

BLOOD PLEURODESIS

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

If a patient is not considered fit for surgery, autologous blood pleurodesis should be considered for the treatment of pneumothorax with persistent air leak in adults (Roberts et al, 2023).

This guideline is for use by the following staff groups:

Pleural specialists

Lead Clinician(s)

Clare Hooper

Consultant Physician, Respiratory
Medicine

Approved by *Respiratory Directorate* on:

As per Respiratory chairmans
actions outside formal Respiratory
Directorate Meeting
13th February 2026

Approved by *DMB* on:

25th February 2026

Approved by *Medicines Safety Committee* on:

17th March 2026

This guideline should not be used after end of:
This is the most current document and should be
used until a revised version is in place

17th March 2029

Key amendments to this guideline

Date	Amendment	Approved by:
June 2019	New Document approved	Respiratory DMB
April 2023	Document reviewed and approved	Respiratory DMB
January 2026	Reference updated	Respiratory DMB

BLOOD PLEURODESIS

Introduction

Give a more in depth introduction to the guideline, including the reason for its production and why it is important.

1. BLOOD PLEURODESIS

1.1 Pleurodesis of any sort should only be used in patients with recurrent pneumothorax or persistent air leak (at least more than 5 days) who are unable to undergo surgery. Specialist opinion and recommendation is essential.

1.1.1 Blood pleurodesis has several theoretical advantages over Talc. It can be used even if the lung is not fully expanded, it reportedly causes less pleural thickening and adhesions, it is readily available, and it does not cause pain or long term sequelae. It is also the only non-surgical technique which has been associated with a rapid resolution of persistent air leak (Ando et al 1999).

1.1.2 Prolonged air leaks are undesirable as they prolong the duration of chest tube drainage with associated pain and risk of infection and prolong hospitalisation (Cagirici et al 1998).

1.1.3 The mechanism of action of autologous blood patch pleurodesis is unknown. It is possible that the air leak is directly sealed by the formation of a clot and subsequently the fibrogenic activity of the blood creates a pleurodesis by pleural irritation and inflammation (Manley et al (2012).

1.1.4 The volume of blood used varies in practice. Studies however suggest that 100ml is more effective than 50ml (Andreotti et al 2007)

Details of Guideline

PROCEDURE

EQUIPMENT REQUIRED

- **3 x 50ml luer lock syringe**
- **Green needle**
- **Sterile gloves**
- **Dressing trolley**
- **2 x Sterile field**
- **apron**
- **Chlorhexidine**
- **2 x 3 way taps with fir tree connectors**
- **extension tubing for chest drain**
- **Drip stand**
- **20ml 0.9% sodium chloride flush (Must be prescribed if given by non-prescriber)**
- **Large 0.9% sodium chloride (50ml) (in case of thrombus formation – tension pneumothorax) (Must be prescribed if given by non-prescriber)**
- **Spare chest drain kit (in case of emergency)**

PROCEDURE	RATIONALE	WHO
Provide patient with information leaflet	To ensure co-operation and make aware of risks and benefits	Pleural specialist
Obtain written consent	To gain patients consent and co-operation	Pleural specialist
Prepare sterile trolley with all equipment	To ensure all equipment remains sterile and is prepared prior to procedure	Pleural specialist
Position patient in lateral or sitting position	To ensure comfort during procedure	Pleural specialist
Record baseline observations/NEWS score	To enable assessment of patients condition during/ after the procedure	Staff nurse
Wash hands, apply apron and sterile gloves	To minimise risk of infection	Pleural specialist
Prepare sterile field underneath the 3-way tap	To enable sterile access to drainage port	Pleural specialist
Add extension tubing between chest drain and underwater seal using additional 3-way tap connector and fir-tree adapters	To minimise the risk of blood clotting in the tube and possible tension pneumothorax and to retain autologous blood in the pleural cavity and allow any air to escape	Pleural specialist
Take 50-100ml of the patients own blood under aseptic conditions	To use as pleurodesis agent	Pleural specialist
Sterilise the chest drain 3-way tap with chlorhexidine and immediately inject the patients blood into the pleural cavity	To minimise risk of infection and administer pleurodesis agent	Pleural specialist
Follow with 20ml sodium chloride 0.9% flush (Must be prescribed if given by non-prescriber)	To minimise risk of thrombus in the tube causing tension pneumothorax	Pleural specialist
Loop the extension tubing over a drip stand	To minimise the risk of blood clotting in the tubing and possible tension pneumothorax	Pleural specialist

Inform Staff nurse of procedure and perform 30 minute NEWS recording for 4 hours	To monitor for adverse reaction/tension pneumothorax	Pleural specialist/staff nurse
Document procedure in medical notes	For evidence of procedure and any complications	Pleural specialist
After 4 hours shorten the drainage tube to its original length and leave overnight	To return circuit to standard as procedure completed	Staff nurse
If no further bubbling, perform CXR	To check for resolution	Pleural specialist
If continued air leak may consider up to maximum of three blood pleurodesis attempts	Aim to stop recurrent air leak and resolve pneumothorax	Pleural specialist

It is the responsibility of every individual to ensure this is the latest version as published on the Trust Intranet

Monitoring Tool

This should include realistic goals, timeframes and measurable outcomes.

How will monitoring be carried out?

Who will monitor compliance with the guideline?

