A first look at the Coronial Admissions and Enquiries (CAE)

Graeme Schofield VIFM Oration

Single Punch Fatalities

Forensic Radiology

Road Safety

Preventing Sexual Violence: What works?
FEATURES

03 FROM THE DIRECTOR - Stephen Cordner

05 FROM THE HELM - Mari-Ann Scott

08 ROAD SAFETY - Morris Odell

09 PREVENTING SEXUAL VIOLENCE - WHAT WORKS? - Rachel Jewkes

10 THE SCIENCE OF BEER EXPLAINED - Luke Rodda

12 COUNCIL CHAIR - John Coldrey

14 DR DIANA JARAVAZA - International Forensic Medical Trainee

16 CLAIRE RICHARDS - Profile of a Forensic Photographer

18 CORONIAL ADMISSIONS AND ENQUIRIES (CAE) - Open for business

20 THE ROLE OF DRUGS IN DEADLY SINGLE PUNCH ASSAULTS - Jennifer Pilgrim

22 FORENSIC RADIOLOGY - Chris O’Donnell

28 THE GIFT - Bruce Esplin

29 NCIS PREVENTION - Eva Saar
FROM THE DIRECTOR

Its reasonably high profile does not mean that there is a good understanding of forensic medicine – and at VIFM we would like to take the opportunity of ‘Forensic Matters’ to do something about that.

Some years ago, Alan Greenspan made the following remark about Anderson’s, in the wake of the collapse of Enron, the event which precipitated the global financial crisis.

“Trust and reputation can vanish overnight. A factory cannot.”

It was a comment on the fragility of companies lacking tangible assets. If he had ever heard of the forensic sciences, Greenspan would know that we have no tangible product – we produce observations and opinions whose value is proportional to the credibility of those making them. We are nothing, our contribution cannot be made if we do not have a reputation for credibility with those who depend on us.

How do you get this reputation and trust. Easy. You earn it. It is not something which can just be demanded and given. It is therefore important to build community confidence in one’s Institution if one can. The community, and our colleagues and partners will make their own judgement when some adverse event ensures the institution becomes subject to some sort of scrutiny, whether in the media or by more formal mechanisms. But also, we need to actively try to improve understanding by writing about what we do, and putting that in front of, especially, the key people and organisations with whom we work on a daily basis. We hope that with that understanding comes increased confidence.

It is very hard in the busy times we inhabit to read! So we hope that you will find what follows to be not only useful, but interesting and enjoyable at the same time. In the pages that follow we go behind the scenes at VIFM and meet highly motivated people who are doing wonderful work for the public good. You can see the list on the page opposite: a fascinating mix of service snapshots, research outcomes, international perspectives, and the arts even (with Bruce Esplin’s sculpture ‘The Gift’ projecting the powerful feelings for those involved in organ and tissue donation and transplantation).

Liz Manning has done a superb job leading the team to write and put this together. This sort of thing happens in the interstices of the little time available knowing that we all have to pull that bit harder to communicate across VIFM, and with those whom we work or serve. Enjoy – and let us know what you think.

Stephen Cordner, Director, VIFM
I wanted to have hands on role in an organisation that delivered important community services’’
VIFM’s services have grown along with the Victorian community. This growth has provided significant challenges for management as the Institute has evolved from a small 35 person medico-legal death investigation agency in 1988 to a complex multifunctional organisation which now provides world class forensic medical and scientific services. These include forensic pathology and mortuary services, clinical forensic medicine (investigation of interpersonal injury including sexual violence, traffic medicine and custodial medicine), forensic radiology, forensic odontology, forensic anthropology, toxicology and molecular biology (DNA) services along with research and teaching in these fields.

At the 20 year point of operations, VIFM’s Governing Council and executive management recognised the need for a new management model to ensure service growth was underpinned by robust operational and business systems. In 2008 the role of a Chief Operating Officer (COO) was established and Mari-Ann Scott was appointed as the Institute’s first COO. This enabled the Director, Professor Stephen Cordner to focus on strategic development, overseeing the delivery of medical, scientific and tissue banking services and external liaison while Scott concentrated on ensuring that the corporate systems and processes that underpin effective service delivery and growth were in place.

Mari-Ann Scott’s career background provided ideal preparation for this role. Years of experience in health service economics, policy, planning and monitoring gave her a good grounding in the challenges of medical and scientific service development and delivery. After initially qualifying as a nurse in Western Australia, Scott studied economics with a particular interest in macroeconomics. She later completed a Master of Philosophy degree in equity on the distribution of health care in Australia. This led to senior Government roles in resource modelling and planning for hospitals, community health services and aged care facilities. “I jumped at the opportunity to work at the VIFM because I had reached a stage in my career when I wanted to have hands on role in an organisation that delivered important community services. The Institute’s work is vital to the state’s justice and health systems and it is important to me that I work in an organisation with a meaningful operational environment.”

Mari-Ann Scott, Chief Operating Officer at VIFM gives her perspective on the challenges of medical and scientific service development and delivery.
VIFM staff worked long hours for months but what struck me was how calm and focused this big team was. Everyone knew what to do and when.”

-Mari-Ann Scott
Leadership and management of the Institute's corporate governance arrangements, internal business services, strategic alliances and operational effectiveness are some of the key areas of focus for Scott. The Institute is a challenging organisation to run because of the complexity of its services which include NATA accredited and TGA – licenced laboratories, multiple medical and scientific specialties, a requirement to operate on a 24 by 7 basis, liaison with families of the deceased during a time of great distress and the ultimate responsibility of providing independent and evidence-based medical and scientific opinions for the justice system in Victoria.

Scott had been at the Institute for almost 18 months when the organisation was tested in the aftermath of Victoria's devastating 2009 bushfires in which 173 people died. VIFM staff assisted by colleagues from inter-state and overseas worked round the clock for months to identify bushfire victims for their families. It was the first time that CT scanning had been used anywhere in the world on such a large scale for disaster victim identification. All specialties contributed to identifications including mortuary staff, forensic pathologists, forensic odontologists, forensic anthropologists, forensic clinicians, toxicologists, molecular biologists (DNA) and forensic radiologists.

It presented Mari-Ann Scott with significant logistical challenges that had to be solved in a very short time. “I was at the gym that Sunday morning when the call came in. At that stage we did not know the exact number of fatalities, but we had to ensure that we were ready to receive a large number. There was an incredible amount of technical and organisational issues to sort out and this became the focus for the Institute’s Support Services for about three months. We had to deal with the coordination of a large number of interstate and overseas volunteer clinicians”.

Support services had to organise temporary workspaces, book accommodation, organise catering, set up contracts, ensure that site security and confidentiality was maintained and install additional computer networks and specialised software systems. “VIFM staff worked long hours for months but what struck me was how calm and focused this big team was. Everyone knew what to do and when; there was an incredible sense of shared purpose. It was a remarkable effort by support staff faced with a hugely expanded professional workforce and related workload in ensuring that the clinicians and technicians had what they needed every day so that they could contribute to the identification process”.

It was exhausting and emotionally draining work which also entailed VIFM staff visiting the fire sites, and providing close liaison with families, police, emergency services and the Coroner’s Court. VIFM also provided services for burns victims through the Donor Tissue Bank’s securing of additional stocks of skin from overseas to supplement local supplies for Victoria’s burns victims.

