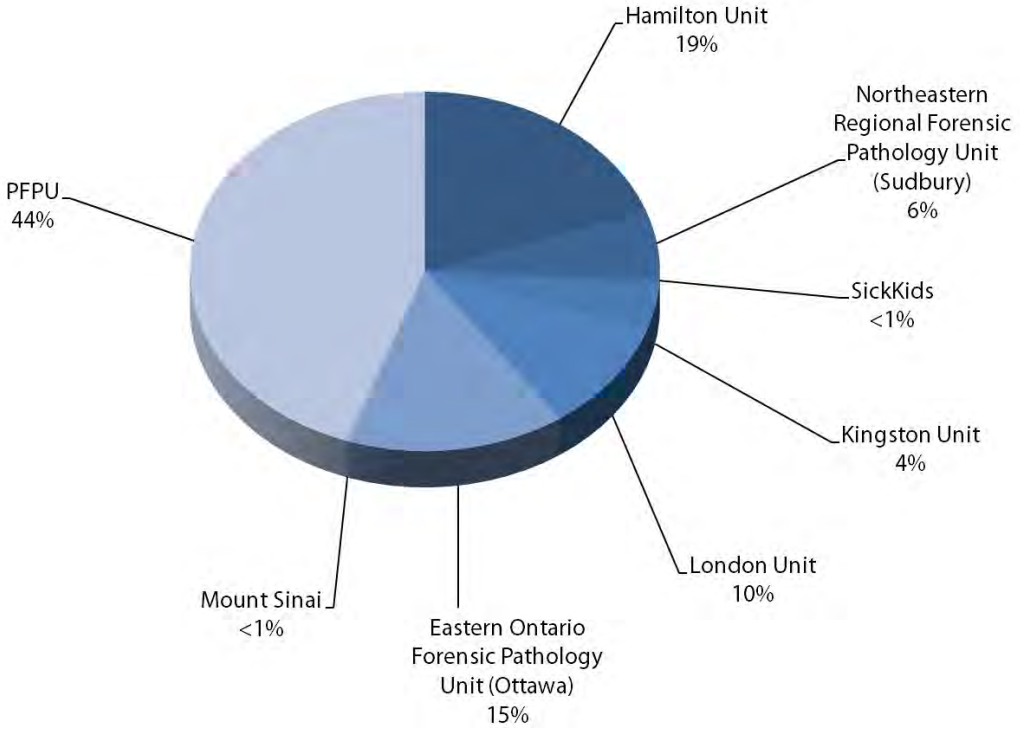
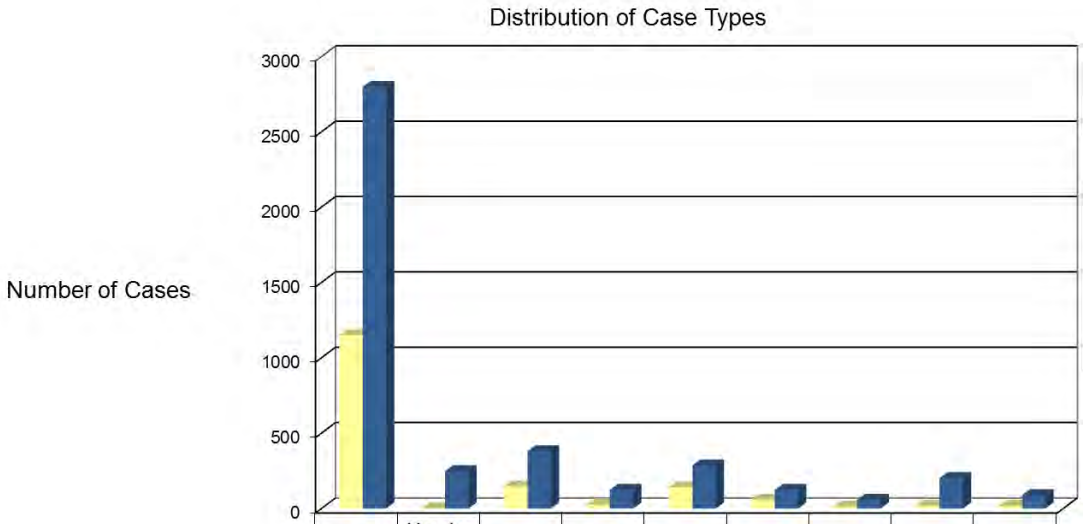


Chart 3 provides a breakdown of autopsies by case type as entered in PIMS. The category "sudden" includes non-homicidal gunshot wounds, drug overdoses and others not specified in the available categories.

Chart 3

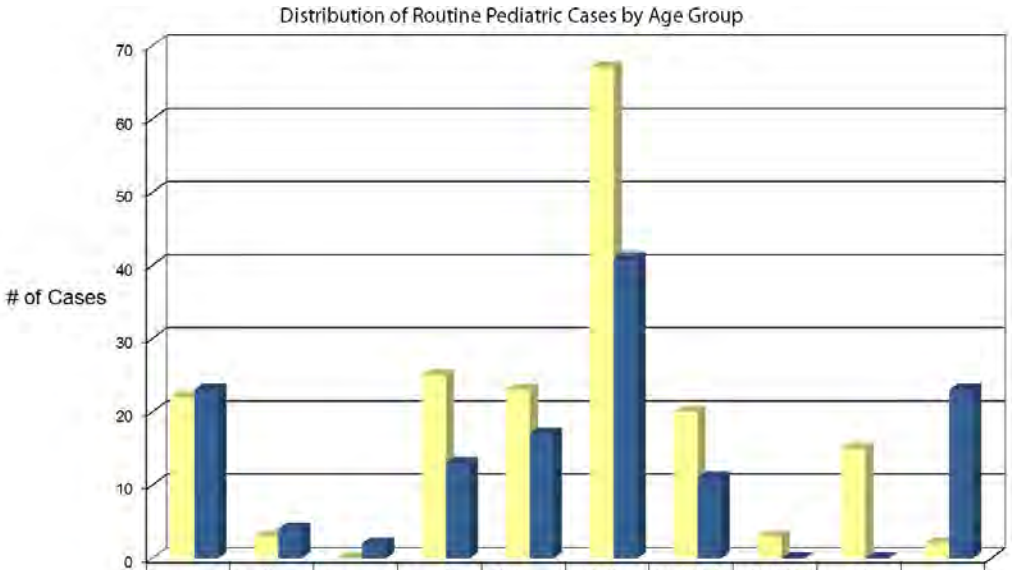


	Sudden	Homic-ide/ Susp.	Collision	Fall	Hanging	Water	Fire	External	Decomp.
Community Hospital	1149	0	146	27	140	57	11	18	17
FPUs and Pediatric/Perinatal Sites	2797	247	379	123	285	123	57	201	88

In some cases, after discussion between a forensic pathologist and a Regional Supervising Coroner and where sufficient information can be obtained from a limited examination, the decision is made to limit an autopsy to an external examination. There were 201 such cases performed in Forensic Pathology Units and 18 in community hospitals.

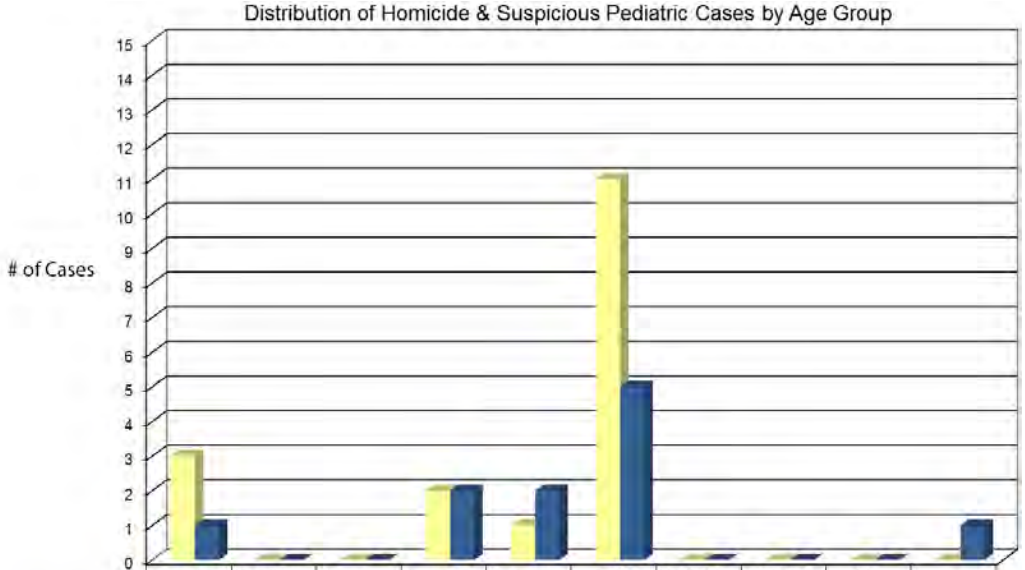
Charts 4 and 5 show the distribution of pediatric cases by age group (under age five, and ages five to 17) for routine cases and suspicious/homicide cases.

