



### CSOP 031 – Ultrasound

Version No: 1.3

Effective date: 15/05/2023

#### APPROVALS

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Next Review Date:	May 2025		

#### HISTORY

<u>Effective Date</u>	<u>Version No.</u>	<u>Summary of Amendment</u>
April 2020	1.0	New SOP
April 2021	1.1	Amendments to location of equipment, and SOP phrasing.  Introduction of pneumothorax and traumatic tamponade indications. Update on training & COVID implications.  Reference to iPad vs iPhone use, and introduction of Best Practice POCUS governance statement.
October 2021	1.2	New Appendix: logbook and assessment process Update on training and Governance processes
March 2023	1.3	Update on Governance and review process



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### REFERENCES

Document Reference Number	Document Title
1	European Resuscitation Council Guidelines 2021
2	Best practice statement on recording and storage of point-of-care ultrasound examinations (BMUS Council)
3	Guidelines for the provision of intensive care services (FICM, June 2019)

### DEFINITIONS/ACRONYMS:

Abbreviations/Acronym	Definitions
TAAS	The Air Ambulance Service
SOP	Standard Operating Procedure
CSOP	Clinical Standard Operating Procedure
HEMS	Helicopter Emergency Medical Service

### ANNEX/APPENDIX

Document Reference Number	Document Title
Appendix 1	Specific clinical questions from the Standard Modalities
Appendix 2	Training
Appendix 3	TAAS logbook & training summary
Appendix 4	Saving images prompt sheet

#### 1. Purpose

This SOP defines the use of medical ultrasound at TAAS. Pre-hospital ultrasound has the potential to bring benefit to selected patients, accepting there's some controversy as to its clinical significance, and potential to prolong scene times if used indiscriminately.

#### 2. Scope

All aspects of ultrasound indication, training and governance are discussed. The details of how to undertake a focused ultrasound assessment of a patient is beyond the scope of this SOP.



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#### 3. Equipment

The Butterfly iQ ultrasound scanner is used by TAAS. Further information is available at <https://www.butterflynetwork.com/>



The scanner and ultrasound gel are stored in a protective Pelicase, in the lower inside pocket of the secondary bag. The TAAS iPad, which forms part of the ultrasound system must also be carried to scene by the duty crew. Duty crews should ensure that both the scanner and the iPad are charged as necessary as part of daily checks.

The ultrasound should be used with the iPad as the display interface whenever possible. Base iPhones have the Butterfly application installed for emergency use only.

#### 4. Indications for use of ultrasound

Ultrasound usage is at the discretion of the clinician managing the patient. Factors to be considered should include clinician experience with ultrasound, technical challenges relating to the patient/environment, and the potential for the scan to alter/guide management.

Use of ultrasound for the clinical applications stated in the Royal College of Emergency Medicine Level 1 system is supported by TAAS and will be explicitly covered in training (Appendix 2) and governance.

##### Standard Clinical Applications:

1. Focused Echocardiography in Life Support
2. Extended Focused Assessment with Sonography in Trauma (eFAST)
3. Ultrasound guided vascular access
4. Assessment of the Abdominal Aorta for Aneurysm

These are discussed further in Appendix 1.



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### 5. Other indications

Other indications are acceptable at the discretion of the operator's competency. For example, the assessment of undifferentiated shock states, volume status, endotracheal tube position verification, front of neck access landmarking, peripheral nerve blocks and assessment of cardiac output in the severely hypothermic patient, to name but a few. It is appreciated that TAAS' clinicians have significant experience in these and other more advanced ultrasound studies that could be appropriately utilised.

The operator needs to accept that any scanning outside of 'Standard Clinical Applications' (see CSOP 031 Section 4) bring additional personal professional responsibilities, as these will not be explicitly covered by TAAS training and governance.

