Pleural Procedures - Clinician Questionnaire

A. INTRODUCTION

What is this study about?

Pleural procedures (especially chest drain insertion) have been associated with patient safety incidents frequently enough to have been the subject of a first patient safety alert in 2008, which set out best practice for chest drain insertion. It also highlighted the importance of learning from local incident reporting data.

However, recent evidence suggests that little has changed to reduce the number of patients harmed due to chest drain insertion with concerns also being raised regarding the training and experience of those tasked to deal with emergency out of hours pleural interventions. Urgent and emergency procedures performed out of hours are often done in the most complex and high-risk patients but are more likely to be done by less experienced staff.

This study will explore the patient pathway including indication for treatment, details and timing of the procedure, pre-procedure safety, consent, correct use of equipment, and complications of the procedure. Organisational data will explore staff training, out of hours arrangements and compliance with the recommendations of the two national patient safety alerts. Local incident reports and investigations will also be collected to ensure themes are identified and lessons are learned from local reporting systems.

Inclusions / exclusions

Patients aged 18 and older who were admitted to hospital between 01/01/2024 and 31/12/2024 and had a chest drain inserted (OPCS code T12.0-T12.9) during their hospital stay will be included in the initial patient identification.

Trauma patients will be excluded on a case by case basis as there is a different pathway and these will be covered by the upcoming NCEPOD study on Rib fractures

Data sampling

Up to 8 patients per hospital will be selected for inclusion in the study.
Primary selection criteria: Patients admitted out of hours, including weekends; Patients admitted as an emergency will be selected as a priority (NB for hospitals with low numbers of patients identified, we will also include elective admissions). Where a clinical incident has been reported, these patients will be selected in up to 50% of cases from each hospital’s selection.

Definitions

A list of definitions can be found here: http\www.ncepod.org.uk\pleural\definitions

B. PATIENT DETAILS

1. Please use this space to provide a brief overview of the episode of care, including any treatment provided:

Please describe events from presentation to discharge , focusing on the chest drain insertion/ pleural procedure. NB: To be included in the study, the patient must be 18 years or over and have undergone a pleural procedure.

2. Age:

At the time of admission to hospital

Years ☐ Unknown

Value should be between 18 and 115

3. Sex:

◯ Male ◯ Female ◯ Other

4. Ethnicity:

◯ White British/White - other
◯ Black/African/Caribbean/Black British
◯ Asian/Asian British (Indian, Pakistani, Bangladeshi, Chinese, other Asian)
◯ Mixed/Multiple ethnic groups
◯ Other ethnic group
◯ Unknown

5. Please make an estimation of the patient's Rockwood clinical frailty score prior to the admission:

https://www.england.nhs.uk/south/wp-content/uploads/sites/6/2022/02/rockwood-frailty-scale_.pdf

◯ 1. Very fit ◯ 2. Well ◯ 3. Managing well
◯ 4. Vulnerable ◯ 5. Mildly frail ◯ 6. Moderately frail
◯ 7. Severely frail ◯ 8. Very severely frail ◯ 9.Terminally ill
◯ Unable to ascertain

6. What was the reason for this admission?

i.e. What was the condition, what symptoms did the patient present with?

7. Please list any comorbidities for this patient:
Answers may be multiple, please select all that apply. Please see: https://www.mdcalc.com/calc/3917/charlson-comorbidity-index-cci

- ☐ Myocardial infarction
- ☐ Congestive heart failure
- ☐ Peripheral vascular disease
- ☐ Cerebrovascular accident (CVA) or transient ischaemic attack (TIA)
- ☐ Dementia
- ☐ Chronic pulmonary disease
- ☐ Connective tissue disease
- ☐ Peptic ulcer disease
- ☐ Liver disease
- ☐ Diabetes mellitus
- ☐ Hemiplegia
- ☐ Moderate to severe chronic kidney disease
- ☐ Cancer (localised)
- ☐ Cancer (metastatic)
- ☐ Leukemia
- ☐ Lymphoma
- ☐ AIDS (acquired immune deficiency syndrome)

Please specify any additional options here...

Previous admissions

8a. Was this the patient's first admission where a pleural procedure/chest drain was indicated?

◯ Yes ◯ No ◯ Unknown

8b. If answered "No" to [8a] then:
What was the interval between the current admission and the previous admission where a pleural procedure/chest drain was indicated/carried out?
if the patient has undergone multiple pleural procedures, then select the most recent one

◯ <2 weeks ◯ 2-4 weeks ◯ 4 weeks - 3 months ◯ >3 months
◯ Unknown

C. INITIAL CARE /DECISION-MAKING

Arrival in hospital

1a. Please state the date of arrival in hospital:
The first recorded date of this hospital admission

☐ Unknown

1b. Please state the time of arrival in hospital:
The first recorded time in hospital, eg. arrival in the emergency department

☐ Unknown

2. What was the route of admission to hospital?

- ◯ Via the Emergency Department
- ◯ Referral from attendance at outpatient clinic
- ◯ Referral from primary care
- ◯ Hospital transfer
- ◯ Unknown

If not listed above, please specify here...

