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British Thoracic Society Training Standards for Pleural Procedures

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ABSTRACT

The British Thoracic Society 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.

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), and also advanced clinical practitioners 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 physician training curricula are based around individuals demonstrating various capabilities in practice (CiPs) to inform progression through and ultimately complete training programmes. These CiPs 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 (BTS) 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/semielective 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 a minority of trusts in UK from recent BTS national organisational audit data.[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 healthcare 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.

- Consultant nurses.
- Clinical nurse specialists.
- Advanced clinical practitioners.
- Advanced nurse practitioners

It should also be relevant to physicians and trainees in general (internal) medicine and other specialities whose curricula include training in pleural procedues. This document seeks to establish the standard for training and we recognise that this cannot be mandated.

This Training Standard will be relevant to healthcare 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 (eg, Internal Medicine Training (IMT) to Specialty Training (ST)).

Inclusions

This document thus seeks to define the requirements for achieving specific levels of 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 of 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 also 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 multiprofessional 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 four formal 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.

The Training Standard draft was available for public consultation from 9 October 2024 to 11 November 2024. Specific stakeholder organisations were contacted directly and invited to contribute.

The Task and Finish Group considered all feedback, and the final draft was shared for approval in May 2025. The document was submitted for publication in June 2025.

Definition of 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, that is, between performing a procedure with indirect supervision (supervisor not present in the room) and acting 'unsupervised'. All procedures being undertaken by resident doctors or other practitioners will have some form of supervision (at the very least non-resident indirect supervision) with ultimate responsibility for the patient being with the supervising consultant. True independent practice involves more than just being able to undertake a procedure but to consider the appropriateness of it, balancing risk and benefit to the patient alongside consideration of alternative approaches, before ultimately performing it. The ability to demonstrate skills in acting as an 'independent decision maker' and to be able to deal with potential complications of the procedure (such as managing intercostal haemorrhage), has therefore been stipulated before an individual should be entrusted to undertake unsupervised practice (ie, CiP4). We feel this addition will be particularly helpful for the multiprofessional audience this standard is designed for.

This distinction is important in recognising that individuals may relatively quickly become capable of performing the procedure (such as currently an internal medicine specialty 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 when all are 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). The 'indications for procedure' element within the DOPS assessment assumes even greater importance for those seeking CiP 4 level. Curricula generally require one DOPS to demonstrate unsupervised practice in practical procedures, but regular confirmation of competence is often required for Annual Review of Competency Progression (ARCP) progression. This ARCP process applies only to doctors in training, not to other health professionals. 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] A recent National Reporting and Learning Service review has highlighted ongoing evidence of organ puncture leading to serious harm or death from both Seldinger and blunt dissection chest drain insertion (but not aspiration) in the UK.[12] This document must serve to enhance the governance around pleural procedural safety for any health professional undertaking training. Considering all of the above, the group feels a stipulation that a minimum of two summative DOPS is required before an individual is entrusted to undertake a procedure with both indirect supervision and for independent practice for any procedure that involves insertion of any device into the thoracic cavity other than a green needle alone, that is, for all procedures other than diagnostic

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

CiP, capabilities in practice.

pleural aspiration. Formative DOPS are strongly encouraged as a powerful vehicle to support and drive learning. A 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 locally.

Given all procedures prior to level 3 entrustment are supervised, achieving this number of assessments should not present significant logistical challenges. DOPS can and should be completed by anyone entrusted to train or supervise others, not solely by any pleural specialist. We recognise the challenges in delivering two summative DOPS prior to level 4 entrustment, but this should be seen as supportive to learners in providing wider ranging evidence of capability in procedures, which are associated with risk of serious harm, and this higher bar should ultimately be reassuring to patients and the public.

We have not indicated requirement for any specific timeframe to progress from level 4 to level 5 as the overall experience acquired is more relevant and individual judgement of those making such entrustment decisions is of more relevance.

This document allows some checks and balances to be more clearly demarcated than at present within the 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 normally expect at least at registrar (St4+)/Band 7+ level and for advanced procedures usually consultant/Band 8 level.

Experienced 'proceduralists' and supervision of learners

It is recognised that there will be practitioners who develop a high level of skill in performing a procedure but do not necessarily need or are able to become 'independent decision-makers' (eg, depending on their relevant professional/regulatory framework). These individuals are likely to be established practitioners within a pleural service who would legitimately be able to provide training in the technical aspects of a procedure but that is distinct to training in either the decision-making or management of complications of a procedure. These individuals could be entrusted to supervise others but would have to have completed all other elements of training requirements as described in each CiP pathway and this should be agreed in writing by the trust pleural/procedural lead. A similar principle could be applied in situations where an experienced registrar working under indirect supervision may be entrusted to supervise another trainee in the performance of a procedure, where the decision to perform such a procedure has been made by an appropriate clinician. In all such circumstances, an appropriate clinician must be able to attend if needed as described in table 1.

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 Figures 1-9 .

Individual procedural CiP pathways and procedural capabilities

CiP pathways for each individual procedure are provided in figures 1–9. 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. The equivalent 'rating' that is currently required by educational supervisors within an existing e-portfolio is detailed for primary pleural procedures.

