Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
include obtaining samples for toxicology, biopsy of lesions, minimally invasive vascular access, and contrast enhanced imaging studies.

THE FORMATION OF A CARDIAC ARREST REGISTRY IN AUSTRALIA [END UNEXPLAINED CARDIAC DEATH (EndUCD) REGISTRY]

Sarah Parsons1,2, Elizabeth D. Paratz3,4,5, Andreas Pflaumer1,2,3,4,5,6,7,8,9,10, Dominica Zentner6,7,8,9,10, Natalie Morgan1,11, Tina Thompson1,2, Paul James3,4,5,9,10, Christopher Semarian1, Jodie Ingles12,13,14, Rosalind Case3,4,15,16,17, Jocasta Ball3,16,18, Karen Smith19,20, Dion Stub21,22,23, Andre La Gerche24,25, for the Australian EndUCD Registry

1Victorian Institute of Forensic Medicine, Melbourne, Vic, Australia; 2Department of Forensic Medicine, Monash University, Melbourne, Vic, Australia; 3Baker Heart and Diabetes Institute, Melbourne, Vic, Australia; 4Alfred Hospital, Melbourne, Vic, Australia; 5St Vincent’s Hospital Melbourne, Melbourne, Vic, Australia; 6Royal Melbourne Hospital Clinical School, Faculty of Medicine, Dentistry and Health Sciences, University of Melbourne, Melbourne, Vic, Australia; 7Royal Children’s Hospital, Melbourne, Vic, Australia; 8Department of Paediatrics, Melbourne University, Melbourne, Vic, Australia; 9Murdoch Children’s Research Institute, Royal Children’s Hospital, Melbourne, Vic, Australia; 10Agnes Ginges Centre for Molecular Cardiology at Centenary Institute, The University of Sydney, Sydney, NSW, Australia; 11Cardio Genomics Program at Centenary Institute, The University of Sydney, Sydney, NSW, Australia; 12Department of Cardiology, Royal Prince Alfred Hospital, Sydney, NSW, Australia; 13Faculty of Medicine and Health, The University of Sydney, Sydney, NSW, Australia; 14Royal Prince Alfred Hospital Clinical School, Faculty of Medicine, Dentistry and Health Sciences, University of Sydney, Sydney, NSW, Australia; 15Department of Epidemiology and Preventive Medicine, Monash University, Melbourne, Vic, Australia; 16Ambulance Victoria, Melbourne, Vic, Australia; 17Florey Institute of Neuroscience and Mental Health, Melbourne, Vic, Australia; and 18Department of Community Emergency Health and Paramedic Practice, Monash University, Melbourne, Vic, Australia

The End Unexplained Cardiac Death (EndUCD) Registry commenced in Victoria, Australia in April 2019. It is a multicentre cardiac arrest surveillance registry for patients aged 1 to 50 years. It is intended to expand into NSW and then other states of Australia. The key aims of the EndUCD Registry are to:

1) Provide a patient support resource, including website, patient-oriented information and streamlined referral process.
2) Create a research platform for advocacy and improving understanding of accurate rates of sudden cardiac arrest/death in patients aged 1–50 years old.
3) Create a genetic biorepository as a resource for future studies.
4) Provide a state-of-the-art resource for clinicians wishing to link cardiac arrest patients and families in with psychological support, comprehensive family screening and consideration of genetic testing.

This presentation will examine the initial formation of the registry and present initial data from the first 2 years of collection and examine the role of forensic pathologist and forensic services in such a registry.

BACKGROUND, TESTING METHODS, AND LABORATORY APPROACHES TO SARS CORONAVIRUS-2 (SARS-CoV-2) AND COVID19

William D. Rawlinson1,2, Sebastiaan van Hal1, Malinna Yeang1, Anna Condylios1, Zin Naing1, Jane-Phan Au1,2, Mariana Ruiz da Silva1,2, Charles Foster1,2

1Serology and Virology Division, NSW Health Pathology Microbiology, SEALS Prince of Wales Hospital, NSW, Australia; 2Schools of Women’s and Children’s Health, Medicine and Biotechnology and Biomolecular Sciences, University of New South Wales, Sydney, NSW, Australia; and 3Department of Microbiology and Infectious Diseases, NSW Health Pathology, Royal Prince Alfred Hospital, NSW, Australia

Introduction: A pandemic is an epidemic occurring worldwide, crossing international boundaries and affecting many people. The spread of SARS-CoV-2 from Hubei province in China globally has led to rapid changes in our approaches to diagnosis, with rapid use of molecular methods such as whole genome sequencing (WGS) to characterise mutations, and deployment of novel therapeutics including mRNA vaccines and monoclonal antibodies.

Methods: New methods for diagnosis, including WGS, and different approaches to emerging mutations in virus variants of concern (VOC) will be discussed.

Results and conclusions: Diagnosis now uses standard molecular methods including commercial and inhouse techniques, more recently rapid antigen detection, and research into rapid smartphone based nanoparticle assays. Laboratory practices of sample pooling, reflex testing using WGS, and workflow changes are now routine.

The use of rapid WGS techniques, and available Australian data, have informed assessment of the accuracy and utility of these methods in the diagnostic laboratory. Assessment of changes in PCR primer binding sites, and of the influence of how sequence data are assessed (Foster et al., in press) means accreditation and QA programs need to be continuously updated.

References
1. Bull RA, Adikari TN, Ferguson JM, et al. Analytical validity of nanopore sequencing for rapid SARS-CoV-2 genome analysis. Nat Commun 2020; 11: 6272.
2. Rockett RJ, Arnott A, Lam C, et al. Revealing COVID-19 transmission in Australia by SARS-CoV-2 genome sequencing and agent-based modeling. Nat Med 2020; 26: 1398–404.
3. Seemann T, Lane CR, Sherry NL, et al. Tracking the COVID-19 pandemic in Australia using genomics. Nat Commun 2020; 11: 4376.