### 6. Training

All clinicians using ultrasound should be qualified and experienced in its use. The basic standard is RCEM level 1 or equivalent. Colleagues can judge their level of training and/or equivalence themselves as TAAS recognises that some clinicians may have accreditation with other governing bodies including, but not exclusively; FUSIC/FICE, BSE etc. It is important that all clinicians that use ultrasound within TAAS, stay within the scope of their practice. TAAS intends to train our critical care paramedics to the standard of RCEM level 1 (Appendix 2). Additional ultrasound training opportunities relevant to our clinical context are being developed in order to train and maintain our scope of practice. If guidance is required, this can be sought from the TAAS ultrasound lead.

### 7. Governance

BMUS best practice states that all imaging, with the exception of training scans, should be recorded.

All TAAS Clinicians that perform an ultrasound scan, should ensure that the following actions have been performed:

- All images/clips should be saved to the scanner and uploaded to the Butterfly cloud-based encrypted storage system.
- TaasBase documentation should include a report of the ultrasound and any alterations made to the management of the patient.



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### 7.1 Uploading images/clips

This upload should only occur once safely on the ground and not in-flight to avoid interference with the aircraft systems. All uploads should be saved to the cloud with the following:

- TaasBase database number (inserted into the Patient ID section),
- PIN number of the operator.
- Date of the scan.

Cases will be stored for a minimum of 5 years.

### 7.2 Ultrasound Reports

Upon completing a TaasBase entry, the user will be directed to the drop-down menu of sentinel interventions to acknowledge that an ultrasound has been performed.

An email will then be received by the operator to prompt them to complete a report on TaasBase, as an addition to the note for the finalised case.

Reports must include at least:

- TAASBASE case ID (Patient ID in addition IF this case involved multiple patient contacts),
- TAAS clinician identifier,
- Scan application type (e.g. pelvis, lung or FAST),
- Findings,
- Complications if any, and subsequent action/recommendation.

A prompt sheet to remind crews of how to add the required data is attached in Appendix 4. This will be available in the Butterfly unit cases and on TAAS iPads / iPhones.

### 7.3 Training scans

It is encouraged that training scans should be stored on the Butterfly cloud with the patient identifiers as described above. It is not required for a report to be documented on either the Butterfly cloud or on TaasBase. The trainee should instead document a reflective report on their logbook (see Appendix 3), which can then be reviewed by their supervisor with the stored images/clips. Training scan reports must only be stored on TaasBase if verified by a qualified clinician.



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### 7.4 Review Process

The correct storage of ultrasound captures, along with the documented reports & outcomes recorded on TaasBase, will allow monthly review of ultrasound usage across TAAS. This will facilitate quality assurance processes, service improvement and educational opportunities that can be shared amongst the wider team.

A review for each scan will be performed by the clinical lead for ultrasound at TAAS, or by a designated expert in emergency ultrasound. In time, it may be that the amount of ultrasound scans performed, requires additional TAAS clinicians, that are appropriately qualified, to join the reviewing team.

Each review will be stored within the TAAS Sharepoint and patient details anonymized. They will each contain:

- Assessment of image quality (Likert scale 1-5)
- Assessment of Image Interpretation (Likert scale 1-5)
- Assessment of clinical impression and management, relevant to ultrasound findings (Likert scale 1-5)
- Type of scan performed
- Notes & detailed feedback, where required

### 7.5 Feedback

All of the reviews will be collated on a 'live' excel spreadsheet. Opportunities for learning will be sought within the review process and this will allow feedback to individuals, where required, or to the wider organisation. Feedback to the wider organisation may take the form of an update at M&M meetings or via the red-green system.

TAAS clinicians can also request feedback for their scans, which may be used as part of a logbook.

Training scans, that have been properly stored, will also be reviewed and the feedback from these will form part of their training logbook.

If hospitals require access to images, this should be submitted via a formal request to share patient information. Images must not be transferred without formal request and approval via the airbase manager.



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Governance process regarding the use of ultrasound within TAAS will be overseen by a TAAS ultrasound lead.

**End of Document**

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