Chart 4



	Hamilton	Sudbury	Kingston	London	Ottawa	PFPU	SickKids	CHEO	Mt. Sinai	Hospitals
<5 years	22	3	0	25	23	67	20	3	15	2
5-17 years	23	4	2	13	17	41	11	0	0	23

Chart 5



	Hamilton	Sudbury	Kingston	London	Ottawa	PFPU	SickKids	CHEO	Mt. Sinai	Hospitals
<5 years	3	0	0	2	1	11	0	0	0	0
5-17 years	1	0	0	2	2	5	0	0	0	1

Quality Management

The OFPS has a robust quality assurance program comprised of the following:

- Pathologist Register
- practice guidelines including standardized reporting templates and forms
- collection of standardized case information through the postmortem examination record
- peer review of all autopsy reports on homicide, criminally suspicious, pediatric (deaths under 5) and Special Investigation Unit cases 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

Peer Review of Autopsy Reports for Homicide, Criminally Suspicious, Pediatric and SIU Cases

257 peer reviews were performed, averaging about 9 per forensic pathologist. The average turnaround time for peer reviews was 6 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. 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
- all 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, the target outcome and overall performance for Forensic Pathology Unit and community hospital pathologists.

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.

Table 1

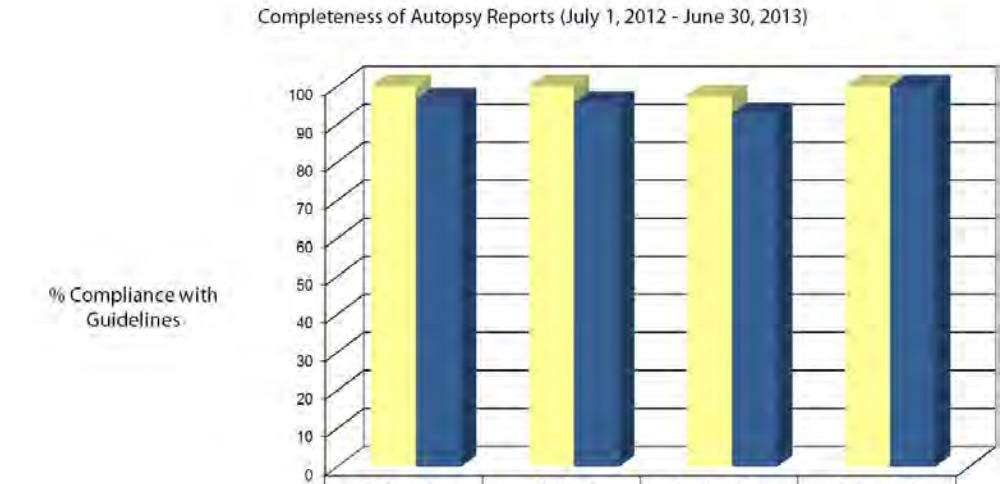
Key Performance Indicators for Autopsy Reports	Target	Results	
Submission Compliance (PIMS)	100%	99%	●
Completeness	95%	98%	●
Consistency	95%	98%	●
Turnaround Time (Routine)	90 days	Average=97 days	●
Turnaround Time (Suspicious/Homicide)	90 days	*Average=158 days	●
Reports with Significant Issues	<2%	1.8%	●
Critical Incidents	0	0	●

Green: good compliance
Yellow: approaching compliance
Red: poor compliance

*Turnaround time may be influenced by the availability of ancillary testing

Chart 6 illustrates completeness of autopsy reports in accordance with practice guidelines.

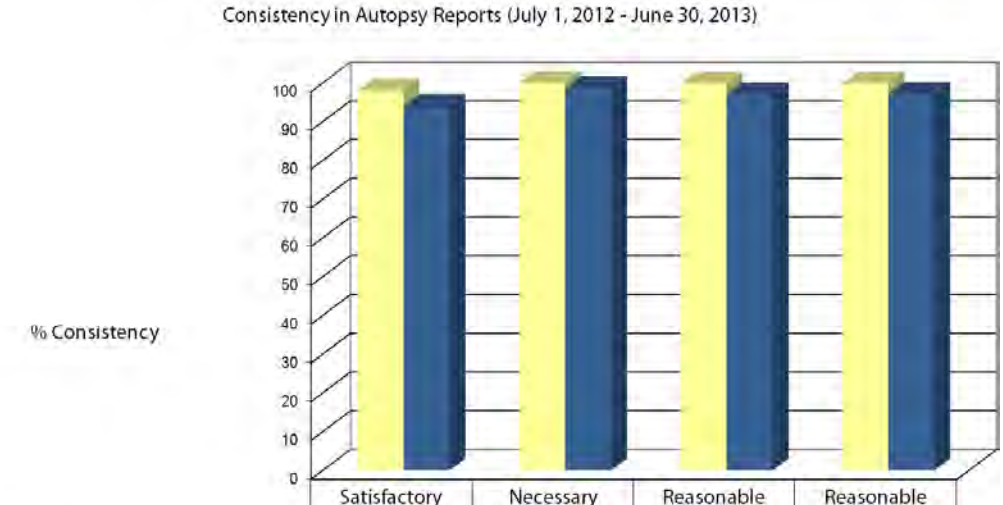
Chart 6



	Template Used	History Provided	Summary/ Opinion Provided	Cause of Death Provided
FPUs and Pediatric/Perinatal Sites	100	100	97.5	100
Community Hospitals	96.57	95.62	92.84	100

Chart 7 illustrates consistency of the content and opinion of autopsy reports as assessed by the reviewing pathologist.

Chart 7



	Satisfactory Descriptions	Necessary Ancillary Tests	Reasonable Conclusions	Reasonable Cause of Death
FPU and Pediatric/Perinatal Sites	98	100	99.75	99.75
Community Hospitals	94	98.6	97.06	97.19

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:

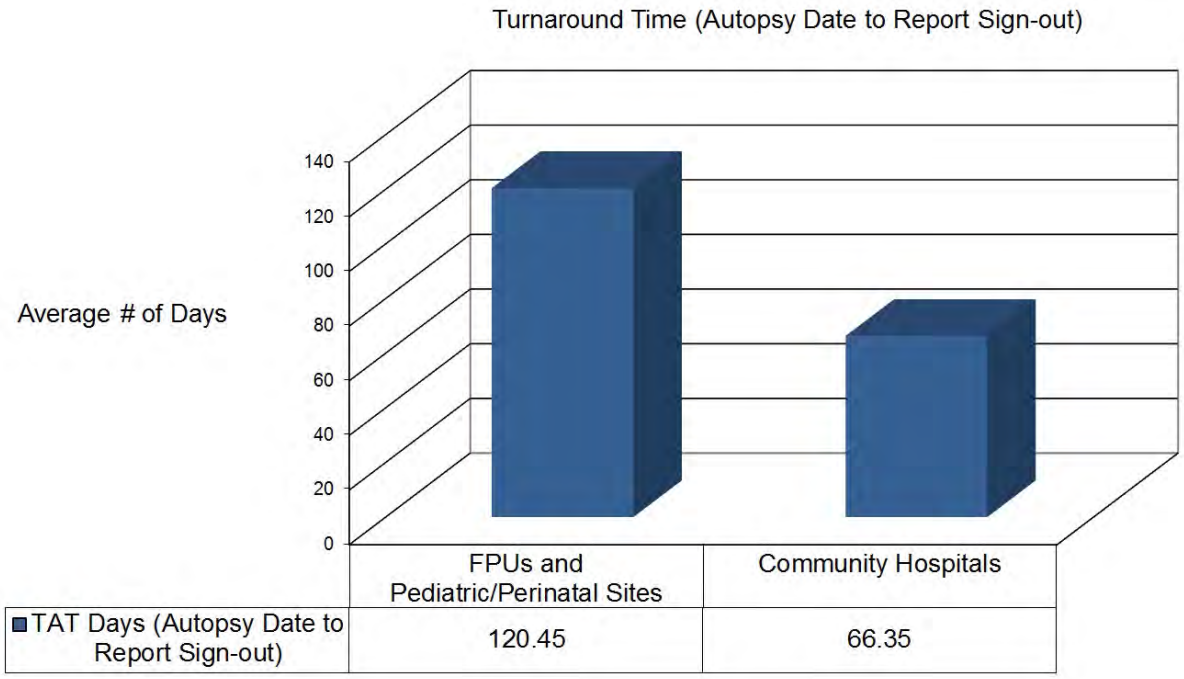
- ninety percent (90%) of autopsy reports are to be completed within 90 days of the day of the postmortem examination
- cases involving homicides, pediatric deaths, deaths in custody and cases in which the coroner has requested that the report be prioritized (due to requests from family or other parties) 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) for delay in those cases

Chart 8 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.