Since Scott’s appointment in 2008 the VIFM has redeveloped its building. “We had outgrown the building footprint and needed to substantially upgrade and expand the Institute’s mortuary facilities”. Scott was instrumental in planning and developing a proposal that secured Victorian Government funds for the major building redevelopment.

She has also overseen logistical management of service delivery during the building phase. “We have had to maintain service delivery and laboratory accreditation while the building was demolished and reconstructed around us. It has been very difficult for staff to work around a building site, but we are now almost at the end of the build and looking forward to seeing the transformation of this facility”.

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The VIFM’s Division of Clinical Forensic Medicine (CFM) has a long history of cooperation with police, and especially Road Policing Drug and Alcohol Section (RPDAS) and the Major Collision Investigation Unit (MCIU), to improve road safety in Victoria. Nurses employed by CFM are available in most parts of Victoria to obtain blood samples from drivers as part of a drug impairment assessment, where there has been a failed breath test or where a blood sample has been requested by a driver. Forensic physicians from CFM provide expert opinions regarding alcohol read-back calculations, drug levels, drug effects and impaired driving to assist police in enforcing the provision of the Road Safety Act. They also appear in court to give evidence about these cases.

The drug impaired driving laws in section 57 of the RSA require a Certificate of Drug Effect to be issued by an Authorised Expert before a prosecution can proceed. CFM has four Authorised Experts who review case files and video-recorded impairment assessments to allow police to enforce these provisions. The video recordings provide a unique opportunity to observe drug impaired behaviour but they are not able to be used for teaching due to privacy provisions in the law. CFM forensic physicians assist the Major Collision Investigation Unit with expert opinions about all aspects of traffic medicine which may be required for crash investigation. This includes detailed analysis of drug and alcohol use in serious collision cases, interpretation of injuries and opinions regarding fitness to drive and the impact of medical conditions of crash causation and risk. Many court appearances ensue as a result.

CFM is represented on the VicPol Road Fatality Review Panel which considers whether deaths on the road fit the ABS guidelines for inclusion in the official road toll statistics. This has given rise to a research project aimed at examining the histories of drivers who apparently die of natural causes behind the wheel. A better understanding of these cases will aid the development of licensing guidelines.

Physicians from CFM are also involved in teaching and research in the field of traffic medicine, often in association with the Monash University Accident Research Centre and Latrobe University. VicPol is involved in some of these projects. Areas of research interest include the effects of medical conditions on driving, older driver road behaviour and crash risks, and rehabilitation after stopping driving. Teaching and training activities involve many areas of VicPol as well as medical and law students and community groups.

Dr Morris Odell, Senior Forensic Physician, Clinical Forensic Medicine
Professor Rachel Jewkes is a public health physician and the Director of the Gender and Health Research Unit at the South African Research Council in Pretoria, South Africa. She is also the Secretary of the Sexual Violence Research Initiative and the Director of the global program called What works to prevent violence? Globally a third of women and girls have experienced physical or sexual violence from an intimate partner. In some regions this prevalence is even higher.

Prevention strategies need to be based on a sound understanding of the drivers of success and evidence of effectiveness. Research on risk factors for perpetration show the critical importance of intervention across the life course, with early childhood experiences and gender socialisation critically impacting on behaviour in adolescence and adulthood. Very high levels of violence are driven by cultures supportive of violence that is seen as normal in a wide range of social relations.

Gender-based prevention strategies fall into three main groups. Strategies to prevent violence from occurring focus on intervention to reduce the risk factors that drive the problem. For example by addressing ideals of masculinity that include unfair treatment of women. Other initiatives focus on strengthening women and girl’s resilience to violence through economic and educational empowerment. The third group of strategies seek to prevent violence through stronger and more effective response mechanisms – for example by reducing impunity for rape through better policing and prosecution of offenders, or provision of shelters to enable women to escape violent relationships.

Professor Jewkes’ work has encompassed research into sexual violence in Africa, Asia and the Pacific. This has included detailed mapping of the prevalence and context of sexual violence, gender inequity and health in South Africa. Recently Professor Jewkes was the head technical advisor in a United Nations study which examined the use of violence against women in six nations in Asia and the Pacific and how it can be prevented. This major project involved input from 13,000 men and 3,000 women.

The study found big variations in the prevalence of sexual and physical violence against women by their intimate partners ranging from 25% in Purwejo in Indonesia to 80% in Bougainville in Papua New Guinea. The study also investigated the prevalence of violence against women who were not intimate partners.

VIFM will host the Graeme Schofield Oration at the Melbourne Town Hall on Thursday 7 August.

To register go to http://www.schofieldoration.org.au/
Alcohol abuse is a leading factor in many crimes and accidents and beer is the oldest and most widely consumed alcoholic beverage in the world. Research into the detection of beer (as opposed to the detection of alcohol) consumption is therefore an important focus for forensic science. Toxicology research into this field is being undertaken at the VIFM by Monash University PhD candidate, Luke Rodda.

His PhD project has focused on compounds derived from the hop plant (Humulus lupulus L.) used in brewing and found in beer. Detection of these compounds in offending drivers’ blood and urine confirms beer ingestion. The innovative detection technique developed by Rodda can be used to provide important information on the drinking behaviour and circumstances surrounding after-drinking (hip-flask) defence cases. This term applies to cases where there is a question as to whether the driver’s alcohol consumption occurred prior to, or following a motor vehicle incident. It can also
be utilised locally and globally in other forensic applications such as coronial investigations, drug facilitated sexual assault, research and other medico-legal casework.

The technique focuses on iso-α-acids (IAA) and three structurally similar but chemically-altered IAA known as “reduced IAA” (rho-, tetrahydro- and hexahydro-IAA). These are beer-specific ingredient congeners. Some of these products are used specifically in brown, green or clear bottled beers. A validated method for the detection of these compounds in blood was used to assess concentrations and time profiles in drinking studies using a variety of beers and in a number of coronial cases.

A validated protein precipitation extraction and ESI-UHPLC-MS/MS method was developed and used to analyse blood collected over six hours from five volunteers given different beers separated by at least one week. The amount of beer consumed was calculated to reach about 0.05% at peak blood alcohol concentrations. Five drinking studies were undertaken using beers with a high or low concentration of IAA and beers containing each of the reduced IAA in order to provide valuable pharmacokinetic data of these compounds. Approximately 150 coronal cases were also analysed as part of the research project.

The research confirmed that this novel method was a suitable procedure for the separation, detection, and quantification of IAA and reduced IAA compounds in biological specimens which can prove beer consumption in volunteer studies. In authentic casework, beer ingestion was confirmed in many coronial cases where no circumstantial evidence of beer consumption was previously provided.

With four papers already published, Rodda is undertaking his PhD thesis by publication. This will eventually include seven peer-reviewed publications by mid-2014. Presentations on the project at recent international and domestic toxicology conferences attracted positive feedback from leading international researchers working in alcohol and related congener analysis fields. This project has made a significant contribution to the international field of forensic toxicology through the development of a new technique for the confirmation of beer ingestion in medico-legal casework. Future research may investigate the identification of wine- and spirit-specific markers that will provide additional tools for forensic laboratories.

