BTS Training Standards for Pleural Procedures

Draft for review: October 2024

Introduction

Pleural procedures are core to the skill set of respiratory physicians. They are also performed by non-respiratory professionals in other medical specialities such as acute medicine, emergency medicine and critical care. Workforce developments in recent years have included the expansion of non-medical practitioners with a specialist interest in pleural disease, particularly within specialist nursing (including Consultant nurses), but also Advanced Clinical Practitioners (ACP) and Physician Associates (PA's) as integral members of the wider pleural team. This has led to a broader pool of healthcare professionals caring for patients with pleural disease who are required to develop practical skills in pleural procedures within their scope of professional practice.

Training for some pleural procedures is already embedded in various curricula but there is no specific framework available to allow confirmation of competence. Additionally, there is no agreed training standard in more advanced pleural procedures for respiratory physicians seeking to develop skills past those required for completion of training (CCT).

Current training curricula are based around individuals demonstrating various Capabilities in Practice (CiP's) to inform progression through and ultimately complete training programmes. These CiP's represent higher level learning outcomes describing responsibilities or tasks that are entrusted to a trainee once sufficient competence has been demonstrated. The adopted mechanism of moving through various levels of capability is based on well-established principles from the medical education literature (1-3). The British Thoracic Society has published a training standard for thoracic ultrasound (TUS) (4) which is now embedded within the respiratory curriculum and was designed to support other healthcare professionals wishing to gain skills in TUS by using an aligned CiP based framework for training.

Pleural interventions should be performed on the right patient, at the right time and in the right place. This usually means in an elective / semi-elective manner in a dedicated procedure suite and within usual working hours. However, emergency procedures are often necessary and may be performed by non-respiratory practitioners. Providing reliable access to suitably trained out of hours operators for pleural procedures is an ongoing challenge and only evident in minority of trusts in UK from recent BTS national organisational audit

(5). Harmonising training standards for all practitioners across various acute medical specialities including respiratory may help services in achieving this.

It is with this background that the BTS responded to a call from the pleural community to establish a new Training Standard for pleural procedures, relevant to all health care professionals. This should be seen as an enhancement to aspects of existing curricula and be supportive in giving clarity to learners and trainers about expectations for training and practice in pleural procedures.

Audience

This training standard will be of most relevance to those working in respiratory services, including but not exclusively:

- Respiratory physicians
- Respiratory specialty trainees
- Physician associates
- Consultant nurses
- Clinical nurse specialists
- Advanced clinical practitioners
- Advanced nurse practitioners

It will be also relevant to physicians and trainees in general (internal) medicine and may be useful to those colleagues working in acute, emergency and critical care medicine, who are involved in pleural services.

This training standard will be relevant to health care professionals working across the UK who are based in specialist centres, large acute trusts and small teams within district general hospitals.

Aims and scope

This Training Standard does not seek to replicate or reproduce information provided in other publications. The 2023 BTS Pleural Guideline provides the most up to date evidence-base on the investigation and management of pleural disease (6). In addition, the accompanying BTS Clinical Statement on Pleural Procedures provides concise guidance to clinicians in secondary care on safe clinical practice, patient selection, complication rates, consent process and troubleshooting guidance related to pleural procedures. (7).

The focus of this publication is on the how learners should demonstrate skills required to perform key pleural procedures.

This training standard does not set out the specifics of “how to do” any particular procedure but “how to train to do it”. It does define some specific behaviours (as core and individual procedural capabilities) that practitioners need to demonstrate for independent capability in performing any procedure. These should help learners in recognising important technical principles employed within “doing” any procedure and support trainers in directing those under their supervision. These would be the equivalent to the objectives described for each level of TUS operator in the TUS training standard.

This framework should support transfer of learning development between centres within training programmes, between different training programmes and critically between stages of training (e.g. IMT to ST).

Inclusions

This document thus seeks to define the requirements for achieving specific levels of capability in practice (CiP’s) in the following pleural procedures. These should apply to all professional groups without distinction. These are divided into primary and advanced pleural procedures. Primary procedures are those relevant to general respiratory medicine, General internal and acute medicine / critical care. Advanced pleural procedures are those which would be delivered by specialist teams / services.

Primary pleural procedures:

1. Diagnostic Pleural aspiration
2. Therapeutic pleural aspiration
3. Seldinger Intercostal drain insertion.

Advanced Pleural procedures

4. Blunt dissection (“surgical”) intercostal drain insertion.
5. Indwelling pleural catheter insertion.
6. Indwelling pleural catheter removal

7. Local Anaesthetic ("Medical") Thoracoscopy
8. Ultrasound-guided pleural biopsy.

Exclusions

This document is limited to the training required to perform local anaesthetic based pleural procedures. It does not seek to establish training required for surgical / general anaesthetic requiring pleural procedures, or those undertaken by interventional radiologists.

This document does not describe those competencies necessary to diagnose and manage patients with pleural disease, nor specifics of when a particular pleural procedure should be considered or performed as these are extensively covered in existing BTS guidance (6,7).

Similarly it is expected that practitioners should have sound working knowledge for the indications and contraindications for pleural interventions but specifics of these are not relevant to this document. Practitioners must be aware of and demonstrate understanding of protocols designed to maximise patient safety, in particular the use of ultrasound to guide all procedures for fluid, but again these are not directly relevant to this document and are well established and described elsewhere (4, 6-9) and will be detailed within any Local Safety Standards for Invasive Procedures (LocSIPPs).

Finally, this document does not describe how a pleural service should be configured or commissioned which is detailed elsewhere (5, 10, 11).

Methods

Under the remit of BTS Education and Training Committee (ETC) a Task and Finish Group was established. This Group was chaired by Dr Alanna Hare as part of her remit as Chair of the BTS ETC (Dr Hare chaired the ETC between 2019 and 2022) and Dr Andrew Stanton.

There was an open recruitment allowing all BTS members, from across the full multi-professional team, to apply for a place on the Group. Applications were reviewed by the chair. Declaration of Interest forms were completed by all those selected to join the Group, in line with the Society's Declaration of Interest Processes that are available on the BTS website.

The Group met initially to discuss the remit and scope of the document in May 2023. A further *TBC* number of meetings were held, with the majority of the work conducted by email.

The BTS ETC reviewed an initial draft in March 2024, and Chairs' action provided sign off for public consultation in *TBC*.

The Training Standard draft was available for public consultation for 4 weeks in October 2024. Specific stakeholder organisations were contacted directly and invited to contribute.