Assessment of procedural skills should be made using the existing DOPS tool. Procedure-specific DOPS forms for chest drain insertion are already available within the e-portfolio. Generic DOPS forms are adaptable to most other pleural procedures[13] and can be used by the wider multiprofessional team.

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 the 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 General Medical Council Portfolio pathways continue to specify these. Accordingly, we have not specified any indicative numbers within the CiP for any specific procedure.

The group did feel, however, that to support learners and trainers in planning and reviewing their experiential

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).

Figure 1 Core pleural procedural capabilities.

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 online supplemental appendix 1. There seems to be alignment in this data with previous survey data around number of chest drains felt necessary to demonstrate competence.[14]

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.

Ultrasound capabilities relevant to advanced pleural procedures

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 (eg, pleural plaques and pleural fat). Moreover, operators should have sufficient capabilities in performing procedures under ultrasound direct guidance (real time), and the operators should acknowledge that CPB is recognised as a skill performed by 'expert'-level interventionalists on the BTS 2020 TUS 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)[15] 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 that current specialty 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. First, BTS guidelines support more ambulatory pathways for diagnosis and treatment of patients,

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 the box 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.

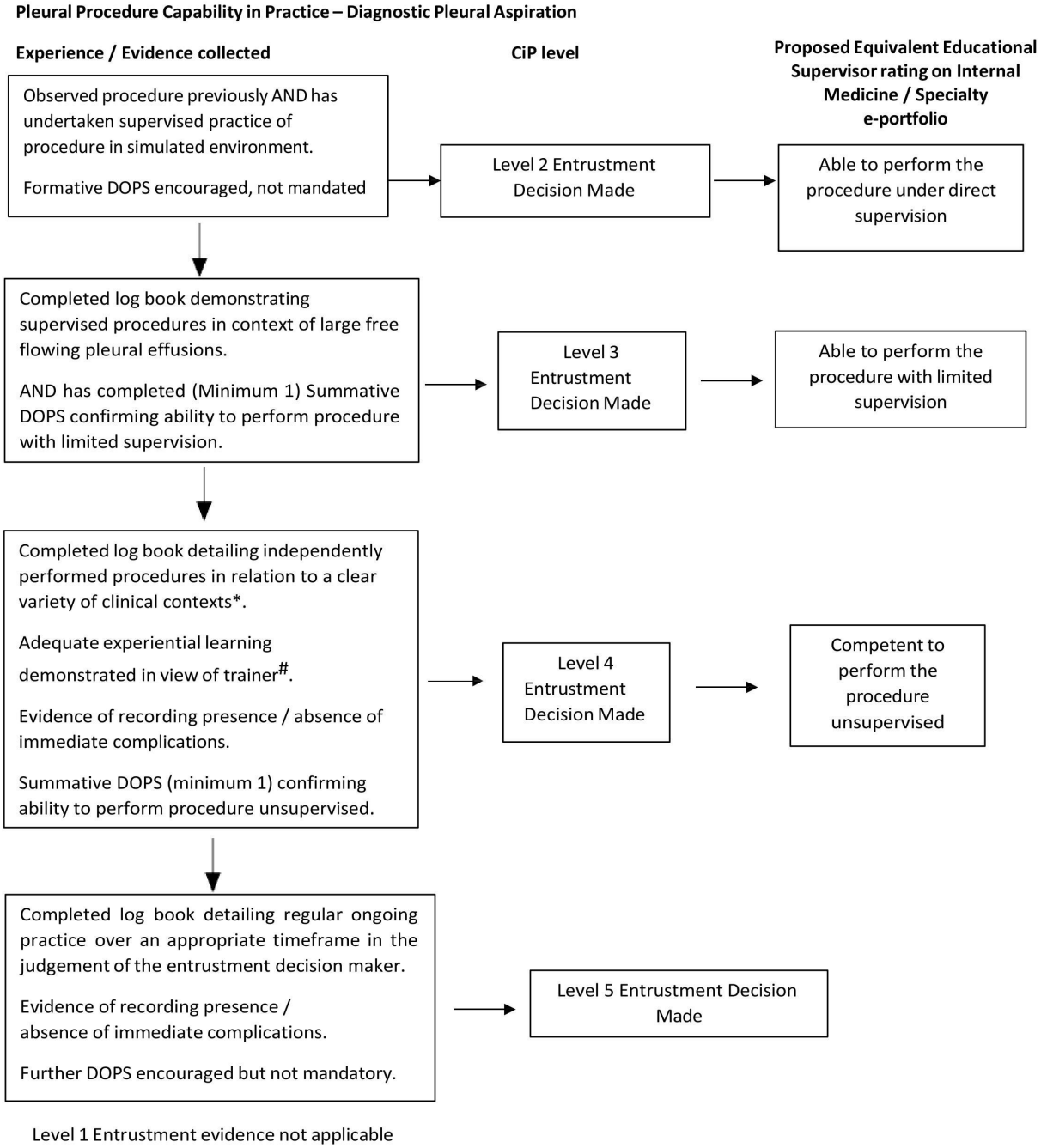


Figure 2 Diagnostic pleural aspiration. CiP, capabilities in practice; DOPS, direct observation of practical skills;

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 the box 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.