Significant Issues

If the reviewing forensic pathologist detects a significant issue during the technical review, feedback is provided to the case pathologist. The percentage of significant issues detected in routine case reports from Forensic Pathology Unit pathologists and community hospital pathologists was 1.8%.

Chart 8



Clinical Forensic Medicine

At present, qualified expert testimony by forensic specialists is usually available only in cases of violent death. However, cases of serious assault with a surviving victim can benefit from the review and interpretation of injuries by a forensic expert. This expert opinion can be useful to the criminal justice system. In the past year, PFPU forensic pathologists have consulted on a few cases through a review of 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, and as consultants to forensic pathologists. Forensic anthropology consultation was required in 27 cases during the reporting period. Forensic anthropologists also contributed to:

- missing persons investigations by working with partners to add information to databases and by building profiles of unidentified remains
- planning for multiple fatality events
- identification of found remains as non-human, including bones, by examining digital photographs or the remains themselves

One full-time forensic anthropologist works in the OFPS along with several fee-for-service consultants.

Other Professional Consultants

The OFPS relies on the expert contributions of other professionals, including cardiovascular pathologists, neuropathologists, forensic odontologists, radiologists and a forensic entomologist.

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 through laboratories at community hospitals and on-site at the Forensic Pathology Units. At the Provincial Forensic Pathology Unit, two full-time histotechnologists are employed to process approximately 1,600 tissue specimens each month.

Toxicology

Toxicological analysis of postmortem samples is performed by scientists at the Centre of Forensic Sciences (CFS). In many of their cases, pathologists rely on the results and the interpretive notes provided by toxicologists in coming to an opinion about the cause of death.

Collaborative meetings between a toxicologist, a Regional Supervising Coroner and a forensic pathologist are held several times a week at the headquarters of OCC and OFPS to decide whether toxicology testing requested by pathologists across the province is required in specific cases.

During the reporting period, toxicological analysis was requested in 3,290 medicolegal investigations.

The average time to completion of the report by the CFS was 35 days: 37% were completed within 30 days, 95% within 60 days, and 100% within 90 days.

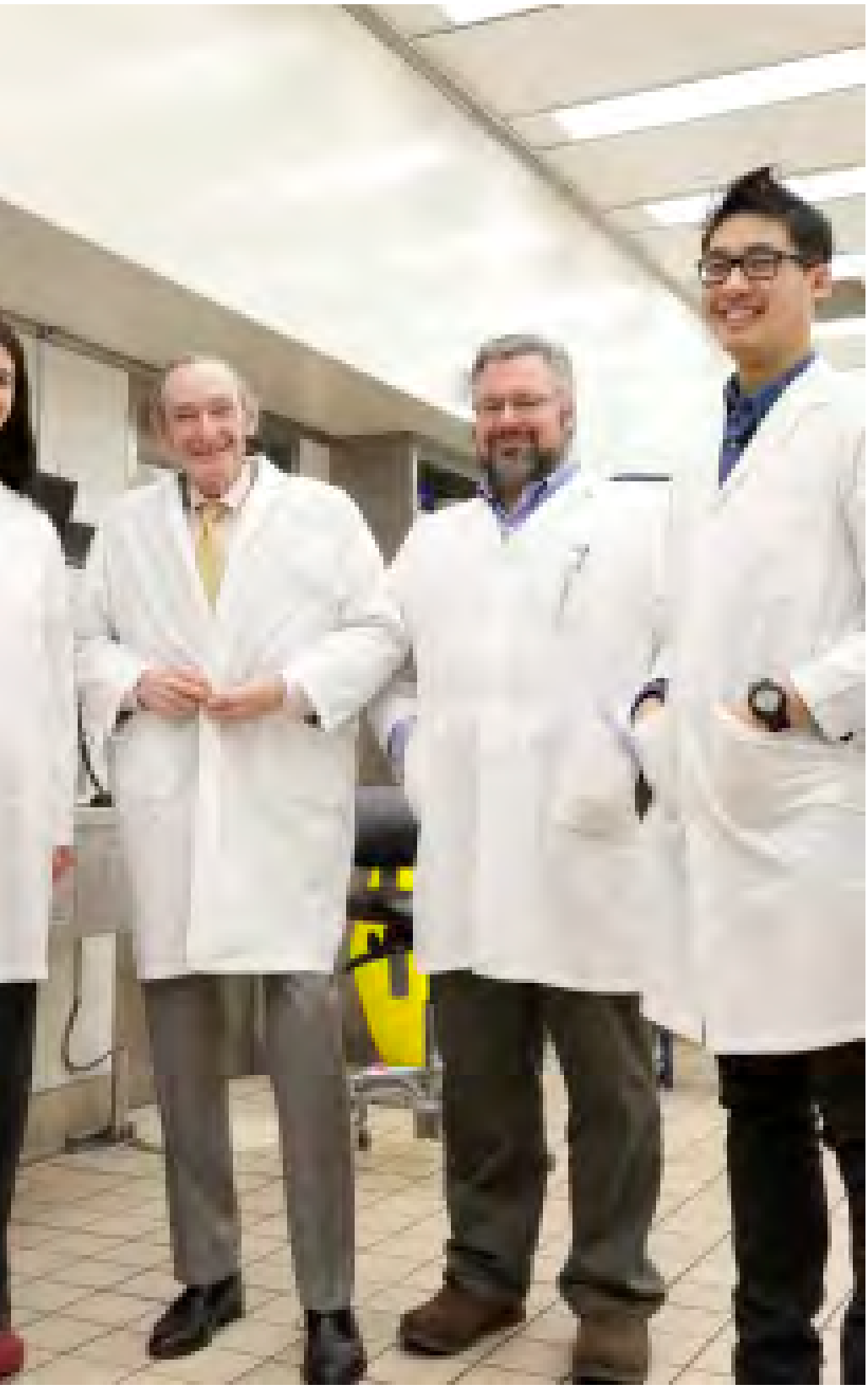
Organ Retention

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 in an attempt to spare them further grief. Now, 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 have reached out to those who lost a family member in Ontario before June 14, 2010, resulting in a coroner's investigation and autopsy.

Starting in June 2012, the Chief Forensic Pathologist and Chief Coroner have issued a series of public notices in newspapers across the country inviting immediate family members and personal representatives to contact the OFPS and the OCC to find out if an organ was retained in their loved one's case. In cases where an organ was kept, affected families and personal representatives can request that the organ be sent to a funeral home for cremation or burial, at the expense of the OFPS and the OCC.

The OFPS and OCC received many inquiries from families that resulted



in investigations into possible organ retention.

As a response to feedback from families, further amendments to Regulation 180 were publicly announced in June 2013 that provide for a longer retention period and central storage of organs retained before June 14, 2010. This will give families more time to decide whether they wish to inquire about a specific case and, in cases where an organ was retained after autopsy and remains in storage, to consider their options regarding disposition of that organ.

Molecular Forensic Pathology

Forensic pathologists sometimes encounter cases of sudden arrhythmic death in young people with structurally normal hearts. Advances in clinical genetics have shown that certain gene mutations are associated with these arrhythmic disorders. Detection of these mutations and diagnosis of the associated arrhythmias allows for screening, diagnosis and life-saving intervention in surviving family members such as siblings or children, who may share the genetic mutation.

Molecular autopsy laboratories at the Kingston General Hospital and at the Provincial Forensic Pathology Unit in Toronto collaborate to diagnose genetic conditions with a goal of preventing premature deaths.