The Task and Finish Group considered all feedback, and the final draft was completed in *TBC*.

Definition of Capability in Practice (CiP) level descriptors for pleural procedures

The group agreed precise wording for the individual levels of capability that would apply to all procedures (see Table 1). The TUS training standard descriptors were used as basis for this, but the group felt some important additions were made to reflect what happens in the clinical environment in the delivery of pleural intervention, and in the consideration of patient safety.

The group agreed that important distinction was needed between Level 3 and 4 i.e. between performing a procedure with indirect supervision (supervisor not present in the room) and acting "unsupervised". The ability to demonstrate skills in acting as an "independent decision maker" and be able to deal with potential complications of the procedure has been stipulated before being entrusted to being able to undertake unsupervised practice (i.e. CiP4). We feel this addition will be particularly helpful for the multi-professional audience this standard is provided for.

This distinction is important in recognising that individuals may relatively quickly become capable of performing the procedure (such as currently an internal medicine speciality trainee "signed off" as being able to perform pleural aspiration) but this is very distinct from developing skill in pleural decision making to perform any procedure in the first place, particularly one which is associated with risk of severe harm (including death). This decision-making ability is core to independent practice. That entrustment decision will be informed by record of building the portfolio of evidence and further Direct Observation of Practical Skills (DOPS). Curricula generally require one DOPS to demonstrate unsupervised practice in practical procedures, but with regular confirmation of competence often required for Annual Review of Competency Progression (ARCP) progression. Pleural presentations have variability with resultant nuances in anatomical / practical approach to intervention. National audit data demonstrates a clear ongoing risk of harm from pleural intervention in the UK (5) and this document must serve to enhance the governance around pleural procedural safety for any health professional undertaking training. Accordingly, the group feels a stipulation that a minimum of 2 DOPS is required at the point an individual is entrusted to undertake a procedure with both indirect supervision and for independent practice. Requirement for two independent observers for

these DOPS has been made except for some advanced pleural procedures where there may only be one level 5 operator available

This document allows some checks and balances to be more clearly demarcated than at present within existing training curricula and is a critical consideration in relation to patient safety. We have not sought to describe at what professional level any "independent decision maker" should be as this should be agreed within local and or regional pleural services but for primary pleural procedures we would expect at least at registrar (St4+) / Band 7+ level and for advanced procedures usually Consultant / Band 8 level.

Core procedural capabilities

The group felt there were core pleural procedural skills (or capabilities) that should be described that are relevant to all procedures. These relate in particular to aspects of patient safety. Any learner must be able to demonstrate these core capabilities before entrustment at level 3 for any procedure. These are detailed in the boxes from page 12 onwards.

Individual procedural CiP pathways and procedural capabilities

CiP pathways for each individual procedure are provided in figures. Specific aspects of evidence that should be provided to allow progression within any procedural pathway by making of relevant entrustment decisions are detailed alongside individual procedural capabilities. Equivalent "rating" that is currently required by educational supervisors within existing e-portfolio is detailed for Primary pleural procedures.

Assessment of procedural skills should be made using the existing direct observation of procedural skills (DOPS) tool. Procedure specific DOPS forms for chest drain insertion are already available and generic DOPS forms are adaptable to most other pleural procedures.

It is recognised that some learners will seek to develop skills in a number of the primary pleural procedures in parallel to some degree rather than in a linear fashion. Accordingly, it is not mandated that independent practice in diagnostic aspiration is required before being able to undertake supervised practice in either therapeutic aspiration or seldinger chest drain insertion, but that ability to work with indirect (CiP level 3) entrustment is needed. For advanced pleural procedures independent practice (CiP 4) in some primary procedures is however required.

We support the position that individuals should receive simulation-based training in procedural skills to familiarise themselves with equipment and techniques in relation to primary pleural procedures before undertaking any procedure in the clinical environment.

Learners should record all of their procedural experience. This record should detail the granularity of the clinical scenario (eg complexity of pleural effusion on ultrasound, size etc), level of supervision undertaken, evidence of any complications and if so their management and by whom. This record alongside the trainers' own observations and those of others through DOPS will allow a holistic assessment of capability by the trainer. There is no evidence to indicate specific numbers that should be undertaken to demonstrate capability in any pleural procedure. most curricula have had indicative numbers removed, although GMC Portfolio pathways continue to specify these. Accordingly, we have not specified any indicative numbers within the capabilities in practice for any specific procedure.

The group did feel however that to support learners and trainers in planning and reviewing their experiential learning there was merit in exploring expert opinion on the minimum number of procedures a competent trainee would usually have undertaken. The methods and results of this exercise are provided in Appendix 1. There seems to be alignment in this data with previous survey data around numbers of chest drains felt necessary to demonstrate competence (12).

Ultimately therefore the decision by any trainer to grant a particular level of capability will be based on their global professional judgement of whether there is adequate evidence provided to support this. The precise definition of what constitutes "adequate" or "enough" in terms of number of procedures will vary between individual learners. Trainers cannot be seen to be obliged to grant capability based on numbers alone.

<u>Ultrasound capabilities relevant to advanced pleural procedures</u>

The BTS TUS training standard details specific objectives advanced and expert operators need to achieve. Many of these are directly relevant to advanced pleural procedures, particularly Ultrasound guided closed pleural biopsy (CPB). This includes being able to safely identify pleural thickening and differentiate pleural

thickening from other irregularities of the pleura (e.g. pleural plaques and pleural fat). Operators should be able to identify anomalous blood vessels through colour doppler vessel screening. Moreover, operators should have sufficient capabilities in performing procedures under ultrasound direct guidance (real time) and the operators should acknowledge CPB is recognised as a skill performed by "expert" level interventionalists on the BTS 2020 thoracic ultrasound training framework. As such, one would envisage operators have sufficient capabilities in performing more conventional pleural procedures (aspirations/chest drains)

Alignment with and implications for existing curricula

Individual curricula must determine what level of capability in any specific procedure should be required at certain training points and this document seeks to support trainees and trainers in their progression.

The current respiratory medicine curriculum (2022) (13) requires respiratory trainees to achieve confirmation that they are "competent to perform pleural aspiration and intercostal tube placement unsupervised" by end of ST4 and ST5 respectively. Indwelling pleural catheter requires only skills lab or satisfactory supervised practice by end of ST7. We believe current speciality training programmes should allow trainees to gain CiP 4 in diagnostic / therapeutic pleural aspiration and Seldinger chest drain insertion using this training standard by these same timepoints.