3a. Please enter the date of admission to hospital:

☐ Unknown

3b. Please enter the time of admission to hospital:

☐ Unknown

4. What was the first ward location the patient was admitted to?

- ◯ Acute medical unit
- ◯ Critical care unit
- ◯ General ward
- ◯ Acute surgical unit
- ◯ Respiratory ward
- ◯ Respiratory support unit
- ◯ General surgical ward
- ◯ Specialist surgical ward
- ◯ Specialist medical ward

If not listed above, please specify here...

Initial Assessment

5. What was the location of the initial assessment?

- ◯ Emergency department
- ◯ Acute medical unit/ Medical admissions unit
- ◯ Surgical Admissions unit
- ◯ Medical ward
- ◯ Surgical ward
- ◯ Critical care unit

If not listed above, please specify here...

6. Please enter the respiratory rate on first assessment:

breaths per minute ☐ Unknown

7. What was the first oxygen saturation documented

% ☐ Unknown

Value should be no more than 100

8a. Did the patient require supplemental oxygen?

◯ Yes ◯ No ◯ Unknown

8b. If answered "Yes" to [8a] then:
Please provide details (supplemental oxygen):

Diagnostic imaging prior to the procedure

9a. Was any imaging undertaken for diagnostic purposes prior to the pleural procedure/ chest drain insertion?
that informed the decision to perform the procedure

◯ Yes ◯ No ◯ Unknown

9b. If answered "Yes" to [9a] then:
Please indicate the diagnostic imaging performed:
Answers may be multiple, please select all that apply

☐ Chest X-Ray ☐ CT chest ☐ Ultrasound scan (USS)

Please specify any additional options here...

10a. If answered "Chest X-Ray" to [9b] then:
Date Chest X-Ray was performed:

☐ Unknown

10b. If answered "Chest X-Ray" to [9b] then:
Time Chest X-Ray was performed:

☐ Unknown

10c. If answered "Chest X-Ray" to [9b] then:
Date Chest X-Ray was reported:

☐ Unknown

10d. If answered "Chest X-Ray" to [9b] then:
Time Chest X-Ray was reported:

☐ Unknown

11a. If answered "CT chest" to [9b] then:
Date CT chest was performed:

☐ Unknown

11b. If answered "CT chest" to [9b] then:
Time CT chest was performed:

☐ Unknown

11c. If answered "CT chest" to [9b] then:
Date CT chest was reported:

☐ Unknown

11d. If answered "CT chest" to [9b] then:
Time CT chest was reported:

☐ Unknown

12a. If answered "Ultrasound scan (USS)" to [9b] then:
Date USS was performed:

☐ Unknown

12b. If answered "Ultrasound scan (USS)" to [9b] then:
Time USS was performed:

☐ Unknown

12c. If answered "Ultrasound scan (USS)" to [9b] then:
Date USS was reported:

☐ Unknown

12d. If answered "Ultrasound scan (USS)" to [9b] then:
Time USS was reported:

☐ Unknown

13. If answered "Ultrasound scan (USS)" to [9b] then:
Was the ultrasound scan:

- ◯ Carried out at point of care (POCUS)
- ◯ Carried out using the Radiology departmental ultrasound
- ◯ Unknown

If not listed above, please specify here...

14a. If answered to [9b] then:
Date other imaging was performed:

☐ Unknown

14b. If answered to [9b] then:
Time other imaging was performed:

☐ Unknown

14c. If answered to [9b] then:
Date other imaging was reported:

☐ Unknown

14d. If answered to [9b] then:
Time other imaging was reported:

☐ Unknown

15. If answered "Chest X-Ray", "CT chest" or "Ultrasound scan (USS)" to [9b] then:
Was all imaging formally reported prior to the pleural procedure taking place?

◯ Yes ◯ No ◯ Unknown

16a. If answered "Yes" to [9a] then:
In your opinion, could anything have been improved about pre-procedure imaging?

◯ Yes ◯ No ◯ Unknown

16b. If answered "Yes" to [16a] then:
Please provide details:

Decision-making

17a. Date the decision was made to carry out the pleural procedure/insert a chest drain:

☐ Unknown

17b. Time the decision was made to carry out the pleural procedure/insert a chest drain:

☐ Unknown

18. What was the location of the patient when the decision was made to insert a chest drain/ carry out a pleural procedure?

- ◯ Emergency department
- ◯ Acute medical unit
- ◯ Critical care unit
- ◯ General ward
- ◯ Outpatient department
- ◯ Respiratory ward
- ◯ Respiratory support unit

If not listed above, please specify here...

19a. What was the grade of clinician who made the decision to insert the chest drain/that the drain was required?

- ◯ Consultant doctor
- ◯ Specialty and associate specialist grade (SAS grade)
- ◯ Senior clinical fellow
- ◯ Resident doctor/specialist trainee (ST6-8 or equivalent)
- ◯ Resident doctor/specialist trainee (ST3-5 or equivalent)
- ◯ Resident doctor (below ST3 or equivalent)
- ◯ Specialist nurse (band 7-9)
- ◯ Registered nurse (band 5-6)
- ◯ Unknown

If not listed above, please specify here...

19b. What was the specialty of the clinician who made the decision to perform the pleural procedure/insert the chest drain?

