

South Island Seminar 2021

Rob Allan

Despite the fluctuating Covid alert levels, the 2021 South Island Seminar went ahead on Saturday 13th March at the Manawa Building, Te Papa Hauora Health Precinct, Christchurch. Following the year that was 2020, and the associated cancellation of the majority of face to face meetings, this year's seminar proved far more popular than originally anticipated, resulting in 243 physical registrations. Thanks to Zoom, we were also able to live stream the presentations to another 38 colleagues, mostly based in Auckland and the West Coast. It was certainly a challenge and a huge thanks must go out to Eddy van Til for his logistical and technical assistance. There was a full day lined up with 18 presentations across a variety of laboratory disciplines.

Session One – Chair Rob Allan

The first presentation of the day was from Chris Finlay, Point of Care Coordinator at Canterbury Health Laboratories. Chris took the audience through what Point of Care Testing (POCT) is and the situations where it can be appropriately used. After summarising the available tests and equipment, Chris explained how each day at work can be highly variable, covering off areas such as training, maintenance, troubleshooting and advice provision. The point of care standard (ISO 22870:2016) and the New Zealand Best Practice Guidelines for Point of Care testing are available to inform and guide any service provider. Not all operators appreciate the importance of Quality Control and device maintenance, especially if they have competing clinical priorities. Therefore, it is important to ensure strict training and recertification protocols are in place; when performed correctly, and with lab validated equipment, POCT results can be relied upon.

Caity Dalley, from Haematology at SCL Dunedin, took up the opportunity to train part time in flow cytometry a year and a half ago. Caity's presentation covered the basics of flow cytometry, their local instrumentation set up and its role in the timely and accurate diagnosis of haematological neoplasms. Caity encouraged audience participation, asking us to differentiate between reactive lymphocytes and blast cells on several slides; this illustrated how flow cytometry can aid microscopy, ensuring cells are correctly classified. Two brief case studies were presented, including one which introduced the relatively new entity of early precursor T-Cell acute lymphoblastic leukaemia (ETP-ALL).

Heather Hughes, from Immunochemistry at CSCL, outlined her personal experience of a recent EBV infection. Although primarily an infection of childhood, adolescence, or early adulthood, up to 10% of older adults remain susceptible to acute EBV infection. Heather stated that EBV in older adults is just uncommon enough to cause diagnostic problems. This appears to have resulted in those involved in Heather's care falling into a number of heuristic traps, which rapidly escalated to numerous investigations and culminating in an oncology appointment for possible cancer! If ever there was an example of V.O.M.I.T (Victim of medical imaging technology), this was it. In hindsight, everything identified was benign and could be attributed to either the EBV infection or patient age. Despite the scare, Heather was impressed with the speed at which the medical system worked, and the thoroughness of all investigations performed.

The CPD programme has changed from 2021 onwards and Jillian Broadbent, NZIMLS CPD and Membership Coordinator, gave an overview of the new programme. As of this year, all registered Medical Laboratory Practitioners (scientists, technicians, and pre-analytical technicians) who hold an APC must be enrolled in an approved CPD programme. The CPD

programme now runs over two years with each biennium being standalone and there being a minimum number of points required during each year of the biennium. There are 18 categories of CPD activities which are divided in to Substantive and General activities, with limits on each. A reflective learning document has been introduced to ensure the focus is on education and learning rather than just completing activities, and this is required for each activity claimed. Jillian demonstrated how to find the programme booklet and log points via the NZIMLS website. She is happy to be contacted should you need further information or guidance.

Session Two – Chair Linda Williams

This session began with a talk from Elaine Booker, CHL, titled "From Eeyore to Ice-picks." After establishing that everyone was familiar with who Eeyore is, Elaine launched in to a passionate and thought provoking presentation which covered current and recent events, history, quotes from Winnie the Pooh, John Kirwan, and others, all tied together by the topic of depression. Elaine noted that there is very little data on mental health in the medical laboratory profession but given the external and internal pressures across the workforce, it is important that we look after, and support, both ourselves and others. And please, seek help if necessary.