A recent research visit by Luke Rodda to forensic institutes in Germany and Sweden has led to potential collaboration projects with the Freiburg Forensic Institute in Germany to increase the understanding of the pharmacokinetics of iso-α-acids. The German laboratory routinely undertakes alcohol congener analysis in casework when beer consumption is at question and they have advised that they will adopt Rodda’s methodology.
The VIFM is overseen by a Governor-in-Council appointed Board of Management, known as the VIFM Council. The Council is chaired by former Justice of the Supreme Court, Director of Public Prosecutions in Victoria and criminal barrister, the Honourable John Coldrey QC. He presides over a very senior group which includes the VIFM Director; Deans of the medical faculties of Melbourne and Monash Universities; the State Coroner; an Assistant Commissioner of Police; members of the judiciary; senior representatives from the Justice, Health and Community Services Departments, and medical and finance experts. The makeup of the VIFM Council is determined by the VIFM Act and it reflects the Institute's key clients. The Council is responsible for defining the Institute's overall strategic direction and monitoring and reviewing performance and service delivery against that framework.

John Coldrey first encountered the Institute “in a professional sense though observation of its forensic pathologists, forensic clinicians, toxicologists and molecular biologists as they provided investigative reports and evidence as expert witnesses to the courts. I was impressed by them. As a judge, one draws comfort from opinions provided by people who are truly expert, and give honest, objective and reliable opinions that are supported by extensive case work and research. The VIFM is staffed by people who are expert in their various medical and scientific fields, and it has a well-deserved national and international reputation for the excellence of the contribution it makes to the rule of law”.

According to Coldrey, the VIFM is a unique organisation in that it offers a wide range of forensic expertise under one roof. These include forensic pathology; clinical forensic medicine, histopathology, forensic radiology, forensic odontology and anthropology, toxicology and molecular biology services, forensic nursing, mortuary services, donor tissue bank services, public health research and national coronial information services. He also cites the annual list of book chapters and articles published in peer reviewed journals by VIFM clinical and scientific staff as impressive testimony for the contribution VIFM makes to the international fields of forensic medicine and science. “It is a great pleasure to work with people who are the ‘top guns’ in their respective fields of expertise”.

When John Coldrey retired from the bench in 2008, the then Chair of the VIFM Council, Chief Justice Marilyn Warren canvassed his interest in taking on the role as Chair of the Institute’s governing body. Justice Warren had decided to step down because of increased work demands. John Coldrey was delighted to accept and following the Attorney General’s approval, he was appointed in September 2008. The Institute’s governance model is one that is essentially underpinned by the concept of independence which, in turn, supports reputation. The Chair believes that it is important for the Council to maintain strategic governance, policy setting and monitoring role and to leave operational management to the executive.

Although Council members are nominated by particular organisations, John Coldrey says that in line with good governance practice, Council members must consider the Institute’s interests first. This may entail withdrawing from particular discussions where there is an identified conflict of interest. The Council has developed a Charter which outlines the roles and responsibilities of Council members and how to address matters such as conflicts of interest.

Structurally the Council operates a number of sub-Committees which look at particular Institute functions in detail. These include Executive and Finance, Audit and Risk Management and Ethics sub-committees. The Ethics Committee oversees the Institute’s substantial research program. Responsible research is intrinsic to VIFM’s service operations which are underpinned and informed by research and teaching. The Ethics Committee is part of a research
management framework which ensures that projects have scientific merit and are ethically sound. The VIFM Ethics Committee is a registered Human Research Ethics Committee with the National Health and Medical Research Council. The Committee considers applications for research that require the use of human tissue, data collected or created by the VIFM and internal and external participant recruitment. All research projects are reviewed by a VIFM Research Advisory Committee before being assessed by the VIFM Ethics Committee.

The full Council meets six times each year with sub-committees meeting six times a year on alternate months. Despite its heavy workload the Council is stable in terms of its membership and it provides the Institute’s executive management with valuable continuity of knowledge and experience. “The Council is a dynamic, conscientious and hard working group and I could not ask for a better cohort to Chair”. The Council’s next major piece of work is overseeing the re-development of the VIFM Act which will renew the Institute’s legal framework.
Zimbabwean doctor Diana Jaravaza is undertaking a 12 month placement at the Victorian Institute of Forensic Medicine while completing her Masters of Forensic Medicine. Her placement is funded by the Australian Federal Police under a program which has supported the development of forensic medicine in Africa.

Before moving to Melbourne in January this year, Diana worked as a Forensic Medical Officer in Windhoek, Namibia. There most of the non-natural death investigation cases were the result of road traffic accidents although she did see occasional victims of elephant attacks, snake bite and homicide.

Diana’s interest in medicine was triggered as a 10 year old when she would accompany her mother on weekends to her work as a nurse in her brother’s medical surgery in Harare, Zimbabwe. There Diana would shadow the junior nurses as they retrieved files and sterilised equipment. Having a number of relatives who were in the medical field also provided much inspiration.

Diana enjoyed biology and chemistry studies at high school and on graduation was accepted into the Medical University of South Africa (now the University of Limpopo) in Pretoria. However as a Zimbabwean, she was not eligible for a scholarship support which was then only available for South African residents. Diana’s medical studies were generously supported by her aunt until her final year when the University introduced a merit award which fully funded her final year tuition costs.

On graduation Diana undertook a two year internship at a hospital in Durban, South Africa which gave her broad experience across many disciplines. She also gained experience in working with diverse cultures as Durban is a very multicultural society. According to Diana “This made for interesting epidemiology”. It was there that she developed an interest in specialising in forensic medicine. “I had
always been interested in anatomical pathology. For me pathology is the basis of medicine. It is an exciting field and there is always something new to learn.”

On completion of her internship Diana successfully applied for a medical officer post in Namibia and was placed at the Forensic Mortuary in the Windhoek Central Hospital. She worked there for three years with Cuban forensic pathologists undertaking rotations in Namibia under a Government to Government agreement.

Diana worked a five day week in Windhoek and was occasionally on call after hours. The annual case load was close to 1,000 deceased or about one fifth of the VIFM annual case load. Toxicology and microbiology analysis services were provided by the Namibia Forensic Science Institute and the Namibia Institute of Pathology. The Namibian death investigation system is police based, not a Coronial system such as the one operating in Australia. In Namibia the police seek magisterial authority for the investigation of sudden and unexplained deaths. After the mortuary provides a medico-legal report on the cause of the death, the magistrate then makes a formal ruling on the identity of the deceased and circumstances of the death. If the circumstances warrant further action then the magistrate will recommend criminal proceedings.

Diana’s responsibilities included undertaking autopsies and related medico-legal reporting, talking to families of the deceased, liaison with police and attending court when required. She also provided introductory anatomy training for student paramedics. “The work was interesting and it confirmed my interest in forensic medicine”. During her time in Namibia Diana also undertook post graduate studies, completing a Diploma of Forensic Medicine through the University of Cape Town in South Africa. In 2011 Diana attended a week-long training program on the Medico-Legal Investigation of Violence run by the VIFM in Windhoek and funded by the Australian Federal Police. This workshop hosted the second meeting of the African Network of Forensic Medicine (now the African Society of Forensic Medicine -ASFM) which Diana attended. This meeting brought together forensic clinicians from across Africa to focus on professional networking and the development of forensic medical standards and policies.

Diana became an active member of this pan-African group taking on the role as editor of the ASFM Newsletter. The ASFM has grown to encompass membership of forensic clinicians from 28 African nations. It hosts an annual conference and has almost completed common standards of practice for mortuary management, autopsy, disaster victim identification and the medico-legal investigation of sexual violence.