- ◯ Respiratory medicine
- ◯ Acute medicine
- ◯ Intensive/critical care medicine
- ◯ Emergency medicine
- ◯ General medicine
- ◯ Interventional radiology
- ◯ Pleural nursing
- ◯ Anaesthesia
- ◯ Unknown

If not listed above, please specify here...

20. Did the clinician who made the decision review the patient prior to the procedure?

- ◯ Yes, in person
- ◯ Yes, remotely
- ◯ No
- ◯ Unknown

If not listed above, please specify here...

21a. Was advice sought from another clinician regarding the decision to carry out the pleural procedure/insert the chest drain?

- ◯ Yes
- ◯ No
- ◯ Unknown

21b. If answered "Yes" to [21a] then:
What was the specialty of the advising clinician?

- ◯ Acute medicine
- ◯ Intensive/critical care medicine
- ◯ General medicine
- ◯ Pleural nursing
- ◯ Unknown
- ◯ Respiratory medicine
- ◯ Emergency medicine
- ◯ Interventional radiology
- ◯ Anaesthesia

If not listed above, please specify here...

21c. If answered "Yes" to [21a] then:
What was the grade of the advising clinician?

- ◯ Consultant
- ◯ Specialty and associate specialist grade (SAS grade)
- ◯ Senior clinical fellow
- ◯ Resident doctor/specialist trainee (ST6-8 or equivalent)
- ◯ Resident doctor/specialist trainee (ST3-5 or equivalent)
- ◯ Resident doctor (below ST3 or equivalent)
- ◯ Specialist nurse (band 7-9)
- ◯ Registered nurse (band 5-6)
- ◯ Unknown

If not listed above, please specify here...

22. If answered "Yes" to [21a] then:
Did the advising clinician review the patient prior to the procedure?

◯ Yes, in person ◯ Yes, remotely ◯ No ◯ Unknown

If not listed above, please specify here...

23a. What was the level of urgency of the pleural procedure/ drain insertion?

◯ Emergency ◯ Urgent ◯ Non-urgent ◯ Unknown

If not listed above, please specify here...

23b. When should the procedure have been carried out?

☐ Not Applicable ☐ Unknown

24. What was the indication for chest drain insertion?
Answers may be multiple

☐ Pleural effusion ☐ Pneumothorax ☐ Pleural infection ☐ Unknown

Please specify any additional options here...

25. If answered "Pneumothorax" to [24] then:
What was the category of pneumothorax?

- ◯ Primary spontaneous pneumothorax
- ◯ Secondary spontaneous pneumothorax
- ◯ Unknown

If not listed above, please specify here...

26. If answered "Pleural infection" to [24] then:
Was the infection:

- ◯ Pneumonia
- ◯ Secondary to abdominal infection
- ◯ Unknown source of infection

If not listed above, please specify here...

27. If answered "Pleural effusion" to [24] then:
For pleural effusion, was it:

- ◯ Exudate
- ◯ Transudate
- ◯ Unknown

28. If answered "Pleural effusion" to [24] then:
For pleural effusion, what was the underlying cause?

- ☐ Lung cancer
- ☐ Other cancer
- ☐ Heart failure
- ☐ Liver disease
- ☐ Renal failure
- ☐ Autoimmune disease
- ☐ Intestinal disease

Please specify any additional options here...

29a. If answered "Lung cancer" or "Other cancer" to [28] then:
If malignancy, was a RED score used to assess likely time to recurrence?

- ◯ Yes
- ◯ No
- ◯ Unknown
- ◯ Not applicable

29b. If answered "Yes" to [29a] then:
What was the RED score?

☐ Not Applicable ☐ Unknown

Value should be no more than 100

29c. If answered "Yes" to [29a] then:
What was this recorded as?

- ◯ Low
- ◯ Medium
- ◯ High
- ◯ Unknown / Not Applicable

D. PERI-PROCEDURE CARE

1a. What was the date the pleural procedure was carried out/the chest drain was inserted?

☐ Unknown

1b. What was the time the pleural procedure was carried out/ chest drain was inserted?

☐ Unknown

2a. In your opinion, was the procedure performed at the right time?

- ◯ Yes
- ◯ No, the procedure was delayed, it should have been carried out sooner
- ◯ No, the procedure was carried out too soon, it should have been delayed
- ◯ Unknown

2b. If answered "No, the procedure was delayed, it should have been carried out sooner" or "No, the procedure was carried out too soon, it should have been delayed" to [2a] then: Please can you explain your answer:

Consent

3a. Did the patient have capacity to consent to treatment?

◯ Yes ◯ No ◯ Unknown

3b. If answered "No" to [3a] then: Did the patient have a advocate?

◯ Yes ◯ No ◯ Unknown

4a. How was consent taken?

- ◯ Written consent form: Standard consent
- ◯ Written consent form (form 4): Best interest
- ◯ Verbal consent documented in the notes
- ◯ "Patient lacks capacity" documented in notes
- ◯ N/A- consent not documented

If not listed above, please specify here...

4b. If answered "Written consent form: Standard consent" to [4a] then: Was a standardised consent form for chest drains/pleural procedures completed?