Currently, the Molecular Autopsy Laboratory in Toronto has the capacity to receive tissue from appropriate cases and isolate DNA, which can then be used for genetic screening. In the future, the lab will perform in-house genetic sequencing to detect mutations that are responsible for a wide range of diseases. While the OFPS's initial focus has been on disorders of heart function, other diseases that run in families, such as blood clotting disorders, may also be diagnosed.

OFPS-Based Education

Annual Education Course for Coroners and Pathologists

This two-and-a-half day course is conducted 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.

Last year's course was held from November 22 to 24 and was attended by 38 registered pathologists.

The topics covered included:

- pediatric death investigations
- complex and difficult manners of death
- autopsy demonstration
- public engagement and public safety

Centre for Forensic Science and Medicine (CFSM) at the University of Toronto

The Centre for Forensic Science and Medicine (CFSM) at the University of Toronto 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.

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 university's postgraduate residency and fellowship training program in forensic pathology, the Faculties of Medicine and Law, and the Forensic Sciences Program.

Seminar Series: Current Controversies in Forensic Science & Medicine: Toward Resolution in the 21st Century

With funding support from the Ministry, this monthly series brings national and international experts to University of Toronto to discuss controversies in forensics. The seminars are attended by academics, those working in forensic disciplines, legal professionals and law enforcement practitioners. These seminars are also broadcast live over the Internet and are available for viewing at http://www.forensics.utoronto.ca.

In the last year, the following topics were covered:

- Bloodstain Pattern Analysis – A Critical Review, Pat Laturnus, Independent Law Enforcement Professional, Ottawa
- Forensic Science is History: A Philosophical View of the Science, Max Houck, Director at District of Columbia Consolidated Forensic Laboratories, Washington, D.C.
- New Drugs of Abuse – New Challenges, Christopher Milroy MBChB MD LLB FRCPath FFFLM FRCPC DMJ, University of Ottawa
- The Living Victim: More than a Crime Scene, Sheila Macdonald, Provincial Coordinator, Ontario Network of Sexual Assault/Domestic Violence Care and Treatment Centres, Toronto
- Biomechanics of Pediatric Head Injury, Chris Van Ee, PhD, PE, Principal Mechanical and Biomedical Engineering, Design Research Engineering, Adjunct Assistant Professor, Wayne State University, Department Biomedical Engineering, Detroit, MI
- Ethics, Equity and Justice in Disaster Victim Identification Operations, Jay D. Aronson, PhD, Associate Professor of Science, Technology, and Society, Department of History, Carnegie Mellon University, Pittsburgh, PA
- The Future of Forensic Entomology, Sherah VanLaerhoven, MPM, PhD, BCE, Diplomate-American Board of Forensic Entomology, Academic Chair, Forensic Science Programs, Associate Professor, Biology, University of Windsor

Dr. Frederick Jaffe Memorial Lectureship

The CFSM created a special lecture series in honour 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 first lecture was given on October 1, 2012 by Dr. Morris Tidball-Binz, the Forensic Coordinator of the Assistance Division of the International Committee of the Red Cross. He spoke on The Emergence of Humanitarian Forensic Science: Challenges and Opportunities for Practitioners.

Hart House Report

In May 2013, the CFSM released a report on the state of forensic science in Canada. This report summarizes the themes, conclusions and recommendations of a multidisciplinary forum on forensic science in Canada that was held the previous year at the University of Toronto. The experts who contributed to the discussion represented nine core forensic disciplines: Forensic Pathology, Forensic Anthropology, Forensic Odontology, Forensic Nursing, Forensic Entomology, Forensic Physical Sciences, Forensic Toxicology, Forensic Biology and Forensic Psychiatry.

The "Hart House Report", which can be found on the website of the CFSM:

- describes the current state of the nine core forensic disciplines in Canada
- summarizes the major challenges and opportunities facing forensic science in Canada
- recommends ways to strengthen and develop forensic science in Canada, including federal granting, research, academic training and credentialing, professional standards of practice and quality management

Advancements in the Modern Autopsy Course

In conjunction with Continuing Education and Professional Development, Faculty of Medicine, University of Toronto, the CFSM hosted a course on Advancements in the Modern Autopsy on May 23, 2013 at the U of T. Participants included community hospital pathologists, pathology residents, as well as coroners and police officers.

Family Room at the Forensic Services and Coroner's Complex

Training New Forensic Pathologists

The PFPU, in partnership with the Forensic Pathology Residency Training Program at University of Toronto and with funding support from the Ministry of Health and Long-term Care, continues to have the only active training program in Canada leading to certification in forensic pathology by the Royal College of Physicians and Surgeons of Canada (RCPSC). Since 2008, nine pathologists have completed training, seven of whom are now working within the OFPS.

All postgraduate (residency) training programs must undergo regular accreditation by the Royal College. In 2013, all such programs at the University of Toronto underwent this re-accreditation process. The forensic pathology program was awarded full accreditation by the RCPSC. This achievement is a testament to the hard work and dedication of all the forensic pathologists working in Toronto, as well as considerable support from the forensic pathology community across Ontario. Our partnership with the University of Toronto and the Faculty of Medicine, particularly its Dean, Dr. Catharine Whiteside, is innovative, future-focused and represents the leading edge in death investigation.

Supporting the growth of forensic medicine in developing regions is a priority for the OFPS and CFSM. Since 2007, six international fellows have completed residency training in forensic pathology at the PFPU, representing Sri Lanka, Jamaica and Chile. In addition, the PFPU has hosted two pathology residents from the Caribbean for observerships.

In July 2013, three new residents began their training in forensic pathology in the U of T program.

Maggie Bellis MD, FRCPC received her B.Sc. from the University of Western Ontario and completed her medical training at the National University of Ireland, Cork, in 2006. During that time, Dr. Bellis was also employed by the Cork City Morgue, where she conducted and published research into the role of alcohol in sudden and unexpected deaths. Maggie completed her residency training in Anatomical Pathology at the University of Toronto and received her FRCPC in 2013.

Adriana Krizova MD, MSc, FRCPC obtained her Doctor of Medicine from Komensky University in Slovakia in 2000. She completed her Anatomical Pathology training at the University of Toronto and received her FRCPC in 2013. Dr. Krizova has done research in scleroderma, lupus and other autoimmune diseases; the role of HIV-tat protein expression in adverse drug reactions in HIV patients; and specimen quality in surgical pathology. Adriana has extensive teaching experience in pathology, pharmacology, neuroimaging and frozen sections.

Dr. W.R.A. Saminda Rajapaksha is from Sri Lanka, where he obtained his MBBS degree from the University of Ruhuna. Having selected the specialty of Forensic Medicine, Dr. Rajapaksha obtained a Diploma in Legal Medicine and Doctorate in Forensic Medicine from the Post Graduate Institute of Medicine, University of Colombo, Sri Lanka. He is interested in the international role of forensic pathologists in mass disasters.

Recruitment of Forensic Pathologists

The capacity of the OFPS has been enhanced through the recent addition of talented new recruits:

Dr. Anita Lal MD D-ABP FCAP joined as a staff Forensic Pathologist in the PFPU in January 2013. Dr. Lal obtained her medical degree (2005) at Ross University in the West Indies. She then completed her residency training in Anatomical and Clinical Pathology at Wayne State University in Detroit, Michigan, and a fellowship in Forensic Pathology at the Wayne County Medical Examiner's Office, also located in Detroit. Dr. Lal joined the Office of the Chief Medical Examiner in Calgary, Alberta as an Assistant Chief Medical Examiner in July 2011, with a cross-appointment as a Clinical Assistant Professor at the Faculty of Medicine, University of Calgary.

Ashwyn Rajagopalan MD FRCPC joined the Provincial Forensic Pathology Unit as a staff Forensic Pathologist in July 2013, after successfully completing the residency training program of the PFPU and the University of Toronto. Dr. Rajagopalan graduated from Queen's University in Kingston with a Doctor of Medicine in 2007. He completed his residency in Anatomical Pathology at McMaster University in May 2012, obtaining his FRCPC. Dr. Rajagopalan recently received certification from the Royal College in Forensic Pathology.