We are mindful that, based on changing practice around pleural procedures and updated guidance (6), specialist pleural services in the UK have evolved over recent decades. Firstly, evidence-based practice (BTS guidelines) support more ambulatory pathways for diagnosis and treatment of patients, with resultant shift of patient population away from the general medical in patient ward base. Secondly, there is a drive to reduce out of hours procedural intervention in non-critical situations. Configuration of these services means training opportunities in primary pleural procedures are frequently diverted towards subspeciality clinics where possible. Consequently, pleural services do not have the capacity to provide high level of training in primary pleural procedures generally beyond respiratory speciality trainees (which may include IMY3 doctors based in respiratory medicine). Intercostal drain insertion has for some time presented concern as an appropriate core procedural skill for physicians (14). This group therefore believes changes to the IMT curriculum are needed.

Current Internal medicine stage 1 curriculum (applicable to IMY1-3) (15) requires trainees by end of IMY2 trainees to be competent to perform diagnostic pleural aspiration for fluid and aspiration for pneumothorax

unsupervised. For diagnostic pleural aspiration, we have set a standard for achieving independent practice (i.e. CiP level 4) that requires practitioners to demonstrate ability to act as an independent decision maker and to deal with complications of the procedure. We have outlined that evidence to support entrustment at this level includes completing a logbook detailing at least 10 independently performed procedures in relation to a variety of clinic contexts including more complex effusions.

We believe this is an appropriately high standard for a procedure (which is not without risk) but feel this is a standard that will not be possible for IMY trainees to achieve. Furthermore, we would argue it is not necessary for this level of capability to be specified as there will always be some form of indirect supervision of these doctors in the clinical environment (often within the hospital) and achieving capability at Level 3 CiP in this procedure for GIM trainees should still allow appropriate level of care delivery. Therapeutic aspiration for fluid is not detailed as requiring any specific competence requirement in the IM curriculum.

Regarding competence for chest drain insertion, current Internal Medicine stage 1 curriculum (applicable to IMY1-3) requires trainees to demonstrate competency in a "skills lab" or to achieve "satisfactory supervised practice" in intercostal drain (separately detailed for pneumothorax and effusion". The number of drains being inserted for pneumothorax is decreasing over time (16) with guidelines recommending the conservative or ambulatory management of primary spontaneous pneumothorax as options (6). Achieving supervised practice (beyond skills lab performance) is therefore increasingly challenging (if not impossible) for non-respiratory trainees and we would support review of this requirement. There will be similar issues around training opportunities in emergency medicine and we hope this training standard will also be valuable in setting training requirements in this speciality.

It is also important to acknowledge that it is not feasible, or required, for all IMTs to gain competence in performing thoracic ultrasound which is a mandatory pre-requisite before any of these procedures (except in pneumothorax).

The BTS would support review of the IM training curriculum by working with the IMT SAC, RCP and other relevant stakeholders to consider future curricula changes. We would hope this would support adoption of these CiP pathways which we feel stipulate more realistic and appropriate targets for IM training in the context of available training opportunities and how current pleural services are configured.

Making of entrustment decisions

Entrustment decisions at levels 1-4 for all primary procedures should be made by the educational supervisor, or by any practitioner with CiP 5 entrustment for the relevant procedure. For advanced procedures and for any CiP 5 entrustment decision, this should be made by the local trust pleural procedural training lead or pleural service lead.

Existing practitioners

Existing practitioners will not be expected to gain formal sign off but will be able to establish their current level of practice by agreement at local level with the trust pleural procedural lead / pleural service lead.

Maintenance of Capability

Recording and evidencing of ongoing capability for all practitioners should form part of annual appraisal or ARCP, including peer review of logbook of procedures performed, complications and onward referral.

Maintenance of such documentation is responsibility of the practitioner and should be reviewed annually within existing appraisal structure and where necessary review by trust pleural lead. In some situations (e.g. long gaps between cases), additional supporting evidence (e.g., DOPS) or additional numbers to confirm capability may be required. For healthcare professional returning after a period away from practice (e.g., maternity leave, prolonged absence or research out of training), it is important practitioners check their level of capability with educational supervisor where necessary assisted by the local pleural procedural / service lead in the trust into which they are returning to work. This will help facilitate a supported return to work if required.

With the exception of ultrasound guided pleural biopsy this standard does not stipulate an indicative number of procedures for currently established practitioners to perform to confirm maintenance of capability. For existing practitioners there should be local agreement depending on service requirement, regarding what practitioners need to demonstrate ongoing capability. This will be procedure dependent and also dependent on the CiP level an individual is seeking to maintain but use of high-fidelity simulation may be helpful to support this.

Finally we recommend local services consider utilising a recently developed audit tool as part of governance procedures to ensure robust systems are in place where individuals are undertaking pleural procedures with indirect supervision - the “Cappuccini Test” (17). This has been developed in anaesthetic training and is best applied in situations where clearly defined procedural lists are occurring but could be readily adapted to apply to areas where ad-hoc procedures may be undertaken.

Document review

This document is the first BTS Training Standard for pleural procedures. Given the implications this will have for training and service delivery it will undergo an early review by mid-2025, with anticipation that further reviews will be needed every 3–5 years. This will be overseen by the BTS Education and Training Committee. All stakeholders involved in the creation of this document will be included in this review process. Feedback is also welcomed via email to bts@brit-thoracic.org.uk.

Table 1 – CiP level descriptors for pleural procedures

Level descriptors	**Descriptor***
Level 1	Entrusted to observe only – may not perform the procedure
Level 2	Entrusted to perform the procedure (including gaining informed consent) with **direct (proactive)** supervision **present in the room at the bedside.**
Level 3	Entrusted to perform the procedure (including gaining informed consent) with **indirect (reactive)** supervision: The trainee may provide the intervention when the supervising clinician is **not physically present in the room**, but is available by means of telephone and/or electronic media to provide advice, **and can attend at the bedside if required to provide direct supervision.** N.B. **The decision to perform procedure must be agreed with an appropriately trained clinician.**
Level 4	Entrusted to perform the procedure (including gaining informed consent) unsupervised and able to **act as an "intervention decision maker" for relevant procedure. Able to deal with potential complications of the procedure.**
Level 5	Entrusted to supervise and train others in the procedure

CiPs and procedural capabilities

Core Pleural Procedural Capabilities

The core capabilities which learners should be able to demonstrate in relation to each of the specific pleural procedures are shown below.