◯ Yes ◯ No ◯ Unknown

4c. If answered "Written consent form: Standard consent" to [4a] then:
What complications were listed on the consent form?
Answers may be multiple, please select all that apply

- ☐ Incorrect site
- ☐ Re-expansion pulmonary oedema
- ☐ Pneumothorax
- ☐ Infection
- ☐ Inappropriate clamping
- ☐ Patient discomfort (persistent cough)
- ☐ Haemorrhage/ bleeding
- ☐ Risk of death
- ☐ Organ puncture
- ☐ Shock
- ☐ Surgical emphysema
- ☐ Disconnection
- ☐ Accidental drain removal
- ☐ Patient discomfort (persistent pain)
- ☐ Significant haemorrhage/ bleeding

Please specify any additional options here...

4d. If answered "Written consent form: Standard consent" to [4a] then:
Were all relevant complications included?

◯ Yes ◯ No ◯ Unknown

Location

5. In what hospital location was the pleural procedure/chest drain insertion carried out?

- ◯ Procedure room
- ◯ Emergency department
- ◯ Surgical ward
- ◯ Respiratory ward
- ◯ Acute Medical Unit (AMU)
- ◯ Assessment area
- ◯ Unknown
- ◯ Operating theatre
- ◯ Medical ward
- ◯ Critical care unit
- ◯ Respiratory support unit
- ◯ Same day emergency care (SDEC)
- ◯ Enhanced care area

If not listed above, please specify here...

6a. Was a ward transfer required to carry out the procedure?
Or any change of location within the hospital

◯ Yes ◯ No ◯ Unknown

6b. If answered "Yes" to [6a] then:
Did this contribute to a delay to the procedure?

◯ Yes ◯ No ◯ Unknown

7a. In your opinion, was the location appropriate?

◯ Yes ◯ No ◯ Unknown

7b. If answered "No" to [7a] then:
If no, please explain your answer:

Procedural Operator(s)

8a. What was the grade of the procedural operating clinician?
the clinician who performed the pleural procedure

- ◯ Consultant
- ◯ Specialty and associate specialist grade (SAS grade)
- ◯ Senior Clinical Fellow
- ◯ Resident doctor/specialist trainee (ST6-8 or equivalent)
- ◯ Resident doctor/specialist trainee (ST3-5 or equivalent)
- ◯ Resident doctor (below ST3 or equivalent)
- ◯ Specialist nurse (band 7-9)
- ◯ Registered nurse (band 5-6)
- ◯ Unknown

If not listed above, please specify here...

8b. What was the specialty of the procedural operating clinician?

- ◯ Respiratory medicine
- ◯ Emergency medicine
- ◯ Interventional radiology
- ◯ Anaesthesia
- ◯ Respitatory nursing
- ◯ Unknown
- ◯ Intensive/critical care medicine
- ◯ General medicine
- ◯ Pleural nursing
- ◯ General surgery
- ◯ Acute medicine

If not listed above, please specify here...

9a. Was it documented that anyone assisted with the procedure?

◯ Yes ◯ No ◯ Unknown

9b. If answered "Yes" to [9a] then:
What was the grade of the assisting clinician?

- ◯ Consultant doctor
- ◯ Resident doctor/specialist trainee (ST6-8 or equivalent)
- ◯ Resident doctor/specialist trainee (ST3-5 or equivalent)
- ◯ Resident doctor (ST1-3 or equivalent)
- ◯ Foundation year doctor (FY1-2)
- ◯ Specialist nurse (band 7-9)
- ◯ Registered nurse (band 5-6)
- ◯ Student nurse
- ◯ Unknown

If not listed above, please specify here...

9c. If answered "Yes" to [9a] then:
What was the specialty of the assisting clinician?

- ◯ Respiratory medicine
- ◯ General medicine
- ◯ Respiratory nursing
- ◯ Acute medicine
- ◯ Intensive / critical care
- ◯ Interventional radiology
- ◯ Pleural nursing
- ◯ Unknown
- ◯ Emergency medicine
- ◯ General nursing
- ◯ Anaesthesia

If not listed above, please specify here...

Pre-/peri-operative assessment/analysis

10a. Was a procedure safety checklist included in the records?

◯ Yes ◯ No ◯ Unknown

10b. If answered "Yes" to [10a] then:
What national patient safety standards were included?
e.g. https://www.england.nhs.uk/patient-safety/natssips

10c. If answered "Yes" to [10a] then:
Did it include all relevant national patient safety standards?
https://www.england.nhs.uk/patient-safety/natssips/

◯ Yes ◯ No ◯ Unknown

10d. If answered "No" to [10c] then:
What was missing?

11. Which of the following additional risk factors were present pre-procedure?

☐ Anti-coagulants ☐ Anti-platelet agents ☐ Low platelets
☐ None

Please specify any additional options here...

12. What was the NEWS2 score immediately prior to the pleural procedure / chest drain insertion?
If no NEWS2 score completed , please select not applicable

☐ Not Applicable ☐ Unknown

Value should be no more than 20

13a. Were all appropriate pre-procedure tests done?

◯ Yes ◯ No ◯ Unknown

13b. If answered "No" to [13a] then:
Which additional tests should have been done?
Answers may be multiple, please select all that apply

☐ Full blood count ☐ Urea & Electrolytes ☐ INR test ☐ Chest X-Ray
☐ CT chest ☐ Ultrasound scan

Please specify any additional options here...

