

Pleural Procedure Policy (Adults)



Title:			
Pleural Procedure Policy (Adults)			
Date effective from:	26/06/2019	Review date:	26/06/2022
Approved by:	Policy Approval Group		
Approval Date:	25 June 2019		
Author/s:	Consultant Respiratory Physician, WGH		
Policy Owner:	NHS Lothian Pleural Group		
Executive Lead:	Executive Medical Director		
Target Audience:	All teams caring for adult inpatients in NHS Lothian, medical staff who have competencies in the insertion of chest drains and for medical and nursing staff who manage patients with chest drains		
Supersedes:	Pleural Procedure Policy 2015		
Keywords (min. 5):	Pleural, chest drain, effusion, pneumothorax, empyema		

Pleural Procedure Policy (Adults)



Version Control

Date	Author	Version/Page	Reason for change
140119	Consultant Respiratory Physician, WGH	V1.0	Due for review
25/06/2019	Consultant Respiratory Physician, WGH	V2.0	Approved

Executive Summary

Pleural procedures (especially intercostal drain insertion) performed in the investigation and management of pleural effusion and pneumothorax can cause significant harm and should only be performed by a competent practitioner.

A competent practitioner is a healthcare professional who:

- Has received theoretical education in thoracic anatomy, respiratory physiology, pleural disease and pleural techniques
- Has attended skills workshops, been trained in pleural procedures and undertaken simulated pleural procedures
- Has been appropriately supervised and subsequently signed off as competent (by a competent practitioner) in the performance of pleural procedures and has evidence (e.g., formative and summative DOPS) to prove this

In the case of procedures for pleural effusion a competent practitioner must also be trained in thoracic ultrasound to Royal College of Radiologists (RCR) Level 1 or Focused thoracic ultrasound standard

When these procedures are undertaken as part of training there must be appropriate education beforehand and close supervision of the trainee by a competent practitioner during the procedure.

Contents

	Page number
1.0 <u>Purpose</u>	4
2.0 <u>Policy statement</u>	4
3.0 <u>Scope</u>	8
4.0 <u>Definitions</u>	8
5.0 <u>Implementation roles and responsibilities</u>	8
6.0 <u>Associated materials</u>	8
7.0 <u>Evidence base</u>	8
8.0 <u>Stakeholder consultation</u>	8
9.0 <u>Monitoring and review</u>	9

1.0 Purpose

The aim of this policy is to ensure the safe performance of pleural procedures across all sites and departments in NHS Lothian.

2.0 Policy statement

This policy describes the process of managing a patient with suspected pleural effusion and/or pneumothorax, both within and outside of normal working hours

Any patient in whom a chest drain has been inserted should be cared for on a ward with nursing staff trained in the care of chest drains, and under the care (which may be joint) of a cardiothoracic surgeon, anaesthetist or chest physician.

3.0 Scope

This policy refers only to adult patients. This policy is for all medical and nursing staff who have competencies in the insertion of chest drains and for medical and nursing staff who manage patients with chest drains. These procedures are usually carried out in the emergency department or in ward environments such as: Respiratory, Cardiothoracics, HD/ITU or Oncology.

4.0 Definitions

'Outside of Office Hours' (OOH) - will differ depending on specialty and site but for the purpose of this policy refers to situations where the pleural procedure and post care management cannot be carried out within daytime staffing hours.

Pneumothorax (PTX) – A collection of air outside the lung in the pleural space. It may be primary (no respiratory disease), secondary (in the context of respiratory disease), traumatic (in the setting of trauma e.g. Road traffic accident) or iatrogenic (e.g., following lung biopsy, pacemaker or entral line insertion)

Ultrasound scan (USS) – In this document refers to thoracic ultrasound scanning

Intercostal chest drain insertion – this may be blunt dissection or Seldinger technique

Pleural effusion – A collection of fluid outside the lung in the pleural space

ATLS (certification)- Advanced trauma life support

5.0 Implementation roles and responsibilities

Consultants and senior nursing staff are responsible for ensuring that the policy is implemented in their individual departments. It is the individual responsibility of all medical and nursing staff to ensure that they implement and comply with this policy.

The Lothian pleural group will convene every six months to review all reported critical incidents involving chest drains. This will be in addition to the existing process for the investigation of critical incidents. The pleural group will meet annually to review this policy, and update where necessary.

5.1 Pneumothorax

5.1.1 Following Trauma

Following trauma the recognition of a possible pneumothorax (PTX) is an indication for the urgent involvement of a chest drain competent registrar or consultant (usually Emergency Medicine, cardiothoracic surgeon or an appropriate member of the Trauma team response).