CORONIAL CASES: SARS-CoV-2 INFECTION AND COVID-19

Linda Iles

Victorian Institute of Forensic Medicine, Melbourne, Vic, Australia

Victoria’s second wave of SARS-CoV-2 infections saw a number of reports of deaths from SARS-CoV-2 positive persons made to the coroner. Whilst COVID-19 deaths are natural and do not routinely fall under the coroner’s jurisdiction, these cases were brought to the coroner’s attention due to deaths
being unexpected and unexplained and subsequently being diagnosed as COVID-19 post-mortem, concerns around care in those dying with a known diagnosis of COVID-19, or co- incidental SARS-CoV-2 infection with a cause of death unrelated to viral infection. This had a significant impact on workloads at VIFM, ranging from changes in admission procedures, extensive viral testing, and contributions to contact tracing. Aspects of the management of these cases will be discussed, along with the pathological aspects of some of these presentations.

**VACCINATION DEATHS AND THE SAMOAN MEASLES OUTBREAK**

**Linda Iles**
*Victorian Institute of Forensic Medicine, Melbourne, Vic, Australia*

On July 6th 2018, two 1 year old infants died shortly after receiving the Measles Mumps Rubella (MMR) vaccine. Events over the following months amplified this tragedy. The investigation of these deaths will discussed, along with the events that culminated in an epidemic that resulted in the death of 83 people, predominantly children, in the Pacific nation.

**IS PORNOGRAPHY IMPACTING SEXUAL ASSAULT PRESENTATIONS?**

**Kim Farrington**
*Sexual Assault Resource Centre, Perth, Australia*

Pornhub is ranked the 9th most visited website in the world; 70% of visits to the site are on mobile devices; the average age an Australian boy first sees pornography is estimated to be 12 years old. Given that pornography is seemingly ubiquitous, is it influencing sexual assault presentations and how? This topic is explored using a clinical audit and case presentations.

**CLINICAL FORENSIC MEDICINE AND COVID-19 CHALLENGES: THE MELBOURNE EXPERIENCE**

**Janine Rowse, Nicola Cunningham, Jo Ann Parkin**
*Clinical Forensic Medicine, Victorian Institute of Forensic Medicine, Melbourne, Vic, Australia*

The rapidly evolving context of the COVID-19 pandemic necessitated profound modifications to the provision of healthcare services globally. The concomitant requirements of lockdowns and social distancing and their subsequent isolating effects had marked ramifications for vulnerable individuals at risk of violence. The experiences of conducting sexual assault forensic examinations of suspected and confirmed COVID-19 positive patients in Melbourne hospital COVID-19 hot zones are presented, including the development of a modified forensic examination protocol. Additional clinical forensic issues specific to the pandemic context are discussed, including forensic ‘mimics’ of COVID-19 symptoms, clinical forensic service adaptations during Melbourne’s second wave of community transmissions, and considerations of the impact of changes to service provision on the patient experience.

**EVIDENCE IN FORENSIC PRACTICE**

**Maria Nittis**
*Clinical Forensic Medicine, Victorian Institute of Forensic Medicine, Australia*

Evidence supporting much of clinical forensic medicine practice is deficient or dated. This presentation highlights the results from two local research projects which looked at various aspects of the sexual assault forensic examination.

1. Do they who slide first, slide best: Jurisdictions within Australia and internationally differ with regard to preference for who creates the smear from those swabs taken to find DNA from semen. This research sought to articulate the function of slide preparation in sexual assault and to identify whether slide preparation by the forensic examiner, at time of examination, was preferable to slide preparation by forensic laboratory staff, at a later date. It also provided a review of the limited research in this area and posed questions for potential future research.

2. Patient perception of forensic imaging: Historically, photography used in forensic documentation of injuries (especially genital injuries), sustained during an alleged sexual assault, has been controversial. This study explored the immediate and short-term experiential impacts of forensic photography from the victims’ perspective and supports the case for the routine use of forensic photography, with patient consent.

**SWIPE RIGHT: THE EMERGENCE OF TECHNOLOGY FACILITATED SEXUAL ASSAULT IN CHILDREN AND ADULTS**

**Janine Rowse**1,2, Siobhan Mullane2, Caroline Bolt1, Sanjeev Gaya1, Joanna Tully2
1*Victorian Institute of Forensic Medicine, Melbourne, Vic, Australia; and 2Victorian Forensic Paediatric Medical Service, Melbourne, Vic, Australia*

The use of technological platforms, such as social media and dating ‘apps’ to facilitate real-world social encounters between strangers is ubiquitous. Limited empirical data suggests there has been an increase in real-life contact sexual offences facilitated following people meeting online. We present the findings of a retrospective audit of a single clinician’s forensic examination caseload from an Australian metropolitan adult clinical forensic medicine service. Concerningly, despite extensive research into online grooming of children, there is also a dearth of empirical research characterising technology facilitated contact sexual assault in children, with little additional known about the circumstances of these alleged incidents. A 14-year audit from an Australian paediatric clinical forensic medicine service is also presented, with common emerging features to technology facilitated sexual assaults discussed. The authors propose further large-scale research in this rapidly evolving area, to lead to informed preventive efforts and targeted education interventions.

**THINKING FAST AND SLOW IN THE EVALUATION OF INJURY PLASIBILITY IN CHILD PROTECTION**

**Catherine Skellern**
*Child Protection and Forensic Medicine Service, Qld Childrens Hospital, Qld, Australia*