14a. Which pleural fluid samples were sent for analysis?
Answers may be multiple, please select all that apply

☐ Biochemistry ☐ Cytology/ histopathology
☐ Microbiology ☐ None of the above - not applicable

Please specify any additional options here...

14b. Were all appropriate samples sent at the time of drain insertion (pleural procedure)?

◯ Yes ◯ No ◯ Unknown

14c. If answered "No" to [14b] then:
If no, please explain your answer:

Ultrasound guidance

15a. Was ultrasound used to guide the procedure?

- ◯ Yes
- ◯ No
- ◯ Unknown
- ◯ Not applicable (pneumothorax)

15b. If answered "Yes" to [15a] then:
If yes, how was the ultrasound carried out?

- ◯ During/immediately prior to the procedure
- ◯ Site marked pre-procedure (e.g. in Radiology department)
- ◯ Unknown

If not listed above, please specify here...

16a. If answered "Yes" to [15a] then:
Was the operator for the procedure the same as the ultrasound operator?

- ◯ Yes
- ◯ No
- ◯ Unknown

16b. If answered "No" to [16a] then:
If not the same person, did the operating clinician have access to the ultrasound findings?

- ◯ Yes
- ◯ No
- ◯ Unknown

16c. If answered "No" to [16b] then:
If not, please give details:

17a. If answered "No" to [16a] then:
Ultrasound operator- grade:

- ◯ Consultant
- ◯ Resident trainee doctor: ST6-8
- ◯ Nurse specialist (AFC band 7-8)
- ◯ Radiographer (AFC band <6)
- ◯ Resident/ trainee doctor: ST3-5
- ◯ Nurse specialist (Other AFC band)
- ◯ Radiographer (AFC band 6-8)
- ◯ Unknown

If not listed above, please specify here...

17b. If answered "No" to [16a] then:
Ultrasound operator - specialty:

- ◯ Respiratory medicine
- ◯ Emergency medicine
- ◯ Interventional radiology
- ◯ Pleural nursing
- ◯ Radiographer
- ◯ Acute medicine
- ◯ Intensive / critical care medicine
- ◯ General medicine
- ◯ Radiology
- ◯ Anaesthesia
- ◯ Other nursing
- ◯ Unknown

If not listed above, please specify here...

18. If answered "Yes" to [15a] then:
Please list the ultrasound findings:
Answers may be multiple. Please select all that apply.

- ☐ Simple effusion (No additional findings)
- ☐ Complex effusion (Septation)
- ☐ Pleural thickening
- ☐ Lung consolidation

Please specify any additional options here...

19. Maximum depth of pleural fluid:

cm ☐ Not Applicable ☐ Unknown

20. Number of intercostal spaces that fluid was identified in:

◯ 1 ◯ 2 ◯ 3 ◯ >3

If not listed above, please specify here...

21. At the time of questionnaire completion, are ultrasound images saved and available for review?

◯ Yes ◯ No ◯ Unknown

Drain insertion/ drain position

22. Which drain insertion technique was employed?

◯ Seldinger ◯ Blunt dissection ◯ Unknown

If not listed above, please specify here...

23. What size drain was inserted?
(French gauge)

French ☐ Not Applicable ☐ Unknown

Value should be no more than 50

24. How was the skin sterilised?

◯ Iodine with alcohol 2% ◯ Chlorhexidine with alcohol 2% ◯ Unknown

If not listed above, please specify here...

25. What was the distance of the drain tip from the skin?

cm ☐ Not Applicable ☐ Unknown

26a. Was a follow up chest X-Ray performed to check the drain position?

◯ Yes ◯ No ◯ Unknown

26b. If answered "Yes" to [26a] then:
Date follow up chest X-Ray performed:

☐ Unknown

26c. If answered "Yes" to [26a] then:
Time follow up chest X-Ray performed:

☐ Unknown

27. Was the appropriate drain position confirmed in the case notes?

- ◯ Yes- drain in appropriate position
- ◯ Yes- drain not in appropriate position
- ◯ Position not documented
- ◯ Unable to answer

If not listed above, please specify here...

28a. If answered "Yes- drain not in appropriate position" to [27] then:
If the drain position was not appropriate, was the drain repositioned?

- ◯ Yes
- ◯ No
- ◯ Unknown

28b. If answered "Yes" to [28a] then:
Was this successful?

- ◯ Yes
- ◯ No
- ◯ Unknown

28c. If answered "Yes" to [28a] then:
Was this carried out by the same person?

- ◯ Yes, the same person
- ◯ No, someone less experienced
- ◯ No, someone more experienced
- ◯ No, someone with the same level of experoence
- ◯ Unknown

29a. Was the drain secured?

- ◯ Yes
- ◯ No
- ◯ Unknown

29b. If answered "Yes" to [29a] then:
How was the drain secured?
Answers may be multiple, please select all that apply

- ☐ Silk stay suture
- ☐ Proline stay suture
- ☐ Other braided stay suture
- ☐ Other non-braided stay suture
- ☐ Not recorded

Please specify any additional options here...