Core capabilities for all procedures

- Understanding of the indications for the procedure.
- Ability to plan, prepare for, undertake and record any procedure in line with any Local Safety Standards for Invasive Procedures (LocSSIPs).
- Ability to obtain informed consent for the procedure
- Appropriate skin cleaning technique.
- Ability to infiltrate local anaesthetic appropriately to pleura to enable the relevant pleural procedure.
- Ability to make skin incisions appropriate to the procedure being performed.
- Maximised attempts at maintaining asepsis during any procedure.
- Recognition and communication of appropriate post procedure advice (including post procedural checklist) and management to the healthcare team and patient.
- Recognition of situations with significant complexity where either colleague involvement or onward referral is required.
- Recognition of potential complications of the procedure and an ability to explain how these should be managed (and, where relevant, when to involve other clinicians).

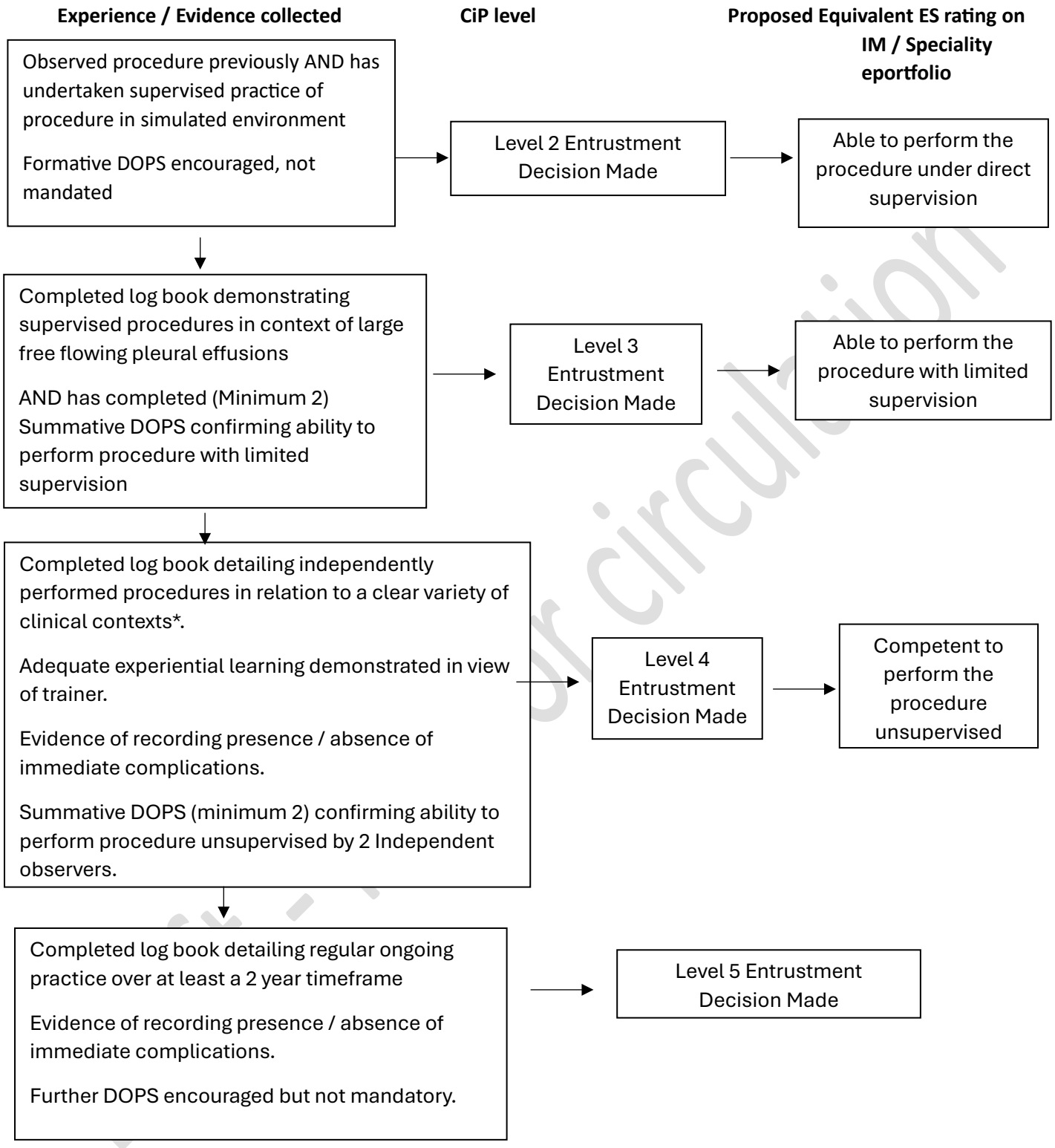
Further specific detail on individual procedures is provided below.

Diagnostic Pleural Aspiration

In addition to core capabilities, practitioners with CiP level 3 entrustment for performing diagnostic pleural aspiration will be able to demonstrate the ability to perform the skills shown in Box 1 (below).

Enter the pleural space competently with an appropriately sized needle and aspirate pleural fluid.
Complete aspiration of fluid by advancing the needle to a safe depth within the pleural space
Obtain an appropriate volume of fluid for analysis dependent on the clinical situation.

Pleural Procedure Capability in Practice – Diagnostic Pleural Aspiration



Level 1 Entrustment evidence not applicable

*(to include effusions of moderate size, i.e. at least 2cm maximum depth extending over 2 interspaces and also where evidence of septation on ultrasound)

Therapeutic pleural aspiration

In addition to core capabilities, practitioners with CiP level 3 entrustment for performing therapeutic pleural aspiration will be able to demonstrate the ability to perform the skills shown in Box 2 (below).

- Can complete aspiration of pleural fluid by advancing the device to a safe depth within the pleural space
- Are able to competently advance any aspiration kit catheter into position for drainage of fluid without its kinking
- Obtain an appropriate volume of fluid (or air) dependent on the clinical situation and to not exceed recommended limits.

