**POINT OF CARE ULTRASOUND TRAINING IN ED: THE CASE FOR EMPLOYING SONOGRAPHER EDUCATORS AT SUTHERLAND HOSPITAL EMERGENCY DEPARTMENT**

**SITUATION**

Point of Care Ultrasound (PoCUS) is on the rise.

It is a key skill for Emergency Physicians (EPs) supported by the Australasian College for Emergency Medicine (ACEM).

ACEM outlines its support for:

* 24hr availability of focussed ultrasound examinations in emergency departments
* Appropriate training and hands-on experience to perform and interpret limited bedside ultrasound imaging

ACEM standards require 3 objectives to meet credentialing standards:

1. Attend a credentialed course
2. Perform 3 directly observed scans in front of a suitably ‘credentialed’ supervisor (formative and summative assessments)
3. Maintain a logbook that is reviewed by a supervisor

ACEM also recommends standardised documentation of PoCUS scans as well as bimonthly audits of ultrasound examinations as part of the department’s quality improvement processes.

**BACKGROUND**

Focused, bedside ultrasonography has been proven in many different ways to benefit the patient, the clinician and the department. It provides a significant margin of safety when used to guide needle procedures, decreasing the complication rates of all manner of needle-guided procedures by a factor of 8. PoCUS helps the clinician make better diagnoses in the undifferentiated shocked patient, the breathless patient, and the patient presenting with acute abdominal pain. Being performed at the bedside, in conjunction with the standard history and physical examination, the clinician is immediately able to make these diagnoses leading to significantly shorter emergency department stays. It has been shown to reduce the need for more invasive investigations; saving time, money and radiation to the patient.

Out of the 15 Staff Specialists and 9 VMOs at Sutherland ED, only 2 are nationally credentialed (Kirsty Short and Anthony Van Assche hold the CCPU). Anna Holdgate is locally credentialed at Liverpool Hospital. Based purely on observation there are at least 5 scans being performed/day in our department.

No process exists to standardise the approach, documentation and review of these scans many of which are not even being saved for review. This means there is little ongoing departmental oversight of quality and assurance standards.

All of this must change if our practice of Emergency Ultrasound is to evolve.

**ENGAGEMENT OF CURRENT ED PHYSICIANS & TRAINEES AT TSH ED**

There is widespread interest from the consultant body to improve their ultrasound skills and become accredited providers of PoCUS. This was demonstrated by FACEM attendance at the three ACEM/ASUM credentialed ultrasound courses that were run at Sutherland Hospital earlier in the year and delivered by the Australian Institute of Ultrasound:

* Vascular Access, EFAST, AAA – June 24th (8 TSH FACEMs attended)
* Early Pregnancy and Biliary – June 28th (5 TSH FACEMs attended)
* Lung and DVT – August 12th (3 TSH FACEMs attended)

Departmental ultrasound activities:

* Appointment of a Clinical Lead in Ultrasound (CLU) who has established a relationship with the NSW Emergency Medicine Ultrasound Group (EMUGs) and other CLUs in the state.
* Initiation of an ultrasound online discussion group (‘Basecamp’) for ultrasound enthusiasts at TSH ED
* 3 monthly PoCUS talk given to new registrars when they start their term
* Agreement that the 2 CCPU accredited FACEMs will sign off scans for logbook purposes/summative/formative assessments
* Engagement of Katja Muller (Head Ultrasonographer) in the US credentialing process - she has agreed to review selected PoCUS scans performed by ED doctors
* Contact made with the application rep from GE and configuration of ultrasound presets and labelling options to optimise our imaging quality and improve user-friendliness
* Organisation of a 2 week trial of the Sonosite XPorte US machine in July 2016 which was well received by our frequent ED US users
* Involvement of Sutherland Hospital as a trial site for the UTEC online US training course

**ULTRASOUND TRAINING IN OTHER NSW HOSPITALS**

For years there has been no consensus as to how EPs should train in PoCUS. This is not just a state-based issue, but Australasia-wide. A NSW strategy document for ultrasound training is in its early stages of development following the most recent Emergency Medicine Ultrasound Group (EMUGs) event where the Clinical Leads had their inaugural meeting in September 2016. There was input from key stakeholders and representatives of the ACEM US Subcommittee.