29c. If answered "Yes- drain in appropriate position" or "Yes- drain not in appropriate position" to [27] then:
Date that the drain position was confirmed:

☐ Unknown

29d. If answered "Yes- drain in appropriate position" or "Yes- drain not in appropriate position" to [27] then:
Time that the drain position was confirmed:

☐ Unknown

Anaesthesia/ pain management

30. Which type of anaesthesia/analgesia was used?

- ☐ Local anaesthetic
- ☐ Opioids e.g. codeine
- ☐ Paracetamol
- ☐ General anaesthetic
- ☐ Nonsteroidal anti-inflammatory drugs (NSAIDs)
- ☐ Unknown

Please specify any additional options here...

31a. If answered "Local anaesthetic" to [30] then: Which local anaesthetic was used?

- ◯ Lidocaine
- ◯ Levobupivacaine
- ◯ Not specified
- ◯ Bupivacaine
- ◯ Prilocaine
- ◯ N/A- local anaesthesia was not used

If not listed above, please specify here...

31b. If answered "Local anaesthetic" to [30] then: What volume of local anaesthetic was used?

ml ☐ Not Applicable ☐ Unknown

Value should be no more than 200

31c. If answered "Local anaesthetic" to [30] then: What strength of local anaesthetic was used?

- ◯ 0.25%
- ◯ 0.5%
- ◯ 1%
- ◯ 2%
- ◯ Not specified

If not listed above, please specify here...

32a. Was it documented that the patient was in pain at the time of the procedure?

- ◯ Yes
- ◯ No
- ◯ Unknown

32b. If answered "Yes" to [32a] then: Was a pain score recorded?

- ◯ Yes
- ◯ No
- ◯ Unknown

32c. If answered "Yes" to [32b] then: What was the pain score?

33. Was a specific pleural procedure/chest drain insertion proforma/ observation chart completed for this patient?

- ◯ Yes
- ◯ No, this does not exist locally
- ◯ No, this was not completed (unknown if this exists locally)
- ◯ No, this is available locally, but was not completed for this patient
- ◯ This was not fully completed for this patient

If not listed above, please specify here...

E. POST-PROCEDURE CARE

1. Where was immediate post-procedural care provided?

- ◯ Emergency department
- ◯ Acute medical unit
- ◯ Critical care unit
- ◯ Respiratory support unit
- ◯ Specialist respiratory ward
- ◯ General medical ward
- ◯ General surgical ward
- ◯ Acute respiratory care unit

If not listed above, please specify here...

2a. Was ward transfer required for specialised care after the pleural procedure/chest drain insertion?

- ◯ Yes
- ◯ No
- ◯ Unknown

2b. If answered "Yes" to [2a] then:
If yes, where was the patient transferred to?

- ◯ Emergency department
- ◯ Acute medical unit
- ◯ Critical care unit
- ◯ Respiratory support unit
- ◯ Specialist respiratory ward
- ◯ General ward
- ◯ Unknown

If not listed above, please specify here...

2c. If answered "Yes" to [2a] then:
Was the ward location appropriate for post-procedure/chest drain management?

- ◯ Yes
- ◯ No
- ◯ Unknown

2d. If answered "No" to [2c] then:
Please explain:

3a. Was a post-procedure plan documented?

- ◯ Yes
- ◯ No
- ◯ Unknown

3b. If answered "Yes" to [3a] then:
What was included in the post-procedure plan:
Answers may be multiple, please select all that apply:

- ☐ Drainage targets
- ☐ Flush
- ☐ Analgesia/ pain management
- ☐ Vital signs monitoring
- ☐ Chest X-Ray
- ☐ None of these

Please specify any additional options here...

4. How long was the chest drain/ tube in place?
Round up to number of whole days

days ☐ Unknown

5. Was a target rate of drainage recorded in the notes?

- ◯ Yes
- ◯ No
- ◯ Unknown
- ◯ Not applicable (pneumothorax)

6a. If answered "Yes", "No" or "Unknown" to [5] then:
How much fluid drained in 1 hour?

mls ☐ Not Applicable ☐ Unknown

6b. If answered "Yes" to [5] then:
Was this greater than proposed?

◯ Yes ◯ No ◯ Unknown

6c. If answered "Yes", "No" or "Unknown" to [5] then:
How much fluid drained in 4 hours?

mls ☐ Not Applicable ☐ Unknown

6d. If answered "Yes" to [5] then:
Was this greater than proposed?

◯ Yes ◯ No ◯ Unknown

6e. If answered "Yes", "No" or "Unknown" to [5] then:
How much fluid drained in 24 hours?

mls ☐ Not Applicable ☐ Unknown

6f. If answered "Yes" to [5] then:
Was this greater than proposed?

◯ Yes ◯ No ◯ Unknown

7a. Was the drain clamped at any stage after insertion?

◯ Yes ◯ No ◯ Unknown ◯ Not applicable

7b. If answered "Yes" to [7a] then:
Date first clamped:

☐ Unknown

7c. If answered "Yes" to [7a] then:
Time first clamped:

☐ Unknown

---

8. How many times per day was a drain flush prescribed?
If none prescribed, tick 'not applicable'

☐ Not Applicable ☐ Unknown

---

9. What dressing was used to cover the drain?

◯ Opsite ◯ Mepore ◯ Loose swabs

If not listed above, please specify here...

---

10. Was the drain site checked (for signs of bleeding, infection, leakage) at least daily while in place?

◯ Yes ◯ No ◯ Unknown

11a. Was analgesia administered post-operatively?