Angela Guenther MD FRCPC was hired as a staff Forensic Pathologist in the PFPU in July 2013, having successfully completed the residency training program jointly administered by the PFPU and the University of Toronto in June 2013. Dr. Guenther obtained her medical degree and a doctoral thesis (Dr. med.) from the University of Goettingen, Germany. She conducted research at the Universities of Dusseldorf, Calgary and Toronto and trained as a resident in Anatomical Pathology at the University of Toronto, obtaining her FRCPC in 2012. Dr. Guenther recently received certification from the Royal College in Forensic Pathology.

Allison Edgecombe MD FRCPC joined the Hamilton Forensic Pathology Unit as a staff Forensic Pathologist in August 2013. Dr. Edgecombe received her medical training at Memorial University of Newfoundland and the University of Ottawa, graduating in 2007. She completed residency in Anatomical Pathology in Ottawa in 2012, and then a fellowship in Forensic Pathology at the University of Texas Southwestern in Dallas in 2013.

Update on Forensic Pathology Units

Eastern Ontario Regional Forensic Pathology Unit (Ottawa)

The Eastern Ontario Forensic Pathology Unit has four full-time forensic pathologists who perform approximately 650 medicolegal autopsies for the OFPS annually, as well as autopsies for the Coroner for Nunavut. Forensic pathologists in Ottawa are also consulted on Canadian and international medicolegal cases.

All four forensic pathologists hold academic appointments at the University of Ottawa and teach in the Faculty of Law and to residents in Anatomical Pathology. An Anatomical Pathology resident from Ottawa will begin a fellowship in Forensic Pathology in Toronto in 2014.

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 Ontario Association of Pathologists, Canadian Association of Pathologists, the National Association of Medical Examiners (NAME) and the American Academy of Forensic Sciences
- other academic and professional activities, including:
    - Ontario Association of Pathologists
    - Deaths Under Five Committee of the Office of the Chief Coroner (Dr. Kepron)
    - Board of Directors of NAME (Dr. Milroy)
    - outreach teaching in the Caribbean (Dr. Walker)
    - guest editor for the September edition of Academic Forensic Pathology, the Official Journal of NAME (Dr. Milroy)
    - Examiner for the RCPSC (Drs. Milroy and Parai). Dr. Milroy will take over as Chair of the Examiners Committee in Forensic Pathology in 2014

In July 2013, Dr. Jacqueline Parai stepped down as Medical Director of the Unit and Dr. Christopher Milroy has assumed the role.

London Forensic Pathology Unit

The London Forensic Pathology Unit is based in the Department of Pathology at the London Health Sciences Centre and is affiliated with Western University. The number of medicolegal autopsies increased in 2012 from 370 to 439 cases due to the withdrawal of services previously provided by two community hospitals in southwestern Ontario.

The number of cases referred from outside the London area rose by 46 cases. Despite this increase, the current team of three forensic pathologists and eight pathologists continues to provide effective and timely service.

Dr. Edward Tweedie became the coordinator of the forensic course offered to fourth year medical and Bachelor of Medical Science students at Western University, replacing Dr. Michael Shkrum who had performed this role for 25 years.

Dr. Shkrum, Medical Director, received the Dr. M. E. Kirk Annual Teaching Award for Excellence in Resident Education in the Department of Pathology, Western University.

Hamilton Forensic Pathology Unit

The Hamilton Forensic Pathology Unit at the Hamilton Health Sciences Centre is affiliated with McMaster University. It continues to focus on service provision, recruitment, education of pathology residents and medical students, and research.

In 2012/13, approximately 845 medicolegal autopsies were performed for the region by four forensic pathologists and one pathologist.

The Hamilton Forensic Pathology Unit experienced staffing changes in 2013. Dr. Kathryn Urankar, a forensic pathologist from Australia, spent several months working in the unit before beginning a neuropathology fellowship at the University of California San Francisco. Dr. Allison Edgecombe joined the Hamilton Forensic Pathology Unit as a staff forensic pathologist in August. The Unit trained an international Fellow who has since returned to practice forensic pathology in Sri Lanka.

Northeastern Regional Forensic Pathology Unit (Sudbury)

The Northeastern Regional Forensic Pathology Unit of Health Sciences North in Sudbury is affiliated with Laurentian University and the Northern Ontario School of Medicine. In 2012, about 265 medicolegal autopsies were performed. In September 2013, Dr. Sharon Boone, a Board Certified and experienced forensic pathologist from British Columbia, started a locum for approximately one year.

Dr. Martin Queen, Medical Director, joined the Royal College of Physicians and Surgeons of Canada Examination Board in Forensic Pathology in 2012.

Dr. Michael D'Agostino, who relocated in 2012 to Sault Ste. Marie, continues to support medicolegal autopsy service provision to Northeastern Ontario.

Kingston Forensic Pathology Unit

The Kingston Forensic Pathology Unit at Kingston General Hospital is affiliated with Queen's University. In 2012, about 180 routine medicolegal autopsies were performed by 15 registered pathologists.

In July 2013, Dr. Kristopher Cunningham, a forensic and cardiovascular pathologist, became the new Medical Director of the Kingston Unit and the Kingston General Hospital autopsy service. Dr. Cunningham was previously the Medical Director of the Provincial Unit Forensic Pathology Unit in Toronto. With his move, autopsies of homicide and suspicious deaths are now being performed at the Kingston Unit. He continues to provide cardiovascular pathology consultations to support sudden cardiac death investigations across the province.

Kingston General Hospital continues to focus on molecular autopsy testing, with Dr. Cunningham in the role of coordinator for the OFPS molecular autopsy program.

New Technology

The OCC and OFPS are investing in a new information management system and related technologies.

Provincial Coroner Dispatch

The OCC and OFPS have successfully implemented a province-wide coroner dispatch service. Provincial dispatch is now the single point of contact to notify any coroner in Ontario of a death that may require investigation.

The computer-aided, centralized dispatch service, located at the headquarters of the OCC and OFPS, ensures that the right coroner is assigned to investigate each death while creating a digital record that captures case information in real time. The team of 12 dispatchers receives approximately 300 phone calls each day, resulting in coroners being dispatched to approximately 17,000 cases per year.

Acting Staff Sergeant Joanne Whitney of the Ontario Provincial Police became the temporary manager of the centralized dispatch service in August. A/S/Sgt. Whitney has been a serving member of the OPP for over 25 years. As the Acting Unit Commander of the Kenora Communications Centre and the Acting Operations Manager of the Orillia Provincial Communications Centre, she led and supervised civilian and uniform dispatch services. Earlier in her career, she was a Forensic Identification Officer.

Death Investigation System Technology

New Death Investigation System Technology will combine and significantly enhance the present Coroners Information and Pathology Information Management Systems. The new system will improve public safety through its ability to centrally track data that spans the entire death investigation. In addition, it will facilitate quality assurance, financial resource management and strategic planning.

Collaboration with the Victorian Institute of Forensic Medicine (VIFM) in Australia

The Victorian Institute of Forensic Medicine (VIFM) in Melbourne, Australia, operates under the auspices of the Department of Justice and as 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 Organisation and agencies of the United Nations.

The OFPS, the Provincial Forensic Pathology Unit 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.

Forensic Services and Coroner's Complex

In September 2013, the OFPS, the Office of the Chief Coroner and the Centre of Forensic Sciences relocated to their new headquarters, the Forensic Services and Coroner's Complex, at Keele St. and Wilson Ave. in northwestern Toronto.

This state-of-the-art facility is the largest of its kind in the world. It is approximately 50,000 square metres, and includes important features to support excellence in investigations, research and training. The complex ensures that Ontario has the modern infrastructure to keep pace with technological advances and support increasingly multifaceted investigations.

The new facility will modernize our service through innovative programs such as the molecular autopsy, postmortem imaging with CT and magnetic resonance, and postmortem recovery of tissues for transplantation, as well as enhanced continuing education and professional development opportunities.

Systemic Review of Ontario's Death Investigation System

On August 7, 2013, the Ontario Government announced the following changes to the death

investigation system:

1. Appointing forensic pathologists as coroners for cases of suspicious death or homicide. Under the new model, forensic pathologists will be responsible for death investigations in cases that may also involve the criminal justice system, ensuring families and police benefit from their forensic expertise throughout death investigations and in court.
2. Expanding the role of the Death Investigation Oversight Council by allowing the council to advise the Chief Coroner on whether to call discretionary inquests.
3. Exploring options that would allow the Chief Coroner the flexibility to assign a lawyer or judge to preside over inquests with complex legal issues.
4. Posting recommendations from inquests online, making them more accessible to the public.