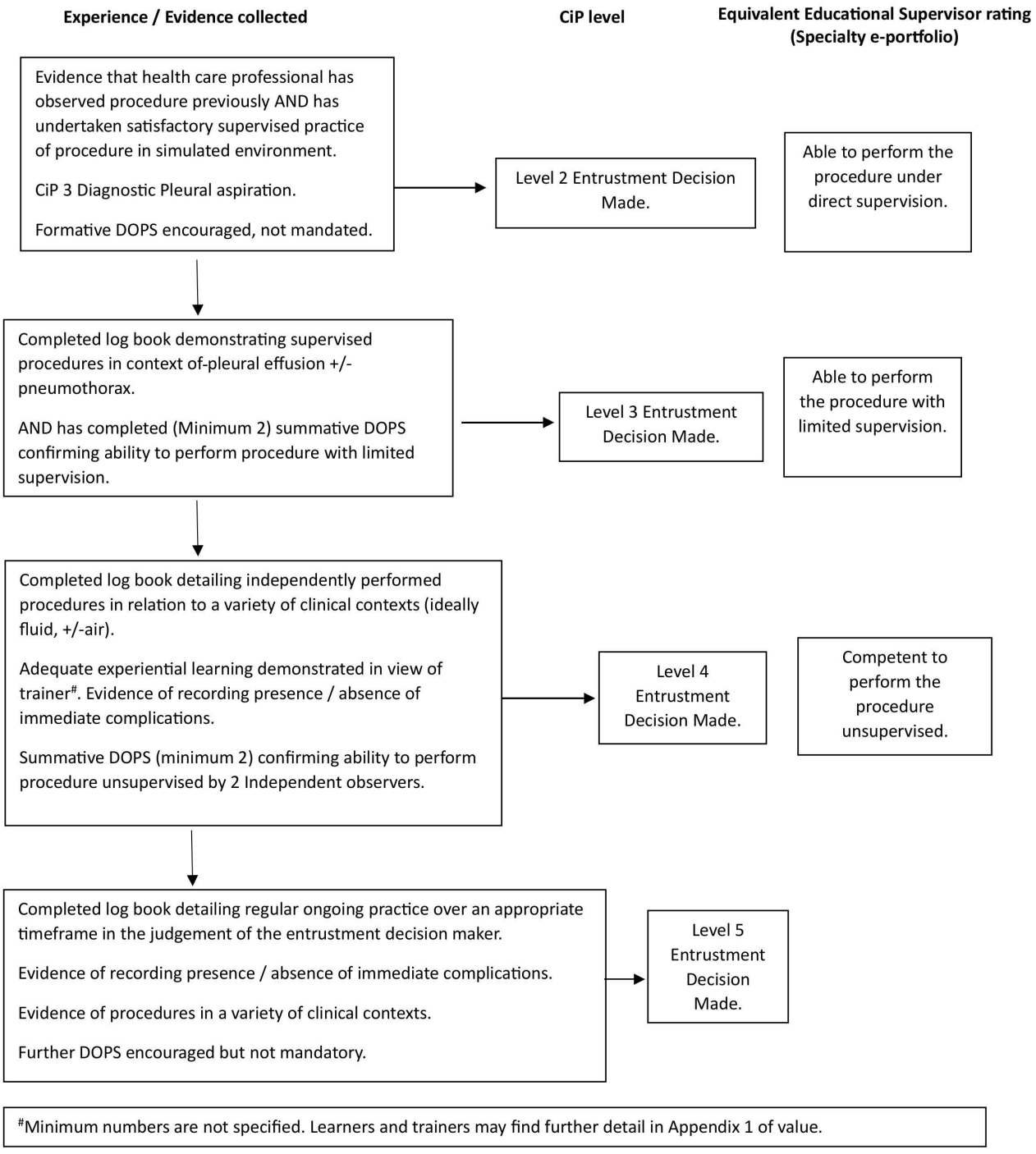


Figure 3 Therapeutic pleural aspiration. CiP, capabilities in practice; DOPS, direct observation of practical skills.

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 the box below.

- Enter the pleural space with an appropriately sized introducer 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 ensure it remains secure on withdrawing the introducer 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.