◯ Yes ◯ No ◯ Unknown

11b. If answered "Yes" to [11a] then:
Which analgesics were administered post-procedure:
Answers may be multiple, please select all that apply

☐ NSAIDS ☐ Paracetamol ☐ Opiods ☐ Not Recorded

Please specify any additional options here...

12. Was a pain score used?

◯ Yes ◯ No ◯ Unknown

13. Was the pain team involved in the patient's care post-operatively?

◯ Yes ◯ No ◯ Unknown

14a. In your opinion, was there any room for improvement in the care provided post-procedure?

◯ Yes ◯ No ◯ Unknown

14b. If answered "Yes" to [14a] then:
Please provide details:

F. SUBSEQUENT PLEURAL PROCEDURES

1a. Did this patient have any subsequent drain insertions/ pleural procedures during this admission?

◯ Yes ◯ No ◯ Unknown

1b. If answered "Yes" to [1a] then:
How many additional times did a pleural procedure take place during the admission?

☐ Not Applicable ☐ Unknown

If multiple additional procedures took place, please choose the one drain insertion from which the most learning is possible
(in order to answer the following questions in this section)

3a. If answered "Yes" to [1a] then:
What was the site of the additional pleural procedure?

3b. If answered "Yes" to [1a] then:
Date of additional pleural procedure:

☐ Unknown

3c. If answered "Yes" to [1a] then:
Time of additional pleural procedure:

☐ Unknown

4. If answered "Yes" to [1a] then:
What was the location of the additional pleural procedure?

◯ Emergency department ◯ General medical Ward ◯ Surgical Ward
◯ Critical care (ICU/ HDU) ◯ Unknown

If not listed above, please specify here...

5. If answered "Yes" to [1a] then:
What was the grade of the operating clinician for the additional pleural procedure?

◯ Consultant ◯ Resident/ Trainee doctor (ST7-8)
◯ Resident / Trainee doctor (ST6-7) ◯ Consultant nurse specialist (AFC band 7-8)
◯ Resident / Trainee doctor (ST3-6)
◯ Resident / Trainee doctor (◯ Other nurse specialist

If not listed above, please specify here...

6. If answered "Yes" to [1a] then:
What was the specialty of the operating clinician for the additional pleural procedure?

◯ Respiratory Medicine ◯ Emergency Medicine ◯ Acute Medicine
◯ General Surgery ◯ Interventional radiology ◯ Critical care medicine
◯ Pleural nursing ◯ General medicine ◯ General nursing
◯ Unknown

If not listed above, please specify here...

7a. If answered "Yes" to [1a] then:
What was the indication for chest drain insertion?

◯ Pleural effusion ◯ Pneumothorax ◯ Pleural infection

If not listed above, please specify here...

7b. If answered "Yes" to [1a] then:
Was ultrasound used appropriately in this subsequent procedure?

◯ Yes ◯ No ◯ Unknown

7c. If answered "No" to [7b] then:
Please provide further details:

8. If answered "Yes" to [1a] then:
Was the dedicated pleural disease service at this hospital involved in the additional pleural procedure carried out?
Please select the statement that best fits or select "Other" to enter a custom answer

◯ Yes, The pleural disease service were involved
◯ No, There is no dedicated pleural disease service at this hospital
◯ No, There is a dedicated pleural disease service at this hospital, but they were not available at this tim
◯ No, There is a dedicated pleural disease service at this hospital, but their involvement was not require
◯ Unknown

If not listed above, please specify here...

9a. If answered "Yes" to [1a] then:
Regarding the additional pleural procedure that took place, please list any areas for improvement:

☐ Pre-operative investigations
☐ Anaesthesia
☐ Safety checklist
☐ Use of ultrasound scans
☐ Observations
☐ Consent
☐ The drain insertion
☐ Securing the drain
☐ Complications of the procedure

Please specify any additional options here...

9b. If answered "Yes" to [1a] then:
Please expand on your answer(s) in the space provided:

G. COMPLICATIONS/DISCHARGE/REVIEW

Complications

1a. Were there any pleural procedure/chest drain related complications?

◯ Yes ◯ No ◯ Unknown

1b. If answered "Yes" to [1a] then:
If yes, were these complications:

◯ Immediate (within 4 hours) ◯ Delayed (> 4 hours) ◯ Both
◯ Unknown

1c. If answered "Yes" to [1a] then:
If yes, which of the following complications occurred?
Answers may be multiple. Please select all that apply.

- ☐ Incorrect site
- ☐ Re-expansion pulmonary oedema
- ☐ Pneumothorax
- ☐ Infection
- ☐ Inappropriate clamping
- ☐ Patient discomfort (persistent cough)
- ☐ Haemorrhage/ bleeding
- ☐ Organ puncture
- ☐ Shock
- ☐ Surgical emphysema
- ☐ Disconnection
- ☐ Accidental drain removal
- ☐ Patient discomfort (persistent pain)
- ☐ Significant haemorrhage/ bleeding

Please specify any additional options here...

1d. If answered "Yes" to [1a] then:
In your opinion, were any of these complications reportable?

◯ Yes ◯ No ◯ Unknown

1e. If answered "Yes" to [1d] then:
If Yes, were they reported?

◯ Yes ◯ No ◯ Unknown

1f. If answered "Yes" to [1a] then:
Did the patient suffer "harm" from the complication?