These changes grew from advice from KPMG and the Death Investigation Oversight Council, in addition to consultation with interested stakeholders. Implementation of these changes is underway.

International Assistance

Ontario has a history of providing leadership and support to international Disaster Victim Identification missions. These missions are assembled following natural or human-caused disasters where help is needed in identifying victims. The OFPS has participated internationally with Interpol, the International Committee of the Red Cross, the Federal Bureau of Investigation and other experts from the forensic community.

Some nations do not have a robust system of forensic medicine, which can help to uphold human rights and justice. Dr. Michael Pollanen, in his roles as the Chief Forensic Pathologist and the Program Director of the Centre for Forensic Science and Medicine, has worked to build forensic medicine capacity and support

human rights investigations in such areas as the Middle East, South Asia, Africa and the Caribbean. Some of this work has involved United Nations agencies.

Professional Activities and Outreach

Registered pathologists in the OFPS 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, American Academy of Forensic Sciences and the International Association of Forensic Sciences.

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 in Canada.

This past year, OFPS pathologists lectured and delivered courses in Canada, the USA, the Caribbean, Mexico, Chile, Spain and Turkey. Their audiences included forensic pathologists and scientists, other medical practitioners, the judiciary, lawyers, police, advocacy groups, the Department of Defence 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 have teaching responsibilities for undergraduate and graduate forensic science students, medical students, dentists, medical artists, law students, and pathology and forensic pathology residents.

Research

Forensic pathologists contribute to and support research aimed at understanding causes of sudden death and improving public safety.

Dr. Michael 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, Western University (funded by Transport Canada 2010-2013)
- Co-Principal Investigator with Dr. A. Howard, Fatal Child Injuries in Real World Crashes. Network Centres of Excellence, Automobile of the 21st Century (AUTO21)
- Co-Principal Investigator with Dr. D. Fraser, A Multidisciplinary Team Approach to Prevent Motor Vehicle Crash-Related Injuries in Southwestern Ontario. AMOSO (Academic Medical Organization of Southwestern Ontario) grant

Drs. Elena Tugaleva and Mike Shkrum are co-supervisors of a M.Sc. graduate student researching organ weights and measures in infants aged one month to one year investigated by the Office of the Chief Coroner.

Forensic pathologists at the Hamilton Forensic Pathology Unit are involved in the following research:

- Teen suicide study with EGALE (Equality For Gays and Lesbians Everywhere) and the Office of the Chief Coroner
- Comparison of deaths resulting from prescription or illicit drugs
- Review of diffuse axonal injury cases over a five year period
- Procalcitonin and β-hydroxybutyrate in vitreous humour

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Goals for Next Year

The OFPS plans to:

- Implement forensic pathologist – coroners in cases of homicides and criminally suspicious deaths
- Develop a strategy for postmortem recovery of tissues for transplantation
- Advance:
  - molecular autopsy
  - postmortem imaging at the FSCC
  - continuing education and professional development

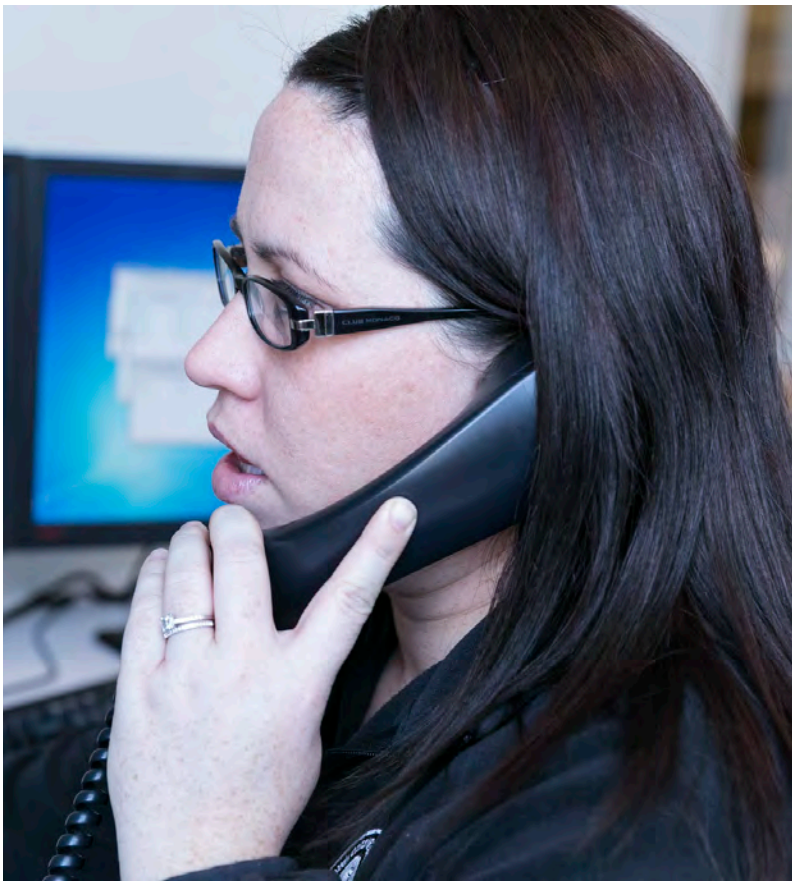
Our People

OFPS Directorate

Michael POLLANEN	Chief Forensic Pathologist
Toby ROSE	Deputy Chief Forensic Pathologist
Effie WALDIE	Strategic Advisor
Natasha DESJARDINS	Administrative Coordinator
Rose PERRI	Medical Transcriptionist
Lori BRADSHAW	Medical Transcriptionist
Cathy ARABANIAN	Medical Transcriptionist
Judith DE SOUZA	Medical Transcriptionist
Wendy BENNETT	Medical Transcriptionist

Operational Services

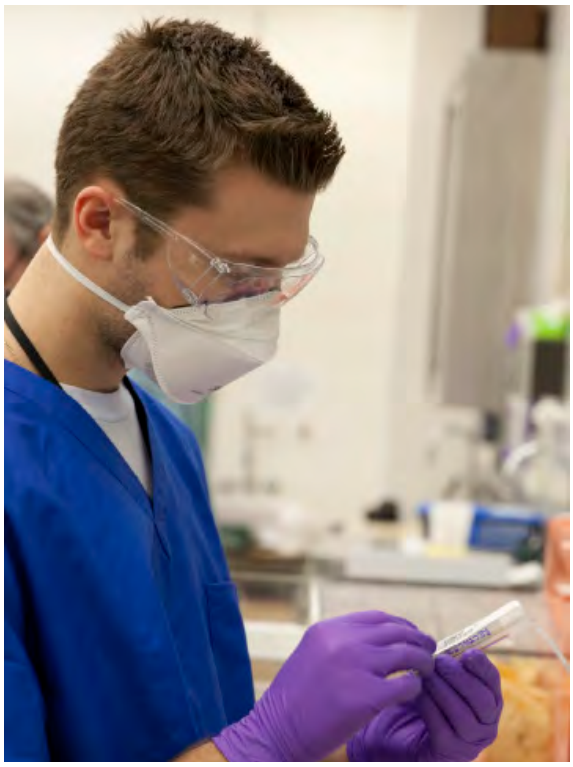
Melanie FRASER	Director, Operational Services
Saira SEQUEIRA	Executive Assistant to the Director
Robert MacVICAR	Manager, Quality and Information Management