Pleural Procedure Capability in Practice – Seldinger Intercostal Drain Insertion

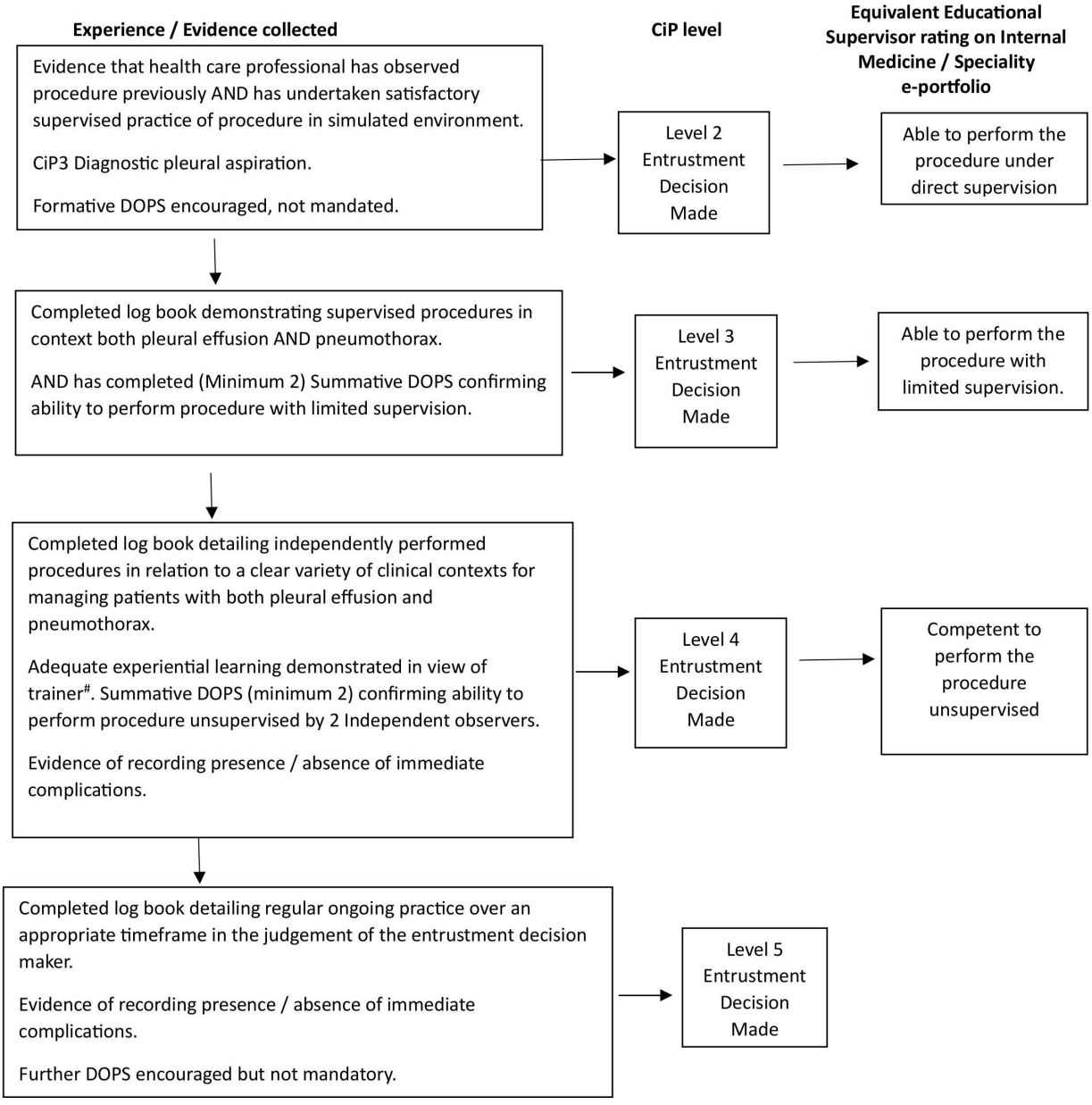


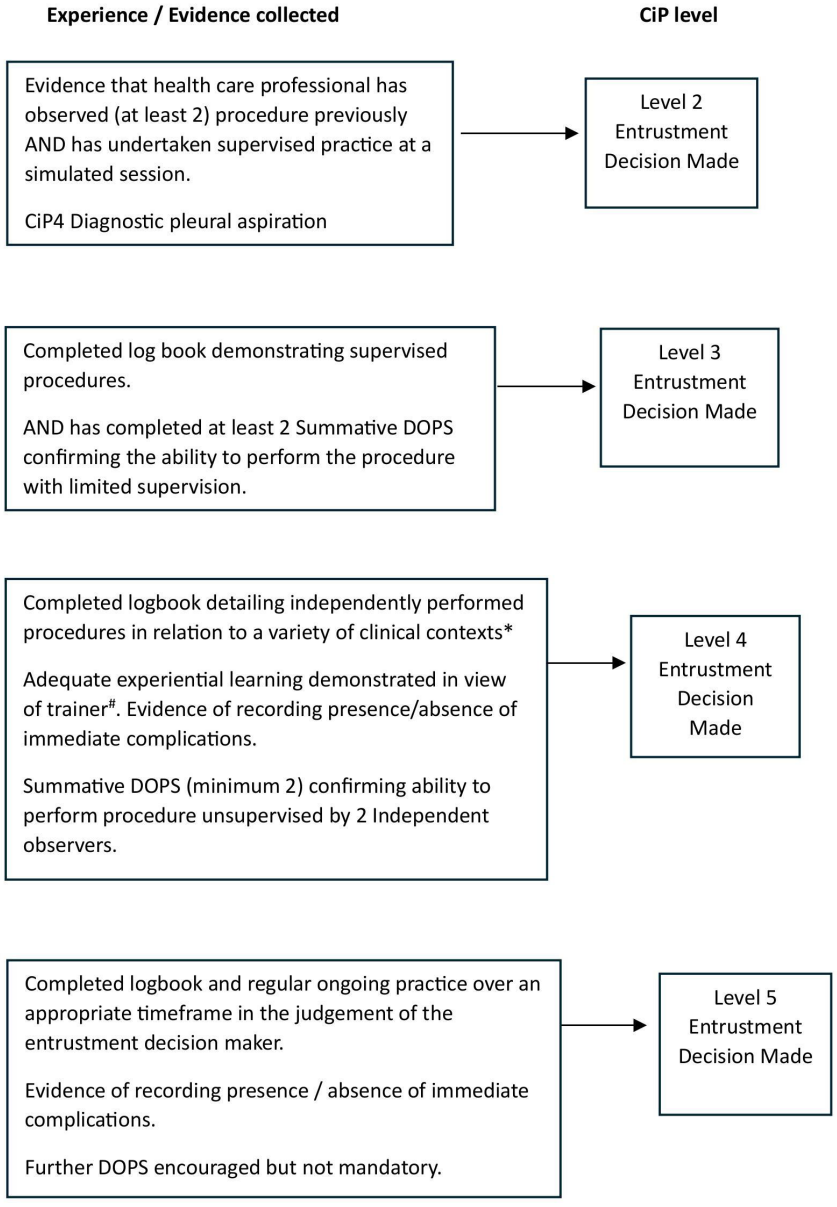
Figure 4 Seldinger intercostal drain insertion. CiP, capabilities in practice; DOPS, direct observation of practical skills.