It was through her involvement with the ASFM that Diana became aware of and applied for a place in the African Masters of Forensic Medicine program funded by the Australian Federal Police and delivered by the VIFM. Diana secured the final funded place under this program which enabled her to undertake the VIFM/Monash University Masters of Forensic Medicine Program and a 12 month training attachment at the VIFM. Diana says that one of the adjustments to life at the VIFM is working in a place where a single language (English) predominates. The searing heat was also a shock for her when she arrived during the January heat wave which saw the temperature soar above 40 degrees for a few days.

It will be a challenging year which requires balancing a significant study work load with practical placement experience. Diana is enjoying the work and says that she has already learned a lot. According to Diana the experience of working in an advanced forensic medical system for a year will lay the ground work for her long term goal of studying for a Masters in Forensic Pathology in Zimbabwe or South Africa. Eventually she would like a job in forensic medicine in Africa which combines practice and teaching.
Clair Richards’ ambition to be a forensic photographer started when she was 15 after a conversation with a family friend who worked in Police Crime Scene Investigation. She has succeeded in fulfilling that teenage ambition, but it has been a roundabout route. After studying photography in high school Clair completed a Certificate III photography course at the Sydney Institute of Technology. She then worked as a photographer on a cruise ship in Alaska and the Caribbean before travelling to the UK and working there as a wedding photographer’s assistant for two years. But the lure of forensic photography did not wane and Clair returned to Australia to undertake a four year Bachelor of Applied Science - Scientific Photography at the Royal Melbourne Institute of Technology (RMIT). This included an Honours year during which Clair undertook a research project at the Victorian Institute of Forensic Medicine, working with the Institute’s forensic photographer. Clair then successfully applied for the role of forensic photographer at the VIFM, commencing work at the Institute in May 2011.

Most people think of crime scene and criminal homicide photography when they hear the word forensic, but this work is undertaken by police photographers. At the VIFM, the focus is on biomedical imaging as a record for forensic pathologists, forensic clinicians and the courts, documenting the medico-legal investigation of death and injuries. As the clinical images may be reviewed by other medical experts and shown in court as evidence, it is vital that they are an accurate representation of the subject. Tools such as scales are used to show the size and nature of injuries. Forensic image taking requires expertise in technical photographic techniques.

Clinical, medical and macro imaging requires a high degree of precision and expertise in relation to lighting and lens choice to ensure accuracy of colour and form. “We are currently working on implementing ultra violet and infrared photography to document injuries not otherwise visible to the eye”. Forensic photographs need to adhere to guidelines established by
national expert Working Groups. These guidelines are designed to ensure that images are not distorted or misleading. “I have to select the right equipment and technique for each image so that I produce an accurate reproduction of the subject every time. Injury size and location can be extremely important. Patterned abrasions can provide important information, but if they are not photographed well the viewer will not be able to interpret the injury correctly”. All the images are digital and are stored in a secure case management system.

This can be confronting work. As a forensic photographer at the VIFM Clair’s role includes documenting those who have died suddenly and unexpectedly in sometimes harrowing circumstances. She also records the injuries of victims of physical and sexual assault.

“I am able to work in a role that combines my photographic career with my interest in forensic medicine and the law. Forensic imaging is an important resource for the doctors in their role as independent investigators. I feel lucky to be able to provide that support in an Institute that provides a community service”. Clair also teaches photographic techniques for recording injuries to VIFM’s regional network of doctors and nurses as part of their medical training experience in forensic medicine. She also lectures in this field to doctors enrolled in the VIFM/Monash University Master of Forensic Medicine program.

There are very few practitioners of this highly specialised field of photography in Australia and Clair values opportunities to interact with her interstate peers through her involvement in a national Forensic Photographic Working Group. “I am always learning”. Clair is now studying towards a Masters in Forensic Science through the University in Canberra and has a long term goal of undertaking a PhD in Forensic Photography.

Clair Richards fulfills a lifetime ambition of combining photography with medicine and the law....

Forensic imaging is an important resource for the doctors in their role as independent investigators”
The Coronial Admissions and Enquiries (CAE) office opened for business within the VIFM Forensic Pathology Service in August 2013, replacing the work of the Coroners Court of Victoria’s Initial Investigations Office.

CAE Open for business
The Coronial Admissions and Enquiries (CAE) office opened for business within the VIFM Forensic Pathology Service in August 2013, replacing the work of the Coroners Court of Victoria’s Initial Investigations Office.

The CAE is a 24-hour service which provides a first point of contact for coronial and forensic medical and scientific processes following reportable deaths. The new service streamlines the initial phase of the Coroner’s investigation and improves the collection of information for medical investigation. Liaison with families of the deceased is also an important role for the CAE.

Rationale for the new service
The transfer of functions from the Coroners Court of Victoria (CCOV) to the VIFM was the result of an Ernst and Young review commissioned by the CCOV. The review identified considerable benefits in the CCOV and the VIFM revising service arrangements and adopting a new service delivery model. The review noted that the body intake and release function hitherto undertaken by the CCOV was not the core business of the Court. Additionally, as the information gathered in the early phases of a coronial investigation is primarily medical, and the VIFM has both the forensic medical knowledge to collect this data and expertise in caring for the deceased, the review recommended that the Court transfer this service to the VIFM.

The reorganisation has improved service delivery integration in the death investigation partnership between the CCOV and the VIFM. The new system minimises duplication of effort and more fully supports Coroners as the key decision makers in the death investigation process.

Functions of the CAE
The main functions of the CAE are:
• receiving the report of a death;
• coordinating the admission of the deceased person to the mortuary;
• making recommendations to the Coroner on the identity of deceased persons;
• providing administrative support to the Coroner for the initial phase of the investigation;
• establishing the identity of and contact with senior next of kin;
• liaising with families;
• collecting information and liaising with police and investigating agencies;
• coordinating medical examinations;
• dealing with enquiries about Coronial processes at the initial stages of the investigation; and
• releasing the deceased person for funeral rites at the direction of the Coroner.

Staffing for the CAE
The CAE’s multidisciplinary team includes Case Liaison and Health Information Nurses, Medico-Legal Executive Assistants who work with a duty pathologist, identification services (odontologists and anthropologists), senior mortuary staff, and Donor Tissue Bank nurses to provide the initial investigation service. Together they respond to reports of death, liaise with families and Victoria Police and other investigating agencies such as WorkCover, and prepare preliminary advice for the onsite Coroner, who then decides how investigations will proceed. The CAE team also supports often distressed family members when they visit the VIFM to identify or view the bodies of their family members.
CAE Team manager, Dr Jodie Leditschke has more than 20 years of experience at the VIFM. Assistant Manager Ally O’Dell’s hospital-based background complements Dr Leditschke’s forensic medical and scientific experience. The CAE’s team of nurses and medico-legal assistants have extensive nursing and coronial system experience.

**Challenging but successful beginning**

The first few weeks of the CAE presented major challenges for the new team who were faced with a modified phone system and redesigned electronic case management software. These elements added to the complexity of the task facing the CAE team to simultaneously deliver a 24/7 service and implement planned efficiencies to the system. It was a major change management exercise for the VIFM and the Coroners Court with high expectations from all parties. In the first months of operation the CAE was ably supported by VIFM’s wider mortuary and pathology group, with initial service and knowledge gaps filled by experienced and committed senior staff. VIFM staff worked incredibly hard to deliver a highly professional service. This was enabled by effective collaboration with the Coroners Court and in particular the support of individual Coroners and the Principal Registrar, Margaret Craddock. The CAE has garnered high praise from Coroners, family members of deceased, funeral directors and community-based medical professionals who value the opportunity to liaise with VIFM’s medical professionals when reporting, or enquiring about reporting a death.