Pleural Procedure Capability in Practice – Therapeutic Pleural Aspiration

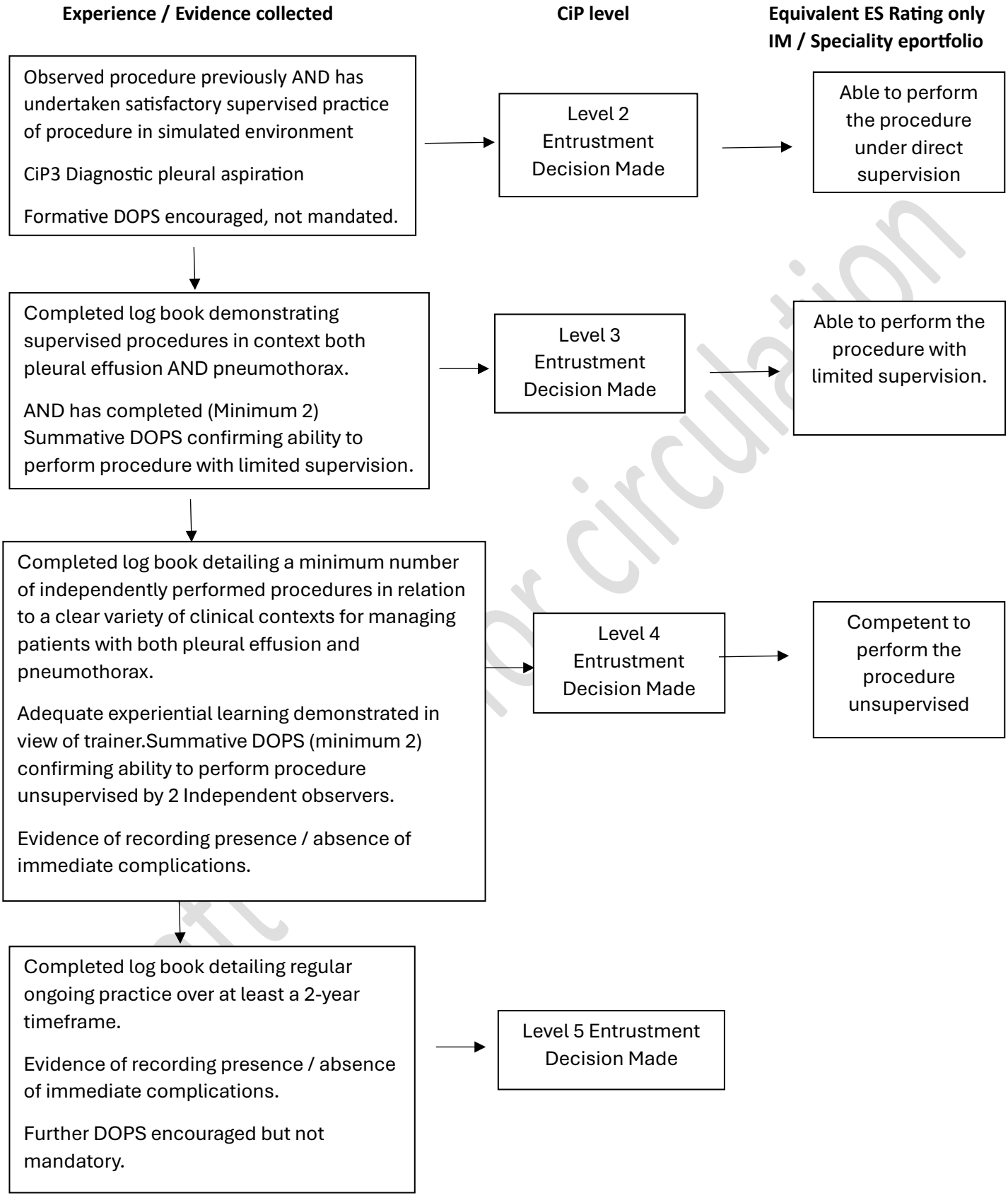
Experience / Evidence collected	CiP level	Equivalent ES rating only IM / Speciality eportfolio
Evidence that health care professional has observed procedure previously AND has undertaken satisfactory supervised practice of procedure in simulated environment CiP 3 Diagnostic Pleural aspiration Formative DOPS encouraged, not mandated	Level 2 Entrustment Decision Made	Able to perform the procedure under direct supervision
Completed log book demonstrating supervised procedures in context of-pleural effusion +/- pneumothorax AND has completed (Minimum 2) summative DOPS confirming ability to perform procedure with limited supervision.	Level 3 Entrustment Decision Made	Able to perform the procedure with limited supervision
Completed log book detailing independently performed procedures in relation to a clear variety of clinical contexts*. Adequate experiential learning demonstrated in view of trainer.Evidence of recording presence / absence of immediate complications. Summative DOPS (minimum 2) confirming ability to perform procedure unsupervised by 2 Independent observers.	Level 4 Entrustment Decision Made	Competent to perform the procedure unsupervised
Completed log book detailing regular ongoing practice over at least a 2 year timeframe Evidence of recording presence / absence of immediate complications. Evidence of variety of clinical context Further DOPS encouraged but not mandatory	Level 5 Entrustment Decision Made	

Seldinger Intercostal Drain Insertion

In addition to core capabilities, practitioners with CiP level 3 entrustment for performing Seldinger intercostal drain insertion will be able to demonstrate the ability to perform the skills in Box 3 (below).

- Enter the pleural space with an appropriately sized Tuohy needle and syringe and aspirate the pleural cavity contents (air or fluid) by advancing the needle to a safe depth within the pleural space.
- Pass the guidewire into the pleural cavity to an appropriate length and ensuring it remains secure on withdrawing the Tuohy needle.
- Safely dilate tract for drain without any unnecessarily deep advancement into pleural space.
- Insert the Seldinger chest drain to the appropriate depth relevant to the clinical situation, allowing guidewire removal.
- Use an appropriate securing method i.e. suture and appropriate dressing.
- Attach the Seldinger chest drain to appropriate tubing leading to an underwater seal drain or digital drainage suction unit eg Topaz.

Pleural Procedure Capability in Practice – Seldinger Intercostal Drain Insertion



Level 1 Entrustment evidence not applicable

Blunt dissection intercostal drain insertion

In addition to core capabilities, practitioners with CiP level 3 entrustment for performing blunt dissection surgical chest drains will be able to demonstrate the ability to perform the skills outlined in Box 4 (below).

- Safely perform blunt dissection allowing entry to the pleural space using curved/straight artery forceps.
- Insert the drain to the appropriate depth and (where relevant) trajectory for the clinical situation.
- Use an appropriate securing method i.e. suture and appropriate dressing.
- Attach the chest drain to appropriate tubing leading to an underwater seal drain or digital drainage suction unit eg Topaz.