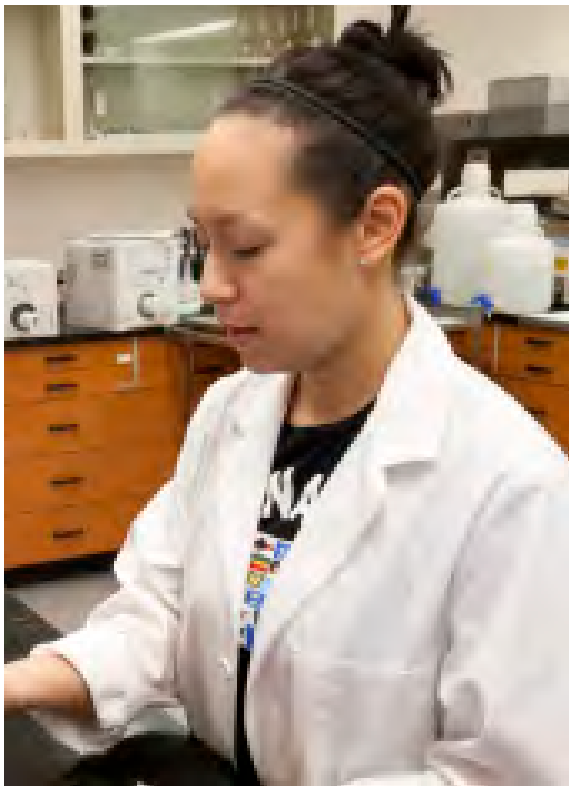


Cathy DOEHLER	Quality Management Lead
Bonita ANDERS	Quality Analyst
Amanda ANTENUCCI	Quality Analyst
Lisa PERRI	Quality Analyst
Ramona BHAGWANDIN	Quality and Information Management Analyst
Monique HOLZ	DIST Project Manager
Nadia Uddin	DIST Project Manager
Andrew STEPHEN	Information Management Lead
Scott PIMENTEL	Systems Officer
Burcu SEMIZ	Quality and Information Management Administrative Assistant
Margaret PICHECA	Quality and Information Management Administrative Assistant
Eketerina OSTAPETS	Quality and Information Management Administrative Assistant
Kendra MOFFATT	Manager, Business Services
Janice MOKANSKI	Education Coordinator
Liz SIYDOCK	Family Liaison Coordinator
Vicki STAMML	Administrative Services Coordinator
Laura DONALDSON	Manager, Business Planning & Controllership
Anna TORRIANO	Financial Officer
Cheryl MAHYR	Issues Manager

Provincial Forensic Pathology Unit

Jayantha HERATH	Medical Director and Forensic Pathologist
Noel MCAULIFFE	Forensic Pathologist
Michael PICKUP	Forensic Pathologist
Ashwyn RAJAGOPALAN	Forensic Pathologist
Angela GUENTHER	Forensic Pathologist
Anita LAL	Forensic Pathologist
Maggie BELLIS	Forensic Pathology Fellow
Adriana KRIZOVA	Forensic Pathology Fellow
Saminda RAJAPAKSHA	Forensic Pathology Fellow
Jeffrey ARNOLD	Manager, Forensic Services
Joanne WHITNEY	Manager, Provincial Dispatch
Amber GALLANT	Assistant Manager, Forensic Services
Kathy GRUSPIER	Forensic Anthropologist
Renee KOSALKA	Forensic Anthropologist
Greg OLSON	Forensic Anthropologist
Bob WOOD	Forensic Odontologist
Murray PEARSON	Forensic Odontologist
Sherah VANLAERHOVEN	Forensic Entomologist
Miguel ARIAS	Autopsy Services Coordinator
Maureen CURRIE	Pathologist Assistant
Jessie COTTON	Pathologist Assistant
Yolanda NERKOWSKI	Pathologist Assistant
Tiffany MONK	Pathologist Assistant
Taylor GARDNER	Pathologist Assistant
Terry IRVINE	Pathologist Assistant
Solange MALHOTRA	Pathologist Assistant
Stephanie SANTANGELO	Pathologist Assistant
Irina SHIPILOVA	Pathologist Assistant
Sonia SANT	Pathologist Assistant
David LARRAGUIBEL	Forensic Photography Technologist
Michelle WATSON	Forensic Services Technologist
Neil ROSEN	Forensic Services Technologist
Sonja STADLER	Forensic Services Technologist
Alicia BUETTER	Forensic Services Technologist
Zhanna KONOVALOVA	Forensic Services Technologist
Amber DRAKE	Project and Research Analyst
Jennifer CLEMENT	Imaging Technologist
Monique BARBEAU	Imaging Technologist
Christiane GUILLEMETTE	Histotechnologist
Amanda FONG	Histotechnologist
Margaret PICHECA	Administrative Assistant
Lucy COSTA	Administrative Assistant
Renato TANEL	Dispatcher/Morgue Attendant
Jason CAMPITELLI	Dispatcher/Morgue Attendant
Debra WELLS	Dispatcher/Morgue Attendant
Tanya HATTON	Dispatcher/Morgue Attendant
David TODD	Dispatcher/Morgue Attendant
Stephenie SKIRROW	Dispatcher/Morgue Attendant
Noelle KELLY	Dispatcher/Morgue Attendant





Lesley-Anne WESTBY	Dispatcher/Morgue Attendant
Dan FRANEY	Dispatcher/Morgue Attendant
Julie CROWE	Dispatcher/Morgue Attendant
Ron LITTLEJOHN	Dispatcher/Morgue Attendant
Tara DADGOSTARI	Dispatcher/Morgue Attendant
Jessica NAUMOVSKI	Dispatcher/Morgue Attendant

Hamilton Forensic Pathology Unit

John FERNANDES	Medical Director and Forensic Pathologist
Chitra RAO	Forensic Pathologist
Elena BULAKHTINA	Forensic Pathologist
Allison EDGECOMBE	Forensic Pathologist
Vidhya NAIR	Cardiovascular Pathologist
John PROVIAS	Neuropathologist
Boleslaw LACH	Neuropathologist
Tracy ROGERS	Forensic Anthropologist
Ross BARLOW	Forensic Odontologist
Danny POGODA	Forensic Odontologist
Murray PEARSON	Forensic Odontologist
John THOMPSON	Forensic Odontologist

London Forensic Pathology Unit

Michael SHKRUM	Medical Director and Forensic Pathologist
Edward TWEEDIE	Forensic Pathologist
Elena TUGALEVA	Forensic Pathologist
Bertha GARCIA	Pathologist
Nancy CHAN	Pathologist
Manal GABRIL	Pathologist
Aaron HAIG	Pathologist
Christopher ARMSTRONG	Pathologist
Christopher HOWLETT	Pathologist
Jeremy PARFITT	Pathologist
Joanna WALSH	Pathologist
David RAMSAY	Neuropathologist
Robert HAMMOND	Neuropathologist
Lee-Cyn ANG	Neuropathologist
Mike SPENCE	Forensic Anthropologist
Stanley KOGON	Forensic Odontologist
Mark DARLING	Forensic Odontologist
Thomas MARA	Forensic Odontologist

Eastern Ontario Forensic Pathology Unit

Christopher MILROY	Medical Director and Forensic Pathologist
Jacqueline PARAI	Forensic Pathologist
Alfredo WALKER	Forensic Pathologist
Charis KEPRON	Forensic Pathologist
John VEINOT	Cardiac Pathologist

Eric BELANGER	Cardiac Pathologist
Bruce JAMISON	Cardiac Pathologist
Chi LAI Cardiac	Pathologist
John WOULFE	Neuropathologist
David CAMELLATO	Forensic Odontologist

Ottawa Children's Hospital of Eastern Ontario

Jean MICHAUD	Neuropathologist
David GRYNSPAN	Pediatric Pathologist
Joseph DE NANASSY	Pediatric Pathologist

Kingston Forensic Pathology Unit

Victor TRON	Head of Pathology & Molecular Medicine, Pathologist
Kristopher CUNNINGHAM	Medical Director & Forensic and Cardiovascular Pathologist
John ROSSITER	Neuropathologist
Marosh MANDUCH	Pathologist
Patricia FARMER	Pathologist
Paul MANLEY	Pathologist
David HURLBUT	Pathologist
Jerry CHEN	Pathologist
Christopher DAVIDSON	Pathologist
Tim CHILDS	Pathologist
Alexander BOAG	Pathologist
Iain YOUNG	Pathologist
David LEBRUN	Pathologist
Sandip SENGUPTA	Pathologist
Suzie ABU-ABED	Pathologist
Samuel LUDWIN	Pathologist
David BERMAN	Pathologist
Sonal VARMA	Pathologist
Mark SCHNIEIDER	Pathologist

Hospital for Sick Children

Glenn TAYLOR	Head of Pathology, Pathologist
David CHIASSON	Medical Director and Forensic Pathologist
Gregory WILSON	Pathologist
William HALLIDAY	Neuropathologist
Cynthia HAWKINS	Neuropathologist