Helen McKelvie, Manager Medico-legal Services, VIFM
THE ROLE OF DRUGS IN DEADLY SINGLE PUNCH ASSAULTS

DR JENNIFER PILGRIM
POSTDOCTORAL RESEARCH FELLOW, MONASH UNIVERSITY

Victorian Institute of Forensic Medicine (VIFM) Research Fellow, Dr Jennifer Pilgrim recently conducted a nation-wide study into “king hit” deaths in Australia. The forensic toxicology research was undertaken in collaboration with Dr Dimitri Gerostamoulos and Professor Olaf Drummer of Monash University and VIFM.

The study, which was published in the February, 2014 edition of the international journal, Drug and Alcohol Dependence, reviewed 90 single punch or “king-hit” cases resulting in death. The cases were drawn from coroners’ reports over a 12-year period to December 2012. Toxicological reports revealed that alcohol was involved in the majority of cases (73%) with the victims’ blood-alcohol reading registering at up to four times the legal driving limit in Australia. Illicit drugs were detected in 10 cases of which most involved cannabis, with pharmaceutical drugs detected in three other cases.

Importantly, the finding that alcohol was detected alone in most cases negated claims by liquor lobbyists that violent assaults involve alcohol with other drugs. In addition, this study demonstrated that although alcohol is most commonly associated with the aggressive offender, its use also increases the risk of an individual becoming the victim of a violent assault.

Individuals in the cases reviewed in the study were aged between 15 and 78, with an average age of 33 years. Four of the 90 victims were women. Of the 90 cases cited, 28 occurred in New South Wales, followed by Victoria and Queensland (24 each). The study did not include cases still before criminal courts or under investigation by the coroner. Non-fatal cases where victims were left with permanent disability were also excluded. Consequently, this is likely to be an underrepresentation of the true prevalence of king hit assaults.

Alcohol and drug misuse are significant problems in the community, but this study showed that in the case of violent assaults, alcohol consumption is the more urgent contributing issue. The study prompted changes in sentencing legislation in NSW and called for a change in Australia’s drinking culture. It also generated significant public awareness and interest from the Australian media, including commercial television, radio, magazines and newspapers. Dr Pilgrim was invited to speak on this research at campaigns and education seminars throughout Australia aimed at reducing alcohol-related violence and raising awareness that a single punch can be fatal.

Other research undertaken by Dr Pilgrim has included an investigation into the involvement of medico-legal death investigators in Victorian coroners’ cases which called for...
better communication to facilitate the coronial process. Dr Pilgrim’s studies on pharmaceutical drug-related death have highlighted widespread and growing issues relating to drug misuse in Australia. Specifically her research into codeine-ibuprofen analgesics which showed an increased risk of addiction and toxicity, led to the relabelling of Nurofen Plus® products by pharmaceutical company Reckitt Benckiser to better inform the public of the associated risks.

These studies and the changes to policy and practice resulting from their widespread publicity, demonstrate the important contribution VIFM and the Department of Forensic Medicine make to public health outcomes and death prevention.

Dr Jennifer Pilgrim is a Research Fellow in the Department of Forensic Medicine at Monash University and VIFM. She obtained her Ph.D in forensic toxicology at the Institute in 2011. In 2013 Dr Pilgrim was the recipient of the 2013 Victoria Fellowship and the Australian French Association for Science & Technology Award. This will support her travel to Sweden and France in 2014 to work on a multi-national project to develop a reference database for toxic drug concentrations.

She is widely published in peer-reviewed scientific journals and has presented her research at national and international meetings. Dr Pilgrim works with teams throughout Australia and internationally on her public health research, examining drug-related fatalities in order to identify opportunities for death prevention and the safer use of drugs. Her special research areas include the involvement of pharmaceutical drugs in sudden and unexpected death, with a focus on adverse drug reactions, inappropriate prescribing, pharmacogenetics and the Coronial process in Australia.

Importantly, the finding that alcohol was detected alone in most cases negated claims by liquor lobbyists that violent assaults involve alcohol with other drugs”
DR RICHARD BASSED PERFORMING AN IDENTIFICATION USING FORENSIC IMAGING (FORENSIC ODONTOLOGY)
Radiology has had a profound impact on clinical medicine since Roentgen’s discovery of X-rays in November 1895. Within months of this remarkable innovation, x-rays were used to supplement forensic autopsy practice. Thus radiological imaging of the deceased is not a novel undertaking. For much of the era of modern forensic pathology, the radiological tools of conventional x-rays and the image intensifier have been used to help identify the deceased (eg osteology, surgically implanted devices, odontology), to locate foreign material (projectile fragments, knife tips, shrapnel), to produce individual specimen radiographs (angiography of coronary arteries, laryngeal fractures, cervical spine injuries), to identify gas and fluid collections (air embolism, pneumothorax, haemopericardium), and to locate bony fractures, particularly in those anatomical areas not easily seen during the standard autopsy (e.g. the pelvis and vertebral bodies).

Until the late 1970s radiography was the mainstay of imaging in forensic practice. Forensic technicians would perform x-rays on all homicide, gunshot, diving, aviation, infant, and fire-related deaths. It was time consuming and effectiveness was limited by the inability to accurately determine depth on a two dimensional or planar image limiting the accurate localization of
foreign bodies and the lack of organ detail due to tissue overlap. Difficulties were also frequently encountered by technicians in optimal positioning of bodies that were traumatized, incinerated or distorted by pronounced rigor mortis. The introduction of “real-time” image intensification to some degree overcame these issues when three dimensional visualisation of regional anatomy was mandated, such as in recovery of elusive foreign bodies (e.g. small bullet fragments) although the technique was cumbersome.

In the early seventies, unassuming engineer Godfrey Hounsfield was working at EMI’s UK laboratories utilizing research money partly generated by the Beatles’ phenomenal success on the EMI record label. Hounsfield invented a new way to use x-rays in a technique originally called computerised axial tomography but now known as computed tomography or CT.

Much like Roentgen’s revolutionary discovery, Hounsfield’s invention completely changed medical practice such that within a few short years he was awarded the Nobel Prize for Medicine. This new imaging modality heralded a dramatic shift within clinical practice towards the greater reliance on imaging. Management of patients in the past had traditionally been dictated by physical examination aided by investigative procedures. Modern imaging including CT is now routinely employed prior to any medical or surgical intervention. This process subjugates, to varying degree, the role of physical examination.

In the late 1980s a group of enlightened pathologists and radiologists in Bern, Switzerland realised that such so-called cross-sectional imaging could have as profound an effect on the practice of medico-legal death investigation. They came up with a concept now called Virtopsy® or virtual autopsy i.e. pathological analysis of the deceased using a combination of imaging modalities including CT scanning, MRI, surface scanning, image-guided biopsy and 3D photogrammetry to produce a complex avatar that can be analysed and dissected using sophisticated image software on a workstation.

In 2000 the author, a hitherto exclusively clinical radiologist, started work at the VIFM. At that time the Institute’s radiographic technology was basic and x-ray was limited. The images were produced on hard copy negative film that had to be stored and could only be viewed on site. One of the first changes introduced to the mortuary was the purchase of a digital radiographic system which enabled images to be archived and viewed electronically including via email. Traditionally, the pathologist interpreted most images at the time of autopsy and sought radiological expertise only in particularly complex cases. The ability to view x-rays via computer had an immediate impact on work practices as the radiologist was able to review images off site at any time of the day or night (if necessary) and provide specialist consultation to pathologists.