Pleural Procedure Capability in Practice – Blunt dissection (''surgical'') chest drain

Experience / Evidence collected	CiP level
At least 2 Observed procedures AND has undertaken supervised practice at a simulated session. CiP4 Diagnostic pleural aspiration	Level 2 Entrustment Decision Made
Completed log book demonstrating supervised procedures Completed at least 2 Summative DOPS confirming the ability to perform the procedure with limited supervision.	Level 3 Entrustment Decision Made
Completed logbook detailing independently performed procedures in relation to a variety of clinical contexts* Adequate experiential learning demonstrated in view of trainer.Evidence of recording presence/absence of immediate complications. Summative DOPS (minimum 2) confirming ability to perform procedure unsupervised by 2 Independent observers.	Level 4 Entrustment Decision Made
Completed logbook and regular ongoing practice over at least a 2 year timeframe. Evidence of recording presence / absence of immediate complications. Further DOPS encouraged but not mandatory.	Level 5 Entrustment Decision Made

Level 1 Entrustment evidence not applicable

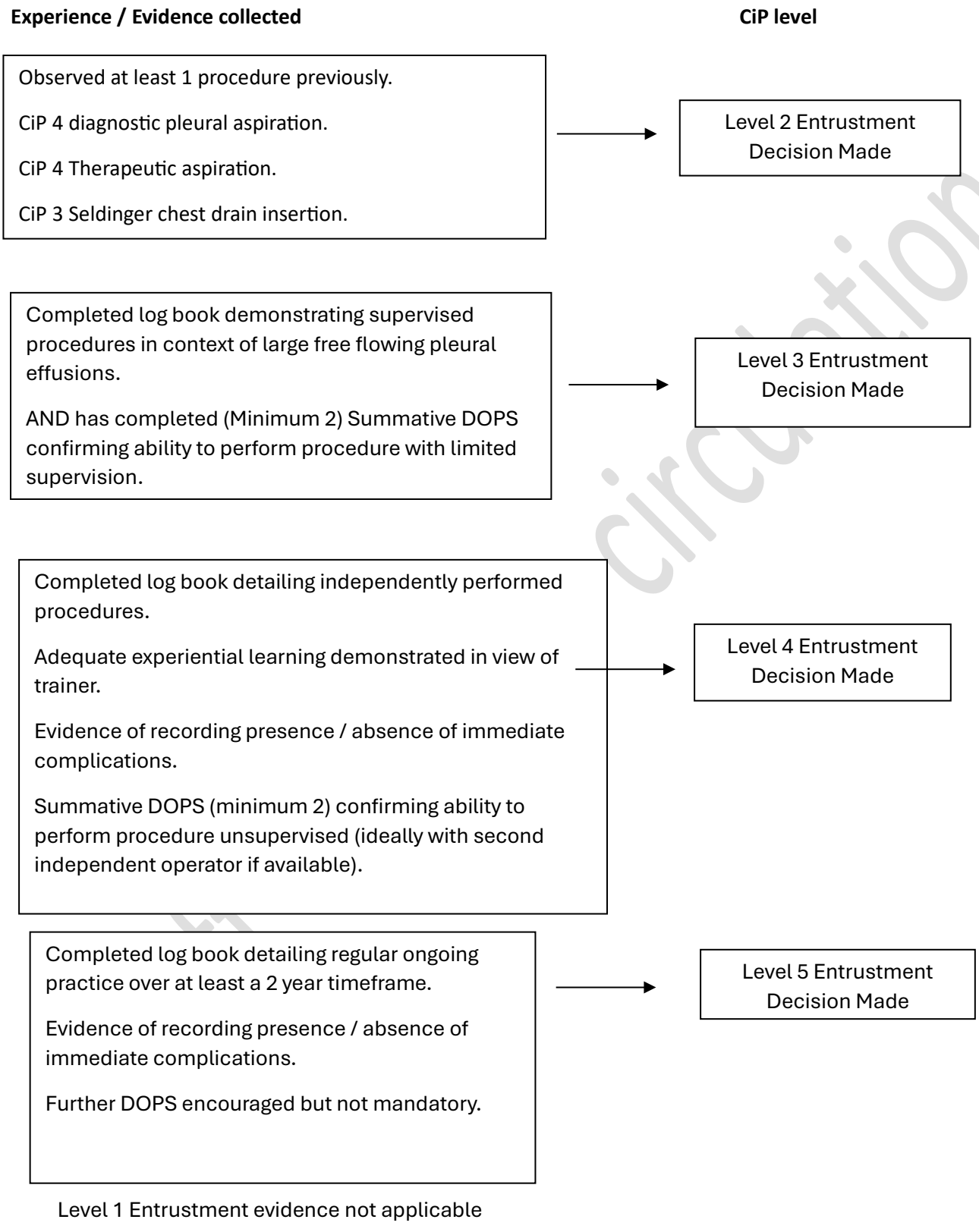
Evidence of emergency and/or elective procedures in the appropriate clinical settings (e.g. blunt dissection drain inserted during medical thoracoscopy/pleuroscopy or thoracic surgery) excluding trauma.

Indwelling pleural catheter insertion

In addition to core capabilities and those for seldinger drain insertion, practitioners with CiP level 3 entrustment for performing indwelling pleural catheter insertion will be able to demonstrate the ability to perform the skills shown in Box 5 (below):

- Appropriately create a subcutaneous tract using either blunt dissection or an introducer.
- Advance the introducing sheath into pleural space appropriately to facilitate completed feeding of IPC into pleural space.
- Employ controlled splitting and removal of introducing sheath such that residual IPC in situ is well placed and not kinked in subcutaneous tissues.
- Once catheter inserted, insert sutures and handle/dress catheter appropriately.