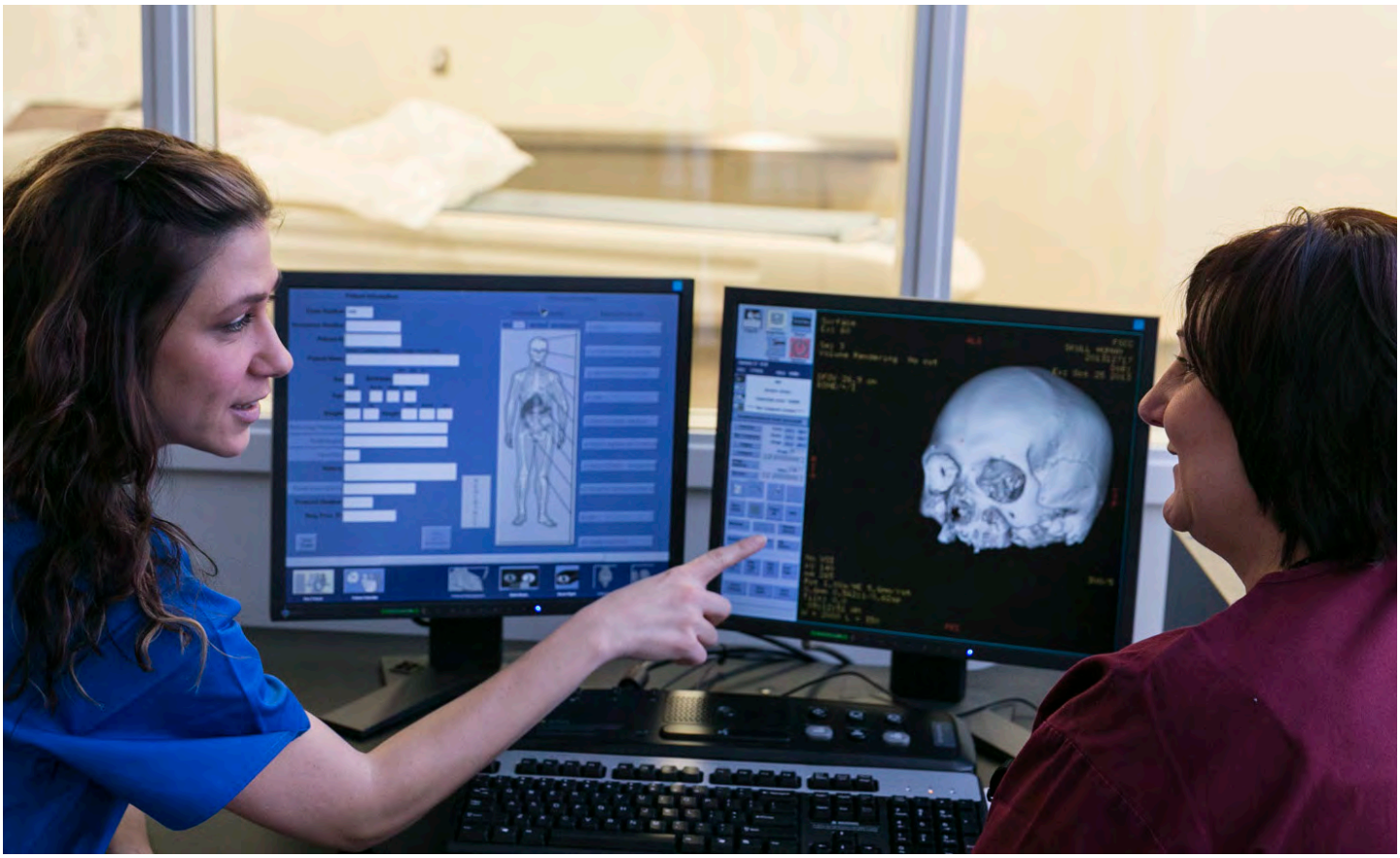
Northeastern Regional Forensic Pathology Unit

Martin QUEEN	Medical Director and Forensic Pathologist
Sharon BOONE	Forensic Pathologist Locum
Michael D'AGOSTINO	Forensic Pathologist (Sault Area Hospital)
Silvia GAYTAN-GRAHAM	Neuropathologist
Scott FAIRGRIEVE	Forensic Anthropologist
Scott KEENAN	Forensic Odontologist

Mount Sinai

Patrick SHANNON	Perinatal Pathologist
Sarah KEATING	Perinatal Pathologist

Community Pathologists	Hospital Location
Chhaya ACHARYA	Bluewater Health - Mitton Site
Kunniparampil ALEXANDER	Brampton Civic Hospital
Nihad ALI-RIDHA	Mackenzie Richmond Hill Hospital
Pat ALLEVATO	Windsor Regional Hospital Metropolitan Campus
Reza BEHJATI	Orillia Soldier's Memorial Hospital
Pravin BHAVSAR	St. Mary's General Hospital
Jagdish BUTANY	Toronto General Hospital
Konrad Kung Yeung CHAN	Joseph Brant Memorial Hospital
Satish CHAWLA	St. Catharines Site
Nilam CLERK	Mackenzie Richmond Hill Hospital
Brian CUMMINGS	Grand River Hospital Kitchener-Waterloo Centre
Ardit DELIALLISI	Grey Bruce Health Services
Franco DENARDI	St. Catharines Site
Dimitrios DIVARIS	Grand River Hospital Kitchener-Waterloo Centre
Peter ENGBERS	Woodstock General Hospital
Nicholas ESCOTT	Thunder Bay Regional Health Sciences Centre



Ziba FADAVI	Orillia Soldier's Memorial Hospital
James FARMER	Hotel Dieu Hospital
Hudson GIANG	Ross Memorial Hospital
Ram GIDWANI	Bluewater Health - Mitton Site
Ann GUZOWSKI	St. Catharines Site
Omar HAKIM	Windsor Regional Hospital Metropolitan Campus
Julien HART	Joseph Brant Memorial Hospital
Angela HAWORTH	Joseph Brant Memorial Hospital
Eric HO	Ross Memorial Hospital
Said ISMAIL	William Osler Health Centre
Prashant JANI	Thunder Bay Regional Health Sciences Centre
Chaozhe (Bell) JIANG	Joseph Brant Memorial Hospital
Sangeeta JOSHI	St. Catharines Site
Suhas JOSHI	St. Catharines Site
Hassan KANAAN	Bluewater Health - Mitton Site
Shiv KAPUR	Royal Victoria Regional Health Centre
Olayiwola KASSIM	West Parry Sound Health Centre
Scott KERRIGAN	North Bay Regional Health Centre
Dimitri KOUTSOGIANNIS	St. Catharines Site
Annie KURIAN	Bluewater Health - Mitton Site
John LENTZ	Mackenzie Richmond Hill Hospital
Navid LIAGHATI NASSERI	Bluewater Health - Mitton Site
Charles LITTMAN	Manitoba Health Sciences Centre

Dong LIU	Woodstock General Hospital
Rosemary LUBYNSKI	Bluewater Health - Mitton Site
Kelly MACDONALD	Lake of the Woods District Hospital
Kerry MACDONALD	Lake of the Woods District Hospital
Karen MACNEILL	Royal Victoria Regional Health Centre
Zbigniew MANOWSK	The Trillium Health Centre - Mississauga Site
Anil MISIR	McMaster University - Medical Centre
Paul MOZAROWSKI	Sault Area Hospital
Ken NEWELL	Grey Bruce Health Services
Kathleen O'HARA	Sault Area Hospital
Gemma PASTOLERO	William Osler Health Care Centre - Etobicoke Campus
John PENSWICK	Muskoka Algonquin Health Care
Susan PHILLIPS	Manitoba Health Sciences Centre
Russell PRICE	Royal Victoria Regional Health Centre
Paul RA	Windsor Regional Hospital Metropolitan Campus
Roland RIECKENBERG	Orillia Soldier's Memorial Hospital
Ian SALATHIEL	Royal Victoria Regional Health Centre
Michelle SAPP	William Osler Health Centre
Barry SAWKA	Grand River Hospital Kitchener-Waterloo Centre
Jose SEGURA	Welland County General Hospital
Sandip SENGUPTA	Queen's University
Sajid SHUKOOR	Windsor Regional Hospital – Ouellette Campus
Pamela SMITH	Windsor Regional Hospital Metropolitan Campus
Mark SOARES	The Trillium Health Centre - Mississauga Site
Alexander STEELE	North Bay Regional Health Centre
Abdul SYED	Royal Victoria Regional Health Centre
Joseph WASIELEWSKI	Thunder Bay Regional Health Sciences Centre
Syed fasahat WASTY	St Thomas-Elgin General Hospital
David WELBOURNE	Thunder Bay Regional Health Sciences Centre
Grazyna ZEBROWSKA	St. Catharines Site
Zuoyu ZHENG	St. Catharines Site

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