Paediatric cases could also be transferred electronically to the Royal Children’s Hospital for expert interpretation especially in troublesome cases of suspected non-accidental injury.

**CT scanner at VIFM**

The new paradigm of imaging in clinical medicine and reports of the Virtopsy® technique in Switzerland spawned a desire for access to a CT scanner at VIFM. The concept was carefully considered over several years weighing the potential benefits against the fiscal cost and significant efforts required to install, integrate, staff and maintain a CT scanner in the mortuary. The major hurdle of institutional funding was overcome following support from the Victorian State Government’s Emergency Services Commissioner who was convinced of the scanner’s potential role in enhancing Victoria’s counter-terrorism capability following the 2002 Bali bombing.

After an exhaustive evaluation and tender process, a CT scanner was purchased and installed into the VIFM mortuary in April 2005. Since then all deceased persons or biological material admitted to the institute have been CT scanned on presentation. In contrast to the previously limited role that radiologists have had in forensic practice, pathologists immediately formed a partnership with the radiologist in order to navigate the challenges of this powerful new investigative tool. Adapting new technology to forensic practice indisputably has the potential to change some post-mortem procedures, but there was initial controversy over whether the autopsy’s invasiveness could actually be reduced or even replaced by CT scanning.

Following eight years of experience it can be stated with some conviction that CT is an established procedure at the VIFM and integral to the performance of the preliminary examination that is now enshrined in the 2008 Victorian Coroners Act. So fundamental is this integration that the recent major upgrade of mortuary facilities at VIFM mandated careful design to ensure that the CT scanner could be strategically located to enhance workflow.

**Impact on work practices at VIFM**

The CT scan is an indispensable ancillary tool in the everyday practice at VIFM. The equipment needed is expensive but robust. CT techniques provide high spatial anatomical resolution and have great contrast sensitivity, thus allowing accurate depiction and detection of metallic objects, air and blood. Bony structures are also elegantly demonstrated. Image data can be readily manipulated into three dimensional models using proprietary graphic software and workstations. This enables improved diagnostic interpretation and clear depiction of pathology to even relatively untrained observers. It is undoubtedly excellent at depicting or identifying traumatic injuries, intracranial/thoracic abdominal collections, abnormalities (e.g. pneumothoraces, ruptured abdominal aeurysms) and projectile paths. In cases that require an autopsy, CT scanning affords the ability to plan aspects of the procedure in advance by identifying the most appropriate approach to anatomical dissection, potential hazards, location of foreign bodies and, on occasion, foreshadowing the need to approach next of kin and the Coroner concerning organ and tissue retention prior to skin incision.
The CT scanner has arguably had the greatest impact in those situations where a full autopsy examination may not be performed at all. The pathologist, in the past, may have reasonably determined the cause of death by performing an external examination of the body and reviewing available documentation from a number of sources. These included the police summary of circumstances surrounding the death and medical notes from the deceased's clinical history. CT images of the deceased provide hitherto unavailable and non-invasive access to the internal organs providing an additional level of interrogation, garnering the pathologist’s confidence in stating the designated cause of death. Implicit in this approach is the desire to balance best practice in medico-legal death investigation and the requirements of the Coroner, next of kin and other legitimately interested parties.

The major deficiency of CT is an inability to separate the subtle intrinsic tissue densities of the viscera that equates to a failure to discern a substantial proportion of pathological processes in brain, chest and abdominal organs. In clinical practice this problem is addressed by the use of contrast agents, either ingested into the bowel or injected intravenously. These techniques are more difficult to implement routinely in the post-mortem setting.

The CT services at the VIFM have been in place since July 2005, and more than 40,000 deceased persons have been scanned. Image acquisition is remarkably rapid and within minutes, images are available to the pathologist on one of many desktop computers throughout the building (including within the mortuary). Proprietary thin-client technology enables this process and also supports sophisticated data manipulation. As a result CT imaging has rendered x-rays almost but not entirely obsolete. For example, radiographs are still preferred for identifying subtle fractures, particularly in children with suspected non-accidental injury or neck structures following suspected neck compression.

Forensic technicians have undergone training in CT scanner operation and image acquisition, and are now licensed by the Department of Human Services to operate the scanner. Forensic pathology staff, anthropologists and odontologists have received and maintain ongoing training in the analysis and reconstruction of images. In the normal CT diagnostic setting, only limited sections of the body are scanned, and the operator must reduce as far as possible the patient’s radiation exposure. In comparison, the forensic setting provides a unique environment in which there are no restrictions on CT dose. Thus radiation exposure to the deceased is many times higher than that used in the clinical setting, optimizing the quality of images obtained. Consequent to this increased exposure, the safety of forensic CT operators assumes a greater importance. For this reason operators must stay within designated shielded areas while scanning is in progress.

The scanner provides a wealth of hitherto unobtainable information that can be of importance in medicolegal death investigation. As with the adoption of any new technology, however, this paradigm shift presents challenges. At all times pathologists and radiologists must be aware of the seduction of new technology and resist being lured into a reliance on imaging at the expense of established and well-founded pathology principles in determining cause, mechanisms and manner of death. CT imaging may indeed fall short of the high
Heart disease or pulmonary thromboembolism. CT imaging thus can be disappointingly inadequate and importantly cannot support definitive diagnoses of many tumour types, identify subtle pathology requiring histopathological examination (for instance myocarditis), detect the presence (or confirm the absence) of drugs or toxins, or isolate specific microbiological pathogens.

**Odontology**

Forensic odontologists routinely use CT images to determine identity. CT findings in the jaws of the deceased can be viewed rapidly and based on the presence of dental hardware or unique dental morphology, cases can be triaged into those in which comparative assessment of antemortem dental radiographs or records might be useful and others requiring alternative procedures. This can be done non-invasively even in unusual physical conditions such as a body in a barrel or other container without the need to perform an unnecessarily time consuming and often technically difficult oral examination. Such a technique need only be performed if it is considered likely to yield a positive match based on the CT findings. CT can also be used to analyse complex facial fractures providing reconstructed images that are readily understandable by medical staff, legal teams and police.

**Anthropology**

Forensic anthropologists use CT to analyse human remains by way of interrogating disrupted body parts to detect bone fragments without the need for time consuming tissue dissolving techniques; a process known as “digital cleansing”. Reconstructed 3D CT images can also be used by anthropologists to better understand bone anatomy and pathology. These images are always available for review even years after the body has been interred - a process called “digital exhumation” allowing for timely release of the body or remains for disposal by the deceased’s family.

**Entomology**

Maggot masses are readily discernible on CT scans thus identification and localization of such masses in a deceased body are possible in a non-invasive manner using CT data. This may avoid the need to necessarily disrupt body parts or cavities in order to assist in the determination of time of death.

**Tissue bank**

CT imaging has a definite place in screening of deceased persons who may be suitable for postmortem tissue donation. For example, the identification of subtle chest trauma, not appreciable on external examination, removes the need for unnecessary approaches to next of kin for heart valve donation.

**CT imaging in the 2009 Black Saturday Victorian Bushfires**

The role of VIFM in Disaster Victim Identification (DVI) procedures is threefold: first, to determine the cause of death, and the circumstances surrounding the death; second, to aid investigators in the reconstruction of the incident via analysis of forensically relevant material and third, to aid the Coroner in determining the deceased’s identity.