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 the box 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.

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



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.

#Minimum numbers are not specified. Learners and trainers may find further detail in Appendix 1 of value.

Figure 5 Blunt dissection intercostal drain insertion. CiP, capabilities in practice; DOPS, direct observation of practical skills.

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 the box 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.

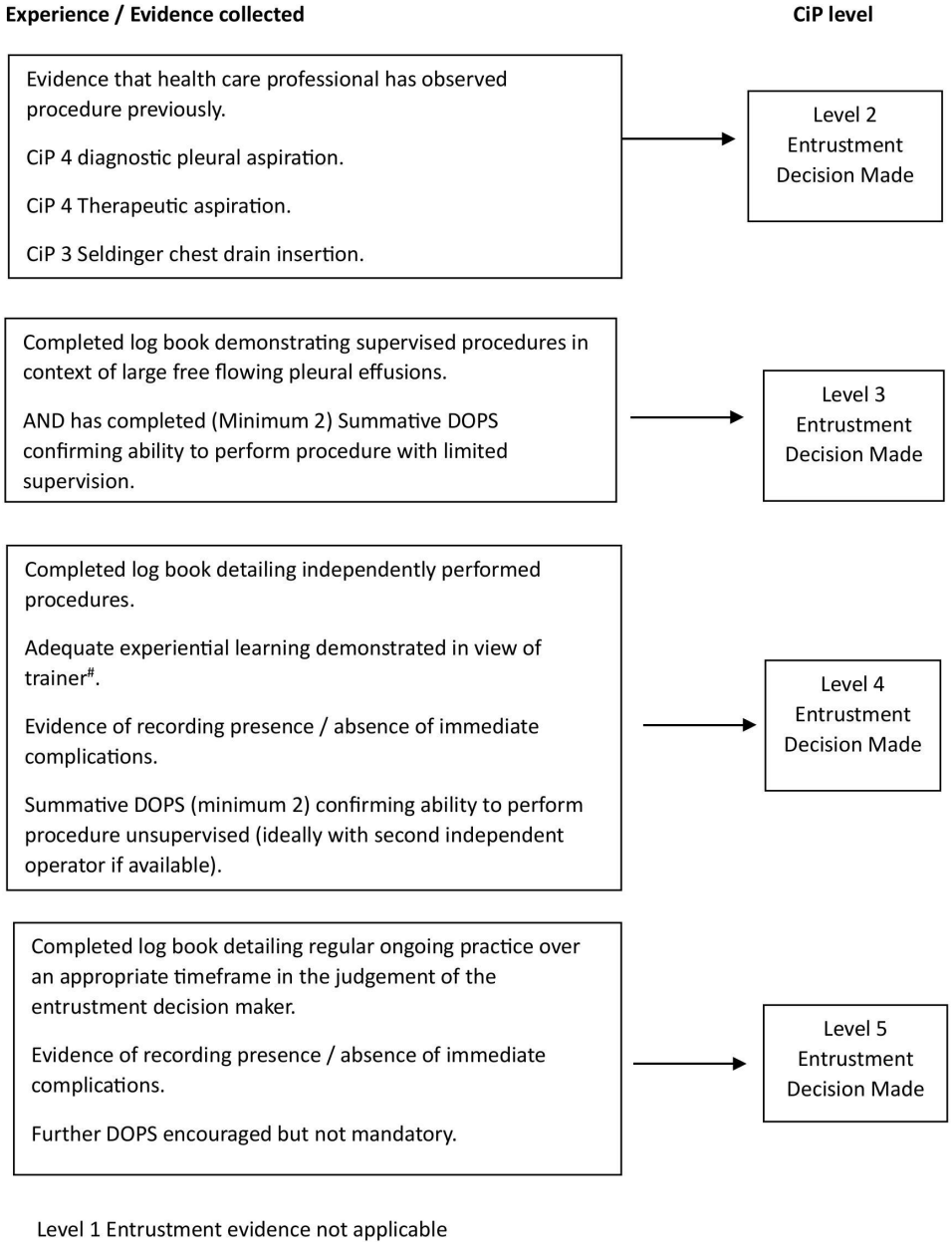


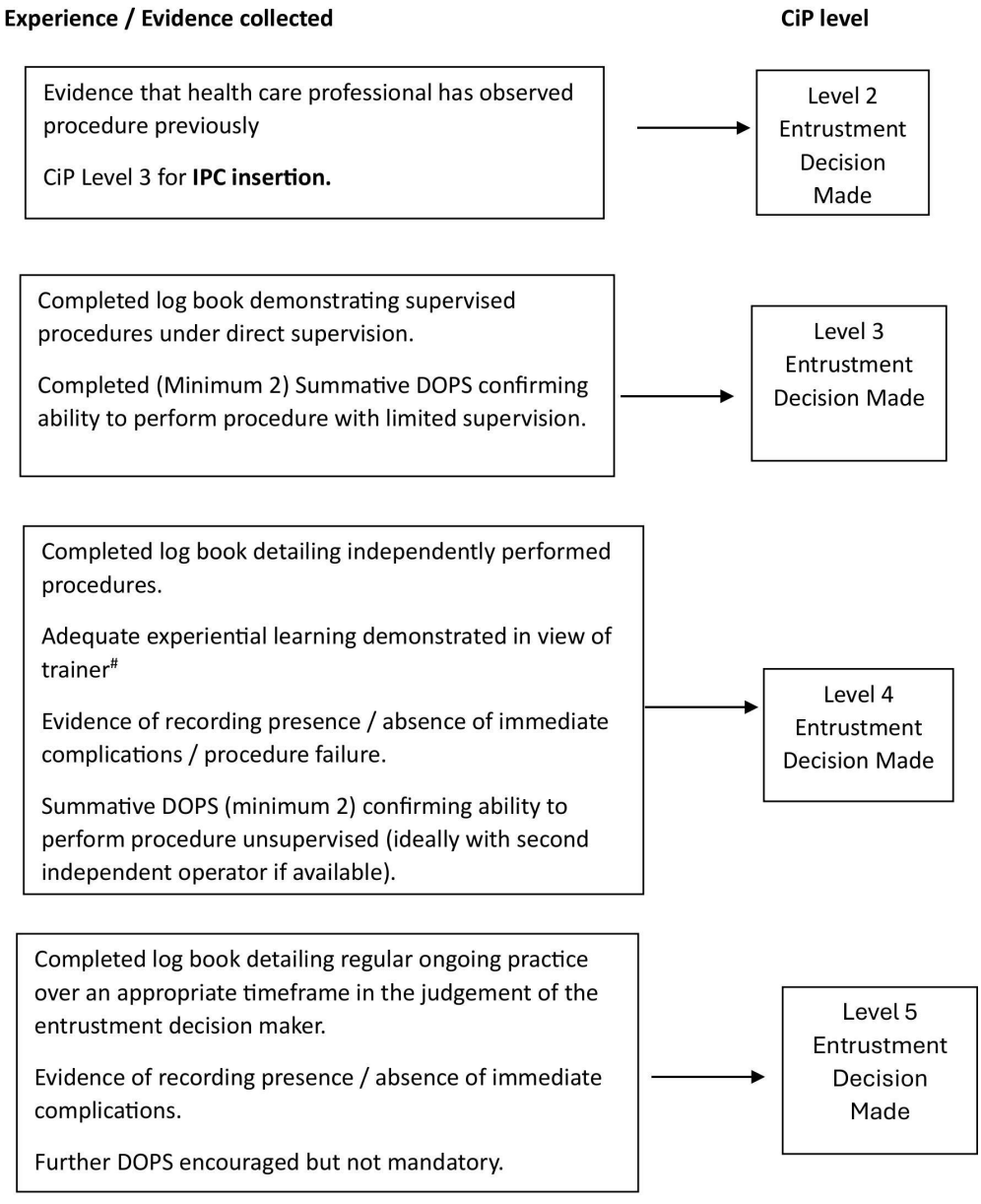
Figure 6 Indwelling pleural catheter insertion. CiP, capabilities in practice; DOPS, direct observation of practical skills; IPC, indwelling pleural catheter.

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 the box 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

#Minimum numbers are not specified. Learners and trainers may find further detail in Appendix 1 of value.

Figure 7 Indwelling pleural catheter (IPC) removal. CiP, capabilities in practice; DOPS, direct observation of practical skills.

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 the box below.

- 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.
- Recognise when "dry" thoracoscopy may a feasible option and referral to appropriate operator if necessary.