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: <i>(Responsible for also ensuring actions are developed to address any areas of non-compliance)</i>	Frequency of reporting:
	WHAT?	HOW?	WHEN?	WHO?	WHERE?	WHEN?
	Procedure performed in accordance to protocol	Analysis of patient case notes	annual	ANP	Dr C Hooper	Yearly

References

All references should be 'Harvard' referenced, eg,

A book by a single author:

1. Seedhouse, D. (1997) *Health promotion: philosophy, prejudice and practice*. Chichester, John Wiley.
2. Ando M, Yamamoto M, Kitagawa C et al (1999) Autologous blood-patch pleurodesis for secondary spontaneous pneumothorax with persistent air leak *Respiratory Medicine* 93:432-4
3. Andreeti C, Venuta F, Anile M et al (2007) Pleurodesis with an autologous blood patch to prevent persistent air leaks after lobectomy *Journal of Cardiovascular Surgery* 133: 759-62
4. Cagirici U, Sahin B, Cakan A, Kabayas H, Budunelli T. 1998) Autologous blood patch pleurodesis in spontaneous pneumothorax with persistent air leak. *Scand Cardiovasc J.* , 32: 75-8. 10.1080/14017439850140210. [View ArticlePubMedGoogle Scholar](#)
5. Lang-Lazdunski L, Coonar AS: (2004) A prospective study of autologous 'blood patch' pleurodesis for persistent air leak after pulmonary resection. *Eur J Cardiothorac Surg.* 26: 897-900. 10.1016/j.ejcts.2004.07.034.
6. Manley K, Coonar A, Wells F et al (2012) Blood patch for persistent air leak: a review of the current literature. *Current Opinion Pulmonary Medicine* 18:333-8
7. Roberts ME, Rahman NM, Maskell NA, et al. (2023) *Thorax*; 78:1143–1156.

WAHT-RES-034

It is the responsibility of every individual to ensure this is the latest version as published on the Trust Intranet

Contribution List

This key document has been circulated to the following individuals for consultation;

Designation
Dr Clare Hooper
Heather Lloyd
Danielle Stocker

This key document has been circulated to the chair(s) of the following committee's / groups for comments;

Committee
Respiratory DMB

WAHT-RES-034

It is the responsibility of every individual to ensure this is the latest version as published on the Trust Intranet

Supporting Document 1 - Equality Impact Assessment Tool

Equality and Health Inequalities Impact Assessment (EHIA) Tool

Herefordshire & Worcestershire STP - Equality and Health Inequalities Impact Assessment (HEIA) Form

Please read HEIA guidelines when completing this form

Section 1 - Name of Organisation (please tick)

Herefordshire & Worcestershire STP		Herefordshire Council		Herefordshire CCG	
Worcestershire Acute Hospitals NHS Trust	x	Worcestershire County Council		Worcestershire CCGs	
Worcestershire Health and Care NHS Trust		Wye Valley NHS Trust		Other (please state)	

Name of Lead for Activity	Heather Lloyd/Dr Clare Hooper
----------------------------------	--------------------------------------

Details of individuals completing this assessment	Name	Job title	e-mail contact
	Heather Lloyd	Pleural Lead Nurse	heather.lloyd5@nhs.net
Date assessment completed	22/01/2026		

Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	Title: Blood Pleurodesis			
What is the aim, purpose and/or intended outcomes of this Activity?	To definitively manage pneumothorax with persistent air leak			
Who will be affected by the development & implementation of this activity?	<input type="checkbox"/>	Service User	<input type="checkbox"/>	Staff
	x	Patient	<input type="checkbox"/>	Communities
	<input type="checkbox"/>	Carers	<input type="checkbox"/>	Other _____
	<input type="checkbox"/>	Visitors	<input type="checkbox"/>	
Is this:	x Review of an existing activity <input type="checkbox"/> New activity <input type="checkbox"/> Planning to withdraw or reduce a service, activity or presence?			

What information and evidence have you reviewed to help inform this assessment? (Please name sources, eg demographic information for patients / services / staff groups affected, complaints etc.	No barriers or negative impacts identified
Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)	Procedure is only performed in selected cases and under specific circumstances
Summary of relevant findings	No barriers or negative impacts identified

Section 3

Please consider the potential impact of this activity (during development & implementation) on each of the equality groups outlined below. **Please tick one or more impact box below for each Equality Group and explain your rationale.** Please note it is possible for the potential impact to be both positive and negative within the same equality group and this should be recorded. Remember to consider the impact on e.g. staff, public, patients, carers etc. in these equality groups.

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Age		Yes		N/A
Disability		Yes		N/A
Gender Reassignment		Yes		N/A
Marriage & Civil Partnerships		Yes		N/A
Pregnancy & Maternity		Yes		N/A
Race including Traveling Communities		Yes		N/A
Religion & Belief		Yes		N/A
Sex		Yes		N/A
Sexual Orientation		Yes		N/A
Other Vulnerable and Disadvantaged		Yes		N/A

WAHT-RES-034

It is the responsibility of every individual to ensure this is the latest version as published on the Trust Intranet

Equality Group	Potential <u>positive</u> impact	Potential <u>neutral</u> impact	Potential <u>negative</u> impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Groups (e.g. carers; care leavers; homeless; Social/Economic deprivation, travelling communities etc.)				
Health Inequalities (any preventable, unfair & unjust differences in health status between groups, populations or individuals that arise from the unequal distribution of social, environmental & economic conditions within societies)		Yes		N/A

Section 4

What actions will you take to mitigate any potential negative impacts?	Risk identified	Actions required to reduce / eliminate negative impact	Who will lead on the action?	Timeframe
	None identified			
How will you monitor these actions?				
When will you review this EIA? (e.g in a service redesign, this EIA should be revisited regularly throughout the design & implementation)				

Section 5 