Terry Taylor, NZIMLS President, gave an insight into how the NZIMLS adapted to the challenges brought about by the Covid pandemic. In early March 2020 the decision was made to cancel the South Island Seminar, all meetings for the first half of the year, and the 2020 ASM. When the full lockdown commenced on 26 March the profile of the diagnostic laboratory sector was propelled into the limelight. NZIMLS employees started working from home and the executive kept in contact via regular Zoom meetings fitted around their differing lab shifts. Terry detailed his interactions with various Health Ministers and opposition Health spokespeople as he briefed them about the NZ laboratory environment, only to find that several resigned, or were sacked, not long following his meetings (for unrelated reasons). Throughout the year, the NZIMLS continually advocated for, and worked to raise the profile of, the profession at a government, MoH and health leadership level. On top of all this, business as usual had to continue as well as developing virtual educational meetings and the first ever virtual NZIMLS AGM.

Diane Whitehead and Charlotte Vanhecke, both from NZBS at the Christchurch Hospital Blood Bank, presented an overview of their response to the Christchurch Mosque Massacre on 15 March 2019. A slide show put together by Tian Gao continually scrolled through images from that day, both from within the blood bank and the wider hospital and Christchurch area. Diane and Charlotte shared their memories, and those provided by the team, of the challenges faced on the day. Not only were there technical challenges to ensure sufficient blood products were available, staff were also dealing with uncertainty around family/school situations and with the presence of armed police in the corridors requiring ID for all to get through.

We were fortunate to welcome Katy Taylor, a mortuary technician at the CDHB, to give an insight on the Christchurch mortuary response to the Christchurch massacre. Katy presented a powerful presentation that detailed the terrible events of 15 March 2019 and the subsequent processes undertaken by Mortuary and the wider team. The Disaster Victim Identification (DVI) process was under enormous pressure to be completed rapidly due to political pressure and the need to accommodate Islamic funeral traditions. The DVI process exists, and must be followed, to ensure all data is

collected and presented to the Coroner in support of a positive verification of identity, despite the resulting time delay in release of bodies to their loved ones.

Session Three – Chair Ruth Beeston

Following the lunch break, Leah Pringle from SCL Dunedin Haematology presented a case study detailing the challenges they had performing von Willebrand testing on a patient. The initial results obtained demonstrated a mismatch between antigen and activity levels which was unable to be resolved via dilutions. Once all potential pre-analytical and sample issues were excluded, the possibility of interfering antibodies was considered – the three broad categories of heterophile, anti-animal, and auto-antibodies were discussed. It is not always possible to identify or remove the source of interference on a particular sample and in this instance, an accurate vWF:antigen level was unable to be achieved. The recommendation was to retest using a different platform where possible.

A Massive Transfusion Protocol (MTP) is a collaborative effort between clinicians and the blood bank to provide a large amount of red cells and other blood products at once. Sarah Grant and Ramesh Tiwari, both from Te Nikau Hospital Laboratory in Greymouth, delivered a joint presentation around a recent MTP. The patient arrived at ED with a seemingly minor wound to the chest following a stone being flicked up while using a weed whacker. The patient's condition rapidly declined, 2L of fresh blood was removed via a chest drain and an MTP was initiated. Poor weather hampered efforts to get more blood product delivered from Christchurch. Once stabilised, the patient was transferred to Wellington for specialised care. Ramesh and Sarah detailed the challenges of working in an isolated region and the associated supply and patient transfer challenges, especially during periods of bad weather. Effective communication with the theatre team is critical, as well as debrief meetings and periodic MTP simulations.

Urmila Wati from CHL Ashburton lab delivered a case study centred on a patient with Paroxysmal Nocturnal Haemoglobinuria (PNH). This condition occurs as a result of a genetic mutation in the PIG-A gene in a stem cell in the bone marrow. The resulting red cell PNH clone lacks the normal protection from the complement system which can lead to intravascular haemolysis; not all patients present with classic haemoglobinuria which can make diagnosis challenging. Although a combination of laboratory tests can be used to aid diagnosis, flow cytometry is considered the most useful. Clinical categories of PHN, potential complications, and treatment options were all discussed. This patient was initially diagnosed in 2010 and despite a number of clinical complications over the years remains relatively well and is currently having two monthly blood monitoring.

Leonie Thorpe from Microbiology at CHL gave everyone cause to be concerned about almost all water activities! *Naegleria fowleri* is an amoeba that inhabits soil and warm freshwater environments. When infected water is introduced into the nose, the amoeba can attach to the back of the nasal passages and migrate across to the brain, where it proliferates and destroys brain tissue. This is called Primary Amoebic Meningoencephalitis (PAM); media headlines usually state "Brain-eating Amoeba." Symptoms are similar to bacterial meningitis and the organism is very difficult to identify in a Gram stain. The infection has a very high mortality rate with death usually occurring within approximately five days following the start of symptoms. Due to the rarity of the infection, very few scientists will have had first-hand experience identifying it. There were eight fatal cases in New Zealand between 1968-78 and an additional fatal case in 2000.