◯ Yes ◯ No ◯ Unknown

1g. If answered "Yes" to [1f] then:
Please provide details:
Including the key points of the investigation / report and any learning that resulted

2a. If answered "Yes" to [1a] then:
In your opinion, were all drain related complications dealt with appropriately?

◯ Yes ◯ No ◯ Unknown

2b. If answered "No" to [2a] then:
If no, please explain:

Incident reporting

3a. Was an incident reported in relation to this case?

◯ Yes ◯ No ◯ Unknown

3b. If answered "Yes" to [3a] then:
If yes, was this related to the chest drain/pleural procedure?
**If multiple pleural procedures were undertaken during the admission, then was it related to any of them?*

◯ Yes ◯ No ◯ Unknown

3c. If answered "Yes" to [3b] then:
Please provide a brief summary of the incident that was reported?
relating to the pleural procedure/chest drain)

4. If answered "Yes" to [3a] then:
Were all appropriate actions taken as a result of the investigation?

◯ Yes ◯ No ◯ Unknown

5. If answered "Yes" to [3a] then:
Were any QI or departmental changes as part of the incident?

◯ Yes ◯ No ◯ Unknown

6a. Did any incident / harm occur that was not reported?
At any time during the admission

◯ Yes ◯ No ◯ Unknown

6b. If answered "Yes" to [6a] then:
Please provide details:
Including the key points of the investigation / report and any learning that resulted

7a. In your opinion are there any additional lessons that can be learned from this case?
After review of the case notes, the reported incident, and the investigating manager's response (if you have access to this)

◯ Yes ◯ No ◯ Unknown

7b. If answered "Yes" to [7a] then:
If so, please explain:

Drain removal

8a. What was the date the drain was removed?

☐ Not Applicable ☐ Unknown

8b. What was the time that the drain was removed?

☐ Not Applicable ☐ Unknown

9. Was drain removal:

◯ Planned
◯ Unplanned (e.g. drain fell out and was not replaced)
◯ Unknown

10a. Were there any complications of drain removal?

◯ Yes ◯ No ◯ Unknown

10b. If answered "Yes" to [10a] then:
If yes, please explain:

11a. Did the drain need to be reinserted?
At any time during the admission

◯ Yes ◯ No ◯ Unknown

11b. If answered "Yes" to [11a] then:
What was the date that the drain was re-inserted?

☐ Not Applicable ☐ Unknown

11c. If answered "Yes" to [11a] then:
What was the time that the drain was reinserted?

☐ Not Applicable ☐ Unknown

Discharge/ outcome

12a. Did the patient survive to discharge?

◯ Yes ◯ No ◯ Unknown

12b. If answered "Yes" to [12a] then:
What was the discharge destination for this patient?

◯ Usual residence ◯ Other hospital ◯ Hospice
◯ Sheltered accommodation

If not listed above, please specify here...

12c. If answered "Yes" to [12a] then:
Did this patient die within 30 days of discharge form hospital?

◯ Yes ◯ No ◯ Unknown

12d. If the patient died, what was the primary cause of death?
Please list 1a cause of death; If not applicable please leave blank

12e. If the patient died, was there any possible link to the periprocedural care provided at the time of chest drain insertion/ pleural procedure?

◯ Yes ◯ No ◯ Unknown ◯ Not applicable

12f. If answered "Yes" to [12e] then:
Please provide details:

12g. Was this patient's care discussed at a mortality & morbidity (M&M) meeting?

◯ Yes ◯ No ◯ Unknown

Follow up appointment

13a. Was a follow-up appointment made for this patient?

◯ Yes ◯ No ◯ Unknown

13b. If answered "Yes" to [13a] then:
Was the follow-up appointment carried out as part of a:-

◯ Specialist pleural clinic ◯ Respiratory medicine clinic ◯ General clinic
◯ Unknown

If not listed above, please specify here...

13c. If answered "Yes" to [13a] then:
What was the interval between discharge and follow-up appointment?

◯ < 2 weeks ◯ 2-4 weeks ◯ >4-6 weeks ◯ >6-8 weeks
◯ >8 weeks- 4 months ◯ >4-6 months ◯ > 6 months

13d. If answered "Yes" to [13a] then:
Did the patient attend the follow-up appointment?

◯ Yes ◯ No ◯ Unknown

Readmission to hopsital
(within 30 days)

14a. Was the patient readmitted to hospital within 30 days of discharge?
Including the key points of the investigation / report and any learning that resulted

◯ Yes ◯ No ◯ Unknown

14b. If answered "Yes" to [14a] then:
Was the reason for readmission related to the pleural procedure?
After review of the case notes, the reported incident, and the investigating manager's response (if you have access to this)

◯ Yes ◯ No ◯ Unknown

14c. If answered "Yes" to [14b] then:
Please provide details:

15. After your review of the case notes, were there any aspects of care not already listed that you think should be highlighted for improvement?

16. **If you would like any of the following to be sent to you, please enter your email address (and a note of which information you are requesting) in the box below: -a link to the clinician survey, -a link to the patient/carer survey, -a copy of the report at publication**

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS QUESTIONNAIRE By doing so you have contributed to the dataset that will form the report and recommendations due for release in late 2026