Prior to the bushfire tragedy, it was envisaged that in the event of a mass fatality incident, CT would enhance the various roles of VIFM in the DVI procedures by ensuring that:

- whole bodies are rapidly and accurately scanned for evidence of foreign material and other distinguishing features;
- initial dental and anthropological analysis could be performed using CT data analysis rather than physical examination of the remains; and
- speedy processing of a large number of bodies would be beneficial to other investigating parties such as police and the victims’ relatives.

Protocols for the rapid CT imaging of bodies arriving at the mortuary in the aftermath of a mass disaster were developed and proved to be an important adjunct in the DVI process associated with Black Saturday. It provided useful information to scene police, pathologists, odontologists and anthropologists prior to autopsy by flagging likely findings including the presence of non-human remains. At the time of autopsy CT images assisted in the localization of identifying features in heavily disfigured or destroyed remains. Following autopsy retrospective review of images was undertaken for clarification of issues that arose at the time of pathologist case review or during phase 4 of the DVI process (i.e. reconciliation). Following the success of CT scanning at VIFM in this mass disaster, DVI administrators around the world (including Interpol) are exploring the incorporation of CT services into their disaster plans utilizing specialist radiologists with experience in postmortem imaging.

**Newer techniques**

Some new invasive CT techniques/protocols have been developed at the VIFM, including post-mortem whole body CT angiography (PMCTA) and postmortem CT-guided percutaneous biopsy (PMCTB). PMCTA allows sites of potential bleeding to be identified to the pathologist prior to autopsy allowing dissection techniques to be concentrated on the area of greatest concern. In some cases where autopsy is not to be undertaken, it is important for the pathologist to obtain small pieces of body tissue for histological analysis also known as targeted tissue sampling. Using CT guidance techniques it is now possible to sample virtually any organ or location in the body using only a tiny incision rather than full anatomical dissection.

**Use in the legal system**

The Victorian Coroners Act 2008 allows for a preliminary examination to be performed on cases admitted to VIFM. An important part of this process is CT scanning, indeed the Victorian Act is one of the first in the world (if not the first) that includes CT scanning in its text. This came about based on initial experience with routine CT scanning at VIFM and pathologists’ recognition of its usefulness in the process of determining the cause of death.
It is now not uncommon for reconstructed CT images from the VIFM to be used for supplementation and even replacement of body diagrams and photographs in judicial proceedings. Radiological expert evidence related to these images is increasingly being called upon for coronial inquests and criminal matters stemming from medico-legal death investigation at the VIFM.

Teaching role (local and international) and Research

Given the vast experience gained in post-mortem imaging there has been interest from overseas for fellows to attend VIFM for varying lengths up to 12 months to learn CT interpretation techniques. Radiologists and pathologists have come to the VIFM from Japan, Korea, Malaysia and Switzerland to gain experience and undertake research.

To assist in the training and education of local pathologists and radiologists in Australia and New Zealand, the first short course in postmortem CT interpretation was held in Melbourne at VIFM at the end of 2013 under the auspices of Monash University. It was oversubscribed and very successful and will become an annual event. Radiology teaching is an important component of the day to day education of registrars and residents who train at the VIFM.

There are many applications of CT technology that are yet to be explored. To that end there are ongoing research projects being undertaken through the University of Melbourne and Monash University.

International Society of Forensic Radiology and Imaging (ISFRI)

In recognition of the impact of imaging on death investigation, an international society has been formed which is based in Zurich. Radiologists and pathologists from the VIFM are active members and have been involved in presentations at the first two annual Con-

gresses as well as participating in workshops aimed at setting standards for the training in and conduct of postmortem imaging examinations.

The future

The deficiencies of CT, with particular regard to visceral resolution, can be addressed by the use of MRI because of its dramatically improved ability to differentiate normal from abnormal tissue. Introduction of MRI will not be an easy experience, partially due to the cost (twice that of CT), and also because of the difficulties of installing a very large magnetic field in a mortuary environment that is full of ferrous metal. Nevertheless, the Institute is looking to advance this cause and preliminary investigations into the introduction of MRI are in progress.

As the need for radiological expertise increases and more sophisticated interpretation is introduced, it is inevitable that specialised technical support (i.e. medical imaging technologists) and a full-time staff radiologist will be required.

Conclusion

The CT scanner at the VIFM has allowed a substantial cultural change in the conduct of forensic pathology practice at the Institute. Although its role has evolved over time as all participants have become more comfortable with its abilities and deficiencies, we are now certain that it is not "virtual autopsy" but rather one of the many scientific inputs into the autopsy process. It is clearly here to stay. The future looks bright for related areas of research and further applications of radiological imaging including MRI to the pursuit of accurate and timely medico-legal death investigation.

Dr Chris O'Donnell,
Consultant forensic radiologist

Following the success of CT scanning at VIFM in this mass disaster, DVI administrators around the world (including Interpol) are exploring the incorporation of CT services into their disaster plans utilising specialist radiologists with experience in postmortem imaging..”
THE GIFT

THE WORK OF THE DONOR TISSUE BANK OF VICTORIA (DBTV) HAS BEEN CELEBRATED WITH A BRONZE SCULPTURE BY MELBOURNE ARTIST BRUCE ESPLIN

The work of the Donor Tissue Bank of Victoria (DBTV) has been celebrated with a bronze sculpture by Melbourne artist Bruce Esplin. The Gift was unveiled by the Attorney General of Victoria, The Hon. Robert Clark MP at the VIFM on 17 April, 2014.

The photographer and sculptor is a passionate advocate for organ and tissue donation. As the former Victorian Emergency Services Commissioner, Bruce Esplin held executive positions in emergency management for more than 20 years. In recognition of his outstanding public and community service, he was awarded the Centenary Medal in 2001 and the Australia Medal in 2013.

Bruce Esplin's community work continues. He Chairs Regional Arts Victoria, and is a board member of the Melbourne Chamber Orchestra and Emergency Warning Systems. His sculpture represents the generosity of the act of tissue donation which is life changing for recipients. The DBTV provides Australian surgeons with safe and effective tissue grafts for transplantation in orthopaedic, cardiothoracic and reconstructive surgery and burn care. It is a public sector not-for-profit organisation.

The sculpture will be located outside the new Donor Tissue Bank of Victoria building in the VIFM complex at Southbank.
When you hear "NCIS" you may be forgiven at first for thinking of a team of special agents from the Naval Criminal Investigation Service that conducts criminal investigations involving the U.S. Navy. However, in an Australian context, the NCIS refers to the National Coronial Information System (NCIS).

The NCIS is a storage and retrieval system containing case file data from every death reported to an Australian or New Zealand Coroner, since July 2000 and July 2007, respectively. Deaths reported to a Coroner include accidental, unexpected or violent injury resulting death. Currently, there are approximately 255,000 cases stored in the NCIS.

The NCIS collects specific data about each death listed in the database including demographic information about the deceased, circumstances of the death including location, potential drug-involvement and other significant or contributing factors. This data is accessible to death investigators, researchers and government agencies. The data is comprehensive making it a leading resource for research and crucial in tracking mortality patterns for the prevention of injury and death.