In addition to working at SCL Oamaru, Louise Nutbean also has a passion for writing. Louise wove together these two aspects to deliver a presentation that imparted a number of tips and tricks to ensure your writing (whether lab based or

otherwise) is effective. Being aware of who you are writing for, and what you are aiming to achieve, will aid in the production of clear informative instructions and manuals. Louise recommended having clear goals and deadlines, being consistent with punctuation and formatting, and always read, re-read aloud, and then get someone else to read and provide feedback before finalising any writing.

Session Four - Chair Heather Hughes

Trevor English, Privacy Officer for APHG, provided a comprehensive review of the Privacy Act and the changes that came into force on 1 December 2020. The Privacy Act 2020 controls how 'agencies' collect, use, disclose, store and give access to 'personal information.' Alongside the Privacy Act, there are codes of practice that modify the Act for specific areas – in the case of health (laboratories), this is called the Health Information Privacy Code (HIPC). The HIPC consists of 13 rules which suit the special circumstances around health information. Trevor provided examples of breaches, potential breaches and explained the requirements to report privacy breaches to both the Privacy Commissioner and the people affected. It is essential that all organisations are familiar with, and adhere to, the updated Act.

Mandy Watts, from Canterbury SCL, took the audience on a brief history trip detailing the evolution of front end processes, with a focus on auditing and troubleshooting, from the pre-quake days at Medlab South Christchurch through to the present day at Canterbury SCL. No matter where, or how, samples are received, they are all subject to the same strict labelling criteria and audit processes. Samples that are received incorrectly labelled, leaking, delivered in inappropriate containers, or otherwise compromised are passed on to the trouble-shooter for follow-up, with the majority being rejected and a request for a recollect issued. There are a small number of exceptions for precious samples but these need to be individually authorised by the technical departments and appropriate paperwork completed. It is far easier to capture issues when the sample is received than recalling results after they have been released.

It is hard to think that 2020 will be remembered for anything but the Covid-19 pandemic. Andrew Strathdee from Virology at CHL presented on the CHL experience of having to implement, and then rapidly upscale, testing amid a global pandemic. The need to increase testing necessitated new/additional equipment, the repurposing of some areas of the lab, careful stock management due to global shortages, and the creation of a Covid response team to help manage the increased workload. Andrew covered the transitions through different analysers, technologies and strategies employed to deal with the various lockdowns and surge testing. Andrew also noted that a consequence of the closed borders and isolation requirements is the near eradication of RSV and Influenza viruses, as they were not re-imported after the summer months (there were still other respiratory viruses circulating).

Judy Dolman, from SCL Queenstown, presented a case of extreme hypernatraemia. When hospital staff could not get a result on their i-STAT, they contacted the lab to advise the instrument was broken. There was no fault with the instrument and laboratory testing confirmed a sodium result of >194 mmol/L (RI 135-145 mmol/L). Extreme hypernatraemia is a relatively rare occurrence and can be fatal if the sodium level is not reduced. This patient had a complicated medical history and although the patient was transferred to a tertiary hospital ICU, and the electrolyte balance corrected, they remained unwell and subsequently died. Judy outlined the symptoms of hypernatraemia and considerations for treatment when reducing the sodium level.

Next up, John Sheard, NZIMLS Region 4 representative, recapped the events of the year and Covid impacts, and provided a brief update as to the happenings in the region.

John also announced that he will be stepping down from Council this year. He encourages others to look to joining or contributing to the Council, which he has found a very rewarding experience.

The final formality for the day was to invite Pam McTaggart from Roche to present the awards for the two best presentations by members of the NZIMLS. The award for best presentation jointly went to Ramesh Tiwari and Sarah Grant from Te Nikau Hospital Laboratory in Greymouth.

Katy Taylor from CDHB Mortuary received the runner up award. Following the close of the seminar, attendees enjoyed a social catch-up with their colleagues over some drinks and nibbles around the corner in the courtyard of the Pegasus Arms.

The South Island Seminar is a team effort and a massive thank you must go out to all the presenters, those who chaired the sessions, and the delegates who supported the meeting by attending. Additionally, a big thank you to the NZIMLS, Roche, and TaG Diagnostics for their sponsorship of the meeting.