5.1.2 In a ventilated patient

In a ventilated patient the presence of a PTX is an indication for the urgent involvement of consultant staff clinically responsible for the patient in that area. All areas where patients are ventilated must be able to provide resident staff trained to ATLS standard, or who have received appropriate training from another department (e.g., respiratory, cardiothoracics, ITU) and have subsequent recorded evidence of competence under clinical supervision.

5.1.3 Within office hours and excluding patients in the Emergency Department and ITU

All patients with PTX of a size sufficient for consideration of drainage should be referred either to the cardiothoracic team:

- Traumatic PTX and Haemothorax

or to the respiratory medicine team (all others) for an opinion and further management.

In the Emergency Department and ITU, competent practitioners will undertake initial emergency management in accordance with guidelines prior to referral if required.

Where there is extensive bullous disease or where there is doubt about the presence of a PTX a radiological opinion should be sought. CT-guided ICD insertion is sometimes the only safe procedure.

5.1.4 Outside of office hours and excluding patients in the Emergency Department and ITU

Outside of office hours and excluding patients in the Emergency Department and ITU patients with PTX of a size sufficient for consideration of drainage should be discussed either with the consultant physician on-call, the on-call respiratory consultant or the on-call respiratory registrar, unless:

(a) the patient is severely compromised (e.g. tension pneumothorax which should be treated emergently), or;

(b) there is a history of recent trauma (discuss with A+E or cardiothoracics). This includes patients being treated at the WGH and SJH sites.

In the Emergency Department and ITU, competent practitioners will undertake initial emergency management in accordance with guidelines prior to referral if required.

Where there is extensive bullous disease or where there is doubt about the presence of a PTX a radiological opinion should be sought. CT-guided ICD insertion is sometimes the only safe procedure.

5.1.5 Chest drains

Chest drains should not be inserted unless the operator has been trained and deemed competent in the procedure. Each Directorate will approach the issue of training and competence in a fashion that reflects their specialty.

In the Emergency Department operators will have received ATLS training and been deemed competent following supervised procedures.

In Cardiothoracics operators will have received training and supervision in theatre and on the cardiothoracic ward by competent practitioners.

In medicine the operator will have received training by the Respiratory Medicine pleural service or the clinical skills mastery team and been deemed competent by his/her supervising consultant. Other Directorates will make their own arrangements but must ensure that training has been provided, and that the operator has been formally assessed as being competent in the procedure, before being allowed to practice independently.

5.1.6 Chest drain insertion technique

In medicine the chest drain insertion technique used will be the Seldinger technique, for pleural effusions/PTX. In medicine, the Respiratory Team will also insert chest drains using the blunt dissection technique.

5.1.7 In an emergency situation

In an emergency situation, on all sites, the duty medical registrar, or on-call respiratory registrar should be summoned – depending on the availability of a competent practitioner. In an acute emergency where the medical registrar is not competent and where the respiratory registrar cannot attend promptly, the on-call ITU team should be called. For tension PTX, a venflon or therapeutic aspiration device should be inserted anteriorly in the 2nd intercostal space in the mid-clavicular line. This will give time for appropriately qualified staff to arrive, and where this is delayed, a blood giving set can be used to fashion an underwater seal.

5.1.8 For patients on HDU and ITU

For patients on HDU and ITU in whom the PTX is loculated, or is failing to expand after insertion of a chest drain, the on-call radiologist may be contacted for consideration of a CT scan to localise the PTX and assist with drain placement.

5.1.9 Following tube insertion

Following tube insertion the patient must be cared for in a facility where there are nursing staff trained to manage a chest drain. This includes the respiratory medicine wards, cardiothoracic wards, ITU, Neuro HDU, HDU, Oncology and the Emergency Department.

5.2 Pleural effusions

No pleural procedures should be performed for pleural effusion unless a bed-side USS of the thorax has been performed or supervised by a level 1 USS trained practitioner or a practitioner trained in focused ultrasound for pleural procedures.

5.2.1 For all patients

For all patients with a new pleural effusion a diagnostic tap or therapeutic aspiration of the fluid should usually be undertaken prior to proceeding to insertion of a chest drain.

5.2.2 In medical patients

In medical patients it must be noted at the outset that pleural effusions usually take a long time to develop and that there is seldom urgency for these to be drained without time to obtain a specialist opinion from the respiratory medicine team.

Following trauma the situation is completely different and the recognition of a possible effusion/haemothorax in this context is an indicator for the urgent involvement of a chest drain competent registrar or consultant (usually Emergency Medicine, cardiothoracic surgeon or an appropriate member of the Trauma team response)

5.2.3 Within office hours

Patients who can be ambulated should be referred to the respiratory registrar or consultant on-call who will either arrange therapeutic/diagnostic aspiration and ongoing outpatient follow up or will arrange review at pleural clinic.