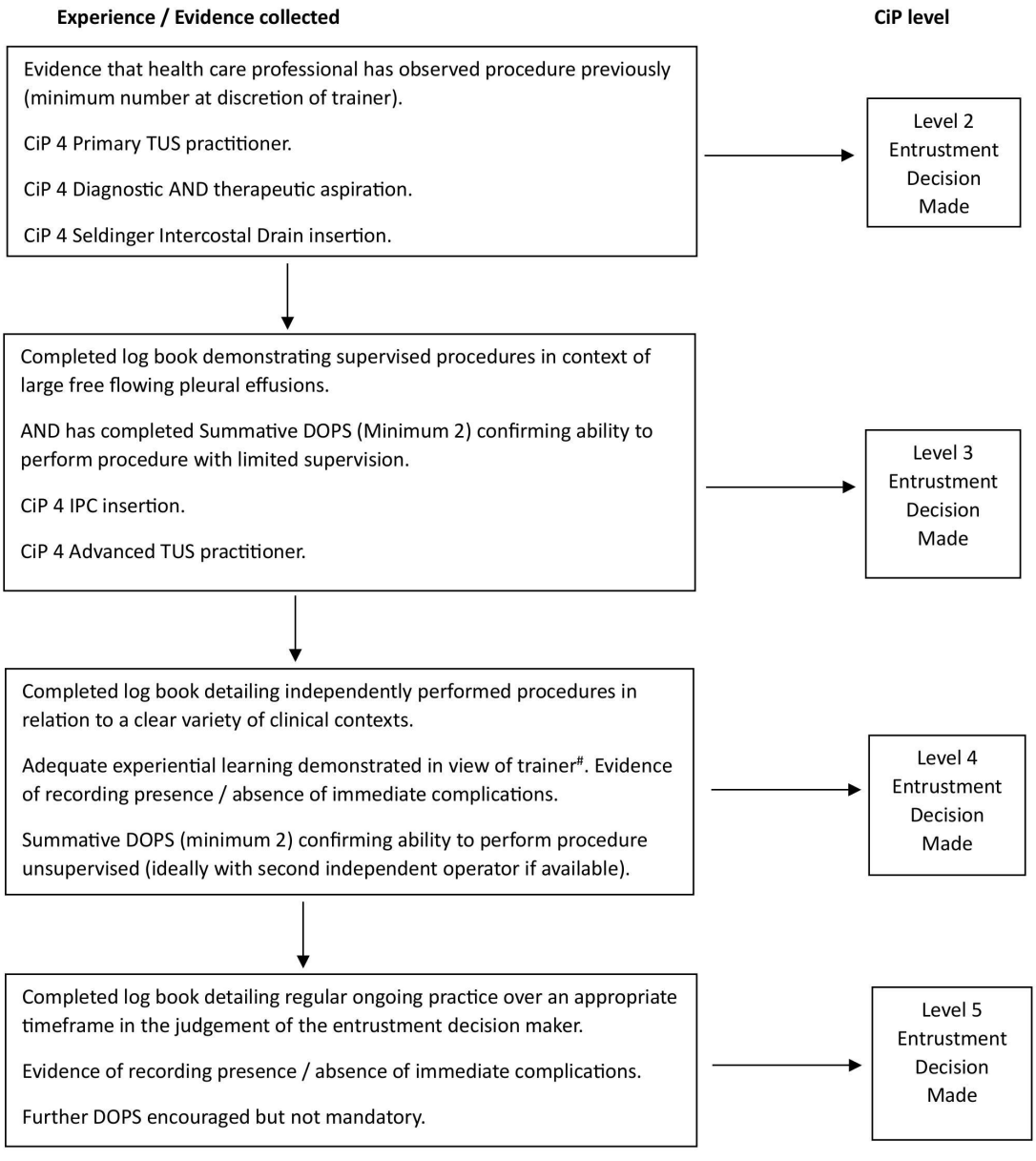


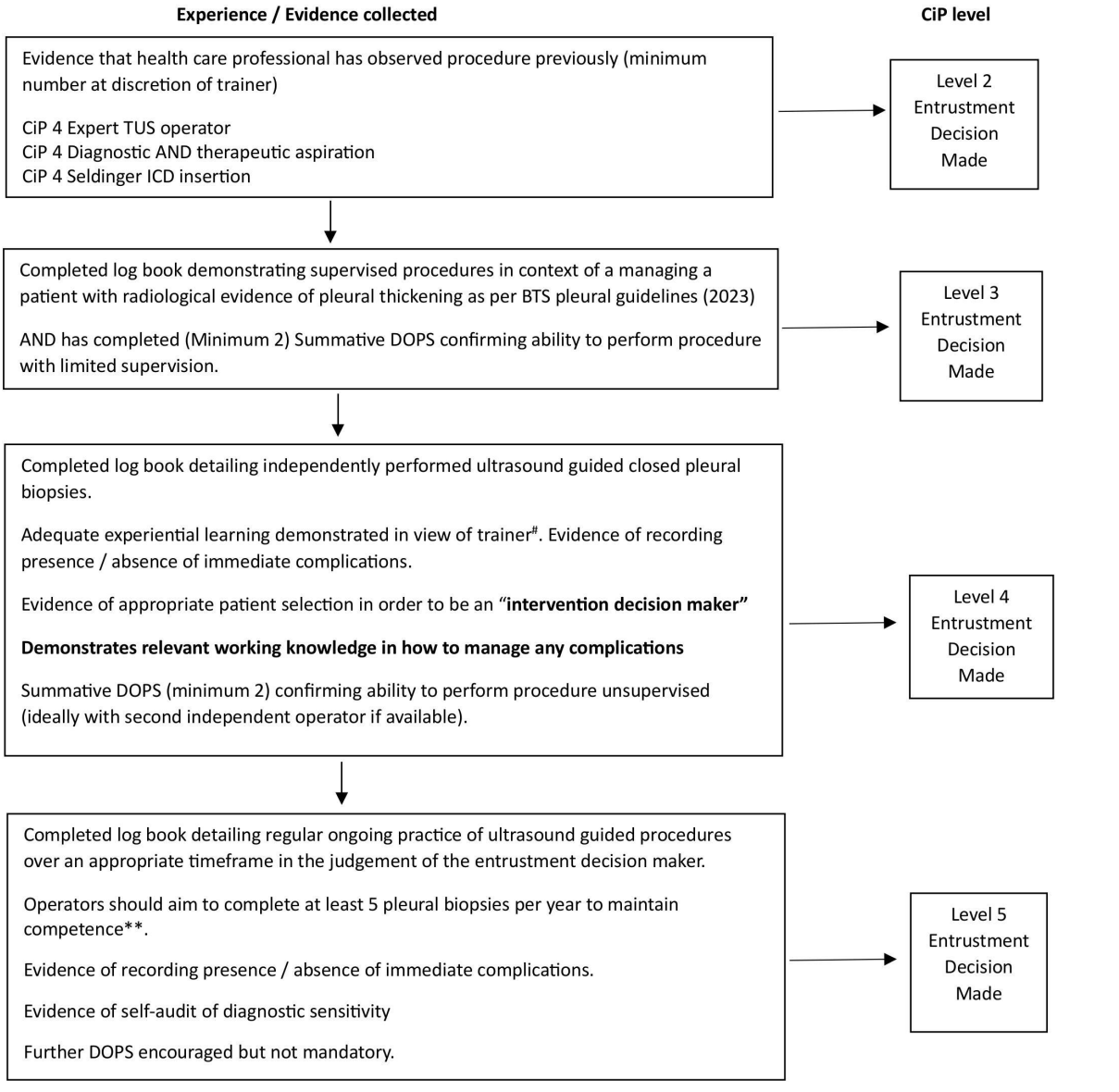
Figure 8 Thoracoscopy. CiP, capabilities in practice; DOPS, direct observation of practical skills; TUS, thoracic ultrasound.

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 the box below.

- Demonstrate expert level ultrasound capabilities, specifically:
  - Identifying pleural nodularity.
  - Discriminating pleural thickening from pleural masses, pleural fat or fluid.
  - 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 appropriate biopsy equipment.

Pleural Procedure Capability in Practice – Ultrasound guided pleural biopsy



Level 1 Entrustment evidence not applicable

#Minimum numbers are not specified. Learners and trainers may find further detail in Appendix 1 of value.

**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).

Figure 9 Ultrasound. CiP, capabilities in practice; DOPS, direct observation of practical skills.

with resultant shift of patient population away from the general medical inpatient ward base. Second, 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 this is possible. Consequently, pleural services may not have the capacity to provide a high level of training in primary pleural procedures beyond respiratory specialty 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.[16] This group, therefore, believes changes to the IMT curriculum are needed.

The current Internal Medicine Stage 1 curriculum (applicable to IMY1–3)[17] requires trainees, by end of IMY2, 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 (ie, CiP level 4) that requires practitioners to demonstrate the ability to act as an independent decision-maker and to deal with the potential complications of the procedure. We have outlined that evidence to support entrustment at this level includes completing a logbook detailing adequate experiential learning in view of the trainer 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 Internal Medicine (IM) 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 General Internal Medicine (GIM) trainees, should still allow appropriate level of safe 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, the 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[18] 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 specialty.

It is also important to acknowledge that it is not feasible, or required, for all IMTs to gain competence in performing TUS, which is a mandatory prerequisite 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, this should be made by a member of the specialist pleural team, which may, but not exclusively, be the local trust pleural procedural training lead or pleural service lead. CiP 5 entrustment decisions should be made by an appropriate consultant, for example, in acute/intensive care medicine for primary procedures, and for advanced procedures by a relevant senior member, the specialist pleural team.

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, outcomes, complications and onward referral.

Maintenance of such documentation is the responsibility of the practitioner and should be reviewed annually within existing appraisal structures and, where necessary, through review by the trust pleural lead. In some situations (eg, long gaps between cases), additional supporting evidence (eg, DOPS) or additional numbers to confirm capability may be required. For healthcare professionals returning after a period away from practice (eg, maternity leave, prolonged absence or time out of training), it is important practitioners check their level of capability with the 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'.[19] 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 at the appropriate time, with anticipation that further reviews will be needed every 3–5 years. This will be overseen by the BTS ETC. 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

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