NCIS data has made key contributions to public health and safety over the past 14 years. Examples include the development of self-extinguishing cigarettes - data about the number of fatalities caused by unintentional cigarette related fires (an average of 11 each year Australia wide) was sourced from the NCIS and provided to the NSW Fire Brigades in October 2006. This information was brought to the attention of the State and Federal Emergency Services Ministers, resulting in endorsement for a national mandatory standard for the manufacture of Reduced Fire Risk (self-extinguishing) cigarettes. This standard became Federal Legislation and came into effect in March 2010. Any cigarettes manufactured in Australia will self-extinguish if left inactive, making them less likely to cause fires if dropped or left unattended.

Awareness and policy implementation to reduce slow vehicle run-overs in children

In 2007, the Queensland Parliamentary Travelsafe Committee (QPTC) used data from the NCIS when investigating slow vehicle run-overs of children. The majority of these cases involve reversing in a driveway where children are playing behind the car. The data showed that an average of 9 children (up to the age of 5 years) each year were accidentally killed in such scenarios in Australia. The QPTC accordingly made a number of recommendations in order to reduce this number, including, new home builders in Queensland should be encouraged to install child-resistant fencing and self-closing gates/doors near driveways.

The Queensland Parliament endorsed the recommendations, and also reported that they would lobby federal authorities to have reversing sensors installed in all new cars. As a result, a report about deaths and injury associated with child driveway run-over deaths was compiled by the Australian Department of Infrastructure and Transport during 2012-2013, which relied on fatality data from the NCIS. The report was released and in 2013 the Federal Minister for Road Safety announced that Australia will be leading international research in to the effectiveness of vehicle reversing cameras.

These are two examples of the way in which data contained in the NCIS has been used to identify areas for concern and to prevent further injury and death. In 2012/2013 financial year, the NCIS business unit provided over 60 statistical reports to external agencies. Drug-related and Intentional Self-Harm deaths are the most commonly requested reports.

In addition to reports prepared by the NCIS unit for external agencies, researchers and death investigators with a statistical function or policy development role for public health and safety are encouraged to apply for direct system access. All applications for online access require approval by the NCIS Research Committee (NRC) and the Victorian Department of Justice Human Research Ethics Committee (JHREC). The access rules have been determined by the State and Chief Coroners of participating jurisdictions, and have been endorsed by the Standing Committee of Attorneys-General.

Once access is granted, authorised users can view NCIS case material via an online interface. Depending on access level, users can view data related to closed cases (including case reports where available) or access to non-identifying data. The NCIS is committed to providing comprehensive and quality assured coronial data to those who need it, while also protecting data integrity and individual privacy.

Dr Eva Saar
For more information see http://www.ncis.org.au/
Course Convenors:

Dr Chris O’Donnell
Consultant Forensic Radiologist, VIFM &
Adjunct Senior Lecturer,
Department of Forensic Medicine, Monash University.

Associate Professor
David Ranson
Forensic Pathologist, VIFM
Department of Forensic Medicine, Monash University

Forensic Short Course

Postmortem CT Interpretation

3 Day Course:
6th, 7th and 8th August 2014

Course Description
This intensive short course is designed and structured for forensic pathologists and registrars in training but is open to radiologists and radiology registrars with an established interest in forensic imaging.

It will consist of didactic lectures on the principles and practice of postmortem CT and the application of CT techniques to forensic pathology. There will be interactive sessions on the use of CT in triaging forensic cases as applied to the preliminary examination at VIFM and interesting radiological/pathological (radpath) correlations. Participants will also have the opportunity to perform image manipulation on a thin-client workstation and to tour the CT facility at VIFM.

Cost:
Registration fee is $800 + GST including all meals and refreshments as well as a course dinner on the Thursday evening.
Course Objectives:

At the end of the course the participants should:
- have a basic understanding of the physics and principles of CT scanning
- be confident in viewing postmortem CT images
- know the CT correlates of pathological artefacts of death
- be able to recognize forensically significant CT findings in all anatomical areas
- understand how to integrate CT findings into the work practices of a forensic pathologist
- be aware of newer postmortem CT techniques such as angiography and guided-biopsy
- be able to perform basic CT image manipulation on a thin-client workstation.

How to Register:

Details on how to enrol will be available on www.vifm.org in early 2014. Registrations are strictly limited to 30. For preliminary enquiries, please contact Rosalie Clementson, Course Administrator on rosalie.clementson@monash.edu

Location:


Application is currently underway for CPD points from RANZCR.

Preliminary Programme:

Day 1

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<td>Basics of CT</td>
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<td>Workstation applications</td>
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<td>Artefacts of death on PMCT</td>
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<td>PMCT and the preliminary examination</td>
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<td>PMCT in the brain</td>
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<td>Neuro application of PMCT for pathologists</td>
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<td>PMCT in the abdomen and pelvis</td>
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<td>PMCT guided biopsy - how do we do it?</td>
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<td>PMCTA - How do we do it?</td>
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Day 2

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<td>PMCT Angiography</td>
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<td>Pathologists’s perspective on PMCTA</td>
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<td>PMCT in the chest</td>
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<td>Imaging of stillbirth</td>
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<td>PMCT in paediatrics including NAI</td>
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<td>PMCT in disaster victim identification</td>
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<td>PMCT in forensic odontology</td>
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<td>PMCT in the MSK system, including spine</td>
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<td>Presentation of PMCT to court</td>
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<td>Coronial perspective on PMCT</td>
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Day 3

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<td>Interactive review of PMCT cases as part of the preliminary examination</td>
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<td>Interactive review of complex PMCT cases</td>
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<td>“Hands On” workstation experience</td>
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Meals and refreshments will be provided each day as well as a course dinner on the Thursday evening.

Specialist Trainers:

The faculty consists of VIFM radiologists, pathologists and odontologists including Professor Stephen Cordner, A/Prof David Ranson, Dr Chris O’Donnell, Dr Noel Woodford, Dr Linda Illes, Dr Sarah Parsons, Samantha Higgins, Helen Messinis, Dr Tim Cain, Dr Richard Bassed, Dr Michelle Fink, and Dr Jodie Leditschke.
What works?
Strategies for preventing sexual violence.
by Professor Rachel Jewkes

Speaker:
Professor Rachel Jewkes
Director of the Sexual Violence Research Initiative, South Africa

Internationally recognised expert on sexual violence Professor Rachel Jewkes will discuss effective measures for the prevention of sexual violence at the Graeme Schofield Victorian Institute of Forensic Medicine Oration.

Professor Jewkes is a public health physician and the Director of the Gender and Health Research Unit at the South African Research Council in Pretoria, South Africa. She is also the Secretary of the Sexual Violence Research Initiative and the Director of the global program called ‘What works to prevent violence?’

Globally a third of women and girls have experienced physical or sexual violence from an intimate partner. In some regions this prevalence is even higher.

Professor Jewkes will address the question ‘what works?’ in sexual violence prevention, and what can work in countries such as Papua New Guinea where the prevalence of use of violence is particularly high.

RSVP
When
Thursday 07 August 2014
5:30 - 6:45PM

Where
Melbourne Town Hall
Swanston Hall (Ground Floor)
90-130 Swanston Street
Melbourne VIC 3000

RSVP
This is a free public event but attendees must RSVP HERE or via our website at:
www.schofieldoration.org.au

Oration Dinner
The Oration will be followed by a banquet Dinner at 7pm in the Melbourne Town Hall. For more information and to purchase tickets visit:
www.schofieldoration.org.au

Supported by:
MONASH University
Department of Forensic Medicine
School of Public Health and Preventive Medicine

For more information, visit www.schofieldoration.org.au