Pleural Procedure Capability in Practice – Indwelling Pleural Catheter Insertion



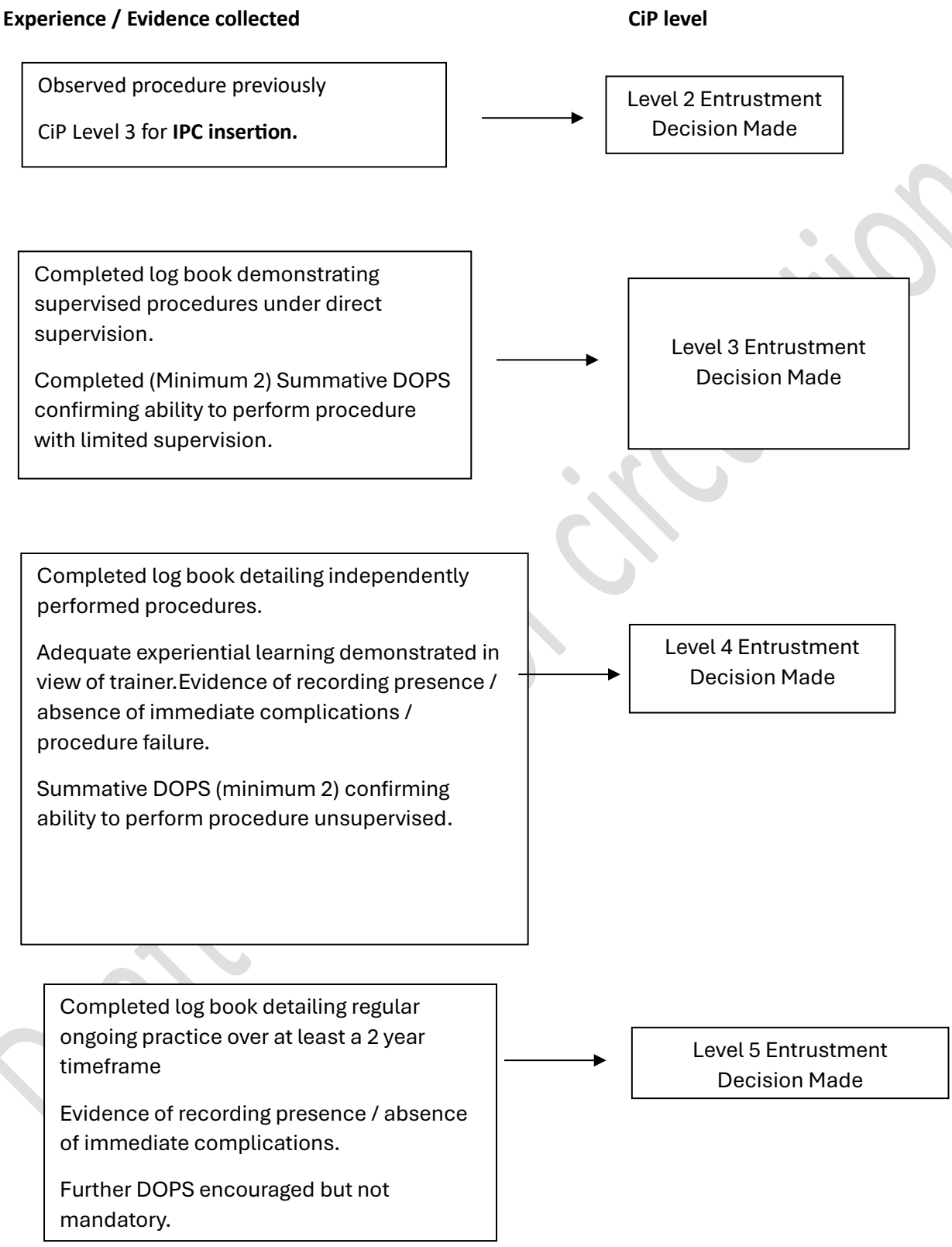
Level 1 Entrustment evidence not applicable

Indwelling pleural catheter (IPC) removal

In addition to core capabilities, practitioners with CiP level 3 entrustment for performing indwelling pleural catheter removal will be able to demonstrate the ability to perform the skills outlined in Box 6 (below).

- Infiltrate local anaesthetic around IPC exit site and along subcutaneous tract to level of cuff.
- Safely blunt dissect around IPC cuff to free it from subcutaneous tissue.
- Remove intact pleural catheter and close exit site wound appropriately.
- In cases where IPC removal not possible, discuss options with patient (i.e. leaving distal portion of catheter in situ, with suitable follow up).

Pleural Procedure Capability in Practice – Indwelling pleural catheter (IPC) removal



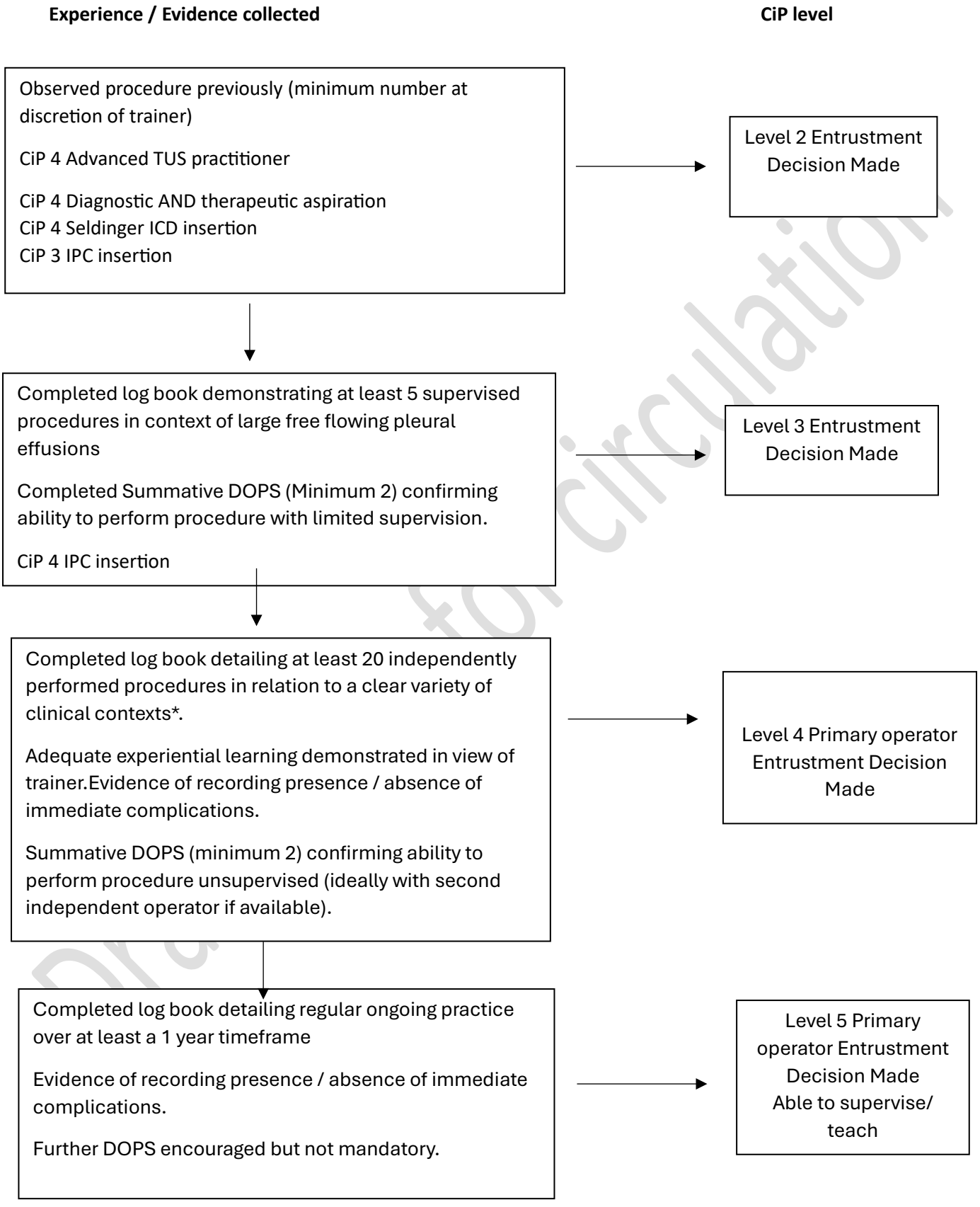
Level 1 Entrustment evidence not applicable