Patients requiring admission with a pleural effusion of a size sufficient for consideration of drainage should be discussed with the respiratory medicine team or the cardiothoracic team (according to indications described above).

This excludes:

1. patients with known malignant effusion who should also be discussed with the relevant consultant oncologist for guidance with regard to the need for a pleural procedure.
2. patients with traumatic haemothorax in the Emergency Department.

5.2.4 Outside of office hours

Outside of office hours there is virtually never a good indication for tube drainage of a pleural effusion. Ambulant, minimally symptomatic patients can be referred to the pleural service by contacting the on-call respiratory registrar at RIE, by emailing pleuralservice.wgh@nhslothian.scot.uk at WGH or by contacting the on-call respiratory consultant at SJH. They will be booked for a diagnostic/therapeutic procedure within 1 week. Where a competent practitioner is available more symptomatic patients can be managed by therapeutic thoracocentesis. In the exceptional event that a drain is considered necessary, the case should be discussed with the consultant physician on call (medical patients), respiratory registrar on-call or the cardiothoracic registrar (surgical patients) unless there is a history of recent trauma.

The exceptions to this would be a complicated parapneumonic effusion (Empyema), which requires drainage within 24 hours. Out of hours tube drainage must only be performed by competent personnel. At weekends this should be undertaken during daylight hours, if possible.

5.2.5 Chest drain insertion

A chest drain should not be inserted unless the operator has been trained and deemed competent in the procedure. Each Directorate will approach the issue of training and competence in a fashion that reflects their specialty.

In the Emergency Department operators will have received ATLS training and been deemed competent following supervised procedures.

In Cardiothoracics operators will have received training and supervision in theatre and on the cardiothoracic ward by competent practitioners.

In medicine the operator will have received training by the Respiratory Medicine pleural service or the clinical skills mastery team and been deemed competent by his/her supervising consultant. Other Directorates will make their own arrangements but must ensure that training has been provided, and that the operator has been formally assessed as being competent in the procedure, before being allowed to practice independently.

5.2.6 Technique

The technique used should be that recommended by the British Thoracic Society.

5.2.7 In an emergency situation

In an emergency situation either the duty medical registrar, on-call respiratory registrar or duty cardiothoracic surgery registrar should be summoned - who will be competent according to one of the above criteria.

5.2.8 Ultrasound or further radiological support

Ultrasound or further radiological support will be valuable even for USS-trained practitioners and the duty radiologist may be contacted in the following situations:

- If there is doubt about the USS/radiological appearance
- If the effusion is loculated
- If there is significant bullous lung disease

5.2.9 Following tube insertion

Following tube insertion the patient must be cared for in a facility where there are nursing staff trained to manage a chest drain. This includes the respiratory medicine wards, cardiothoracic wards, ITU, Neuro HDU, HDU, Oncology and the Emergency Department.

6.0 Associated materials

[RCR Thoracic USS for medical specialties – Focused and Level 1 USS](#)

[Pleural Procedures Clinical Decision Pathway](#)

[NHS Lothian Pleural Service intranet pages](#)

7.0 Evidence base

[British Thoracic Society Pleural Guidelines](#)

8.0 Stakeholder consultation

In 2015 a short-life working group with representatives from emergency medicine, respiratory medicine, ITU, cardiothoracics and radiology was convened to review practice with regard to pleural procedures within NHS Lothian. The findings of this group were widely publicised and a concise, single page procedure flow diagram was developed and publicised - [Pleural Procedures Clinical Decision Pathway](#). In addition, the first draft of this more comprehensive Pleural Procedures Policy was produced and disseminated to key stakeholders.

At the Royal Infirmary key stakeholders including respiratory medicine, emergency department, ITU, cardiothoracics, acute medicine and gastroenterology met to discuss the implementation of these guidelines. Within medicine it was agreed that all patients with chest drains not requiring HDU/ITU care should be managed on the respiratory ward. The pleural service would be the key point of contact for pleural procedures.

At the Western General Hospital the response to this document was the devolvement of all pleural procedures out with the ITU setting to the local pleural service. This was discussed and agreed with service managers and department heads from radiology, oncology, haematology, acute medicine and infectious diseases.

At St John's Hospital pleural procedures are performed by the pleural service, emergency department staff or ITU staff. The pleural service holds a weekly MDT and clinic.

9.0 Monitoring and review

The Lothian pleural group will convene every six months to review all reported critical incidents involving chest drains. This will be in addition to the existing process for the investigation of critical incidents. The pleural group will meet annually to review this policy and update it where necessary.