There is currently a trend towards employing Sonographer Educators in the ED (SEEDs). Hospitals that currently do this include St George, Royal Northshore Hospital, John Hunter and Royal Prince Alfred. A database of SEEDs is in progress. There are a variety of funding models but most commonly this is achieved using FACEM TESL funds.

Individual FACEMS are also employing ED Sonographers privately to spend time training and accrediting them during their non-clinical time (Canterbury).

In addition to FACEM US training, popular registrar training opportunities exist in the form of ACEM recognised Special Skills Terms in Ultrasound. Trainees completing these terms achieve CCPU accreditation in 4-8 modules and are able to then assist with the departmental credentialing process. It also leads to local retention of ED trainees.

Hospitals that currently offer this include:

* Liverpool
* Campbelltown
* Wagga Wagga
* Sydney Aventist Hospital
* Royal Prince Alfred
* (The near future: Prince of Wales)

**SONOGRAPHER EDUCATORS IN ED (SEED):**

The role of the ED Sonographer and the renumeration process can be summarised below:

* General Sonographer (or cardiac sonographer, based on consultant demand)
* Paid per hour on a part-time employment basis (some paid as overtime from hospital’s own department) – rates around $70-75/hr (+GST)
* Funds paid to Sonographers through the collective Staff Specialist TESL funds
* The Sonographer assists in live tutorials, on the floor hands on education, supervision of ongoing scans, logbook credentialing
* Employed as a private contractor and in a ‘supervisor/educator’ role only
* He/She does not impact on patient care, nor does he/she perform and departmental scans that are clinically deemed necessary

For a more detailed description of this role please see the EMUGs working group document on the SEED.

**BENEFITS OF EMPLOYING SONOGRAPHER EDUCATORS IN ED AT TSH:**

*Short term*

* Expert supervision of FACEMs leading to:
  + Improved confidence
  + Improved quality of scans
  + Improved depth of understanding of US due to the depth and breadth of knowledges of ED Sonographers
  + Increase the number of FACEMs working towards US accreditation (the CCPU or equivalent)
* Improve the understanding of registrars and trainees in the role of ED ultrasound use
* Encourage registrars and trainees to sign up to an ASUM/ACEM accredited course and engage in a formalised US training process

*Longer term:*

* Increase the critical mass of accredited FACEMs present in the ED on any given shift
  + Aim for at least one US accredited FACEM available on each shift (EFAST and AAA to start with)
  + Uptake of additional CCPU modules as FACEMs improve in confidence (Basic Echo in Life Support, biliary, early pregnancy, DVT)
* Develop our relationship with the radiology/ultrasound department for further US initiatives (registrar teaching sessions, the development of a Special Skills Term for ACEM Advanced Trainees at Sutherland ED)
* Improved retention of Sutherland Hospital ED trainees

**RECOMMENDATIONS:**

A separate document ‘Flowsheet for the Process of TESL Use to Employ a SEED’ accompanies this document and is based on extensive discussion with other NSW hospital Clinical Leads in Ultrasound and their experience of what has been successful at their institutions.

**IMPLEMENTATION TIMEFRAME AND REVIEW DATES**

October 2016 – DMS agreement on the use of TESL for a SEED

December 2016 – Staff Specialist agreement

Jan/Feb 2017 – seek suitable ED Sonographer candidate

March 2017 – 6 month trial

April 2017 – assess standards, FACEM/Sonographer/key stakeholder survey

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**APPENDIX**

1. SUPPORTING INFORMATION available on request

ACEM ‘Policy on the Use of Focused Ultrasound in Emergency Medicine and Policy on Credentialing for Emergency Medicine Ultrasonography’, ASUM ‘CCPU guidelines’ and St. George ‘implementation of TESL funded Sonographer into ED’.

1. CONSULTATION PROCEDURES

Liase with Director of Medical Services, clinical governance, financial managers

Radiology: develop a memorandum of understanding “bedside ultrasound does not

replace formal ultrasonography”

Local sonographer base: interested parties/EMUG database