Thoracoscopy

In addition to all relevant core procedural capabilities, practitioners with CiP level 3 entrustment for performing local anaesthetic thoracoscopy will be able to demonstrate the ability to perform the skills outlined in Box 7 (below).

- Recognise when "dry" thoracoscopy may a feasible option and referral to appropriate operator if necessary[18].
- Appropriately perform blunt dissection to safely enter pleural space to facilitate port insertion.
- Suction of any fluid from the pleural space.
- Undertake full (where feasible) visual inspection of visceral and parietal pleural surfaces.
- Correctly recognise normality and appropriately describe abnormal appearances.
- Undertake biopsies of parietal pleural abnormalities with appropriate and safe technique.
- Perform talc poudrage where clinically appropriate.

Thoracoscopy

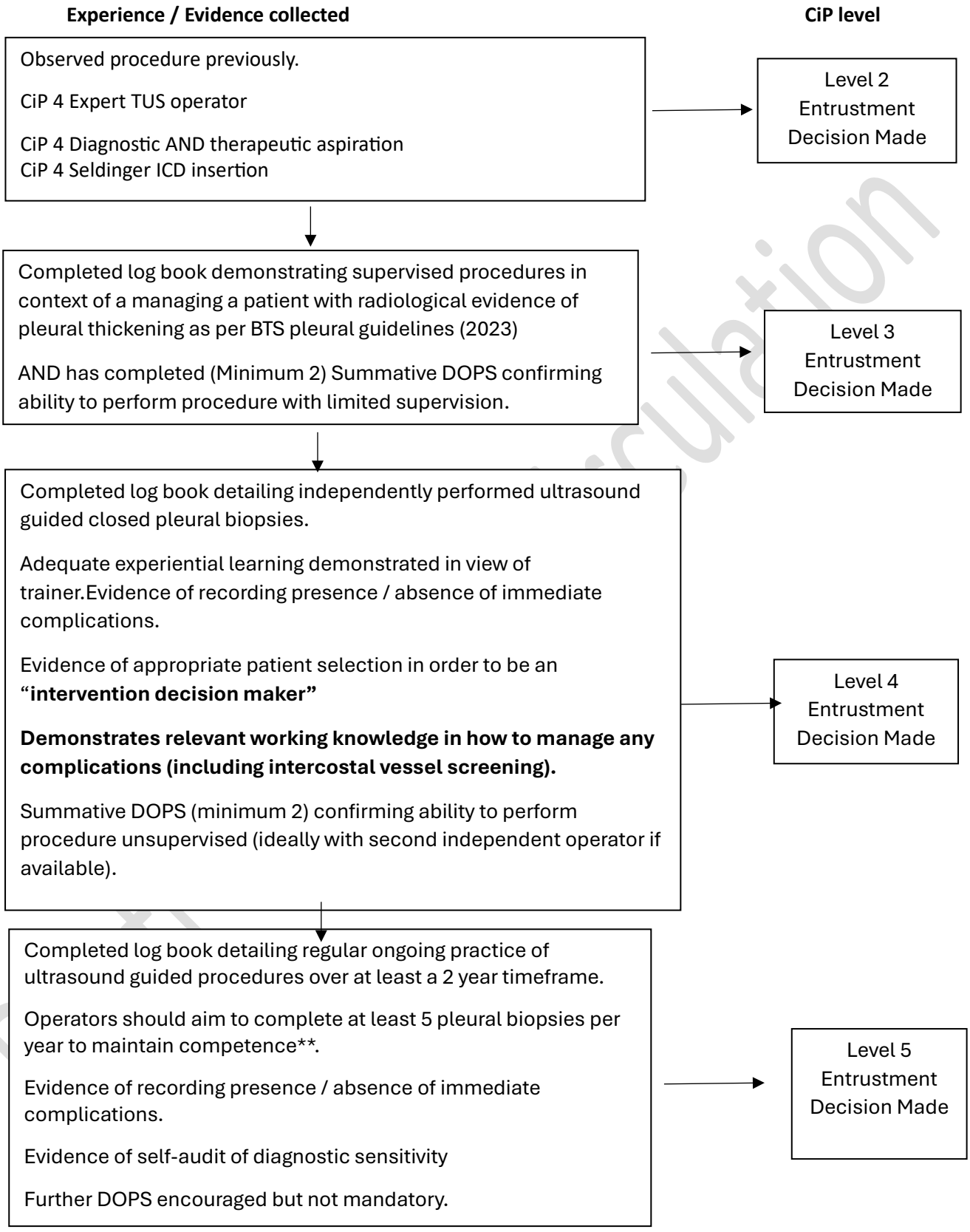


Ultrasound-guided pleural biopsy

In addition to all relevant core procedural capabilities, practitioners with CiP level 3 entrustment for performing ultrasound-guided biopsy will be able to demonstrate the ability to perform the skills shown in Box 8 (below).

- Demonstrate expert level ultrasound capabilities, specifically.
- Identifying pleural nodularity.
- Discriminating pleural thickening from pleural masses, pleural fat or fluid.
- Being able to accurately screen for intercostal arteries.
- Demonstrate ability to identify a safe site for biopsy across full range of parietal pleural abnormalities.
- Demonstrate safe biopsy practice with appropriate yield of tissue using trucut biopsy equipment.

Pleural Procedure Capability in Practice – Pleural biopsies



Level 1 entrustment evidence not applicable

**There may be instances where operators do not get the opportunity to perform the minimum number of procedures per year to demonstrate competence, but operators are performing other advanced capabilities (ultrasound guided lymph node biopsies, lung biopsies/thoracoscopies). In such instances operators should self-evaluate their performance and discuss any performance concerns with an appropriate representative (trust pleural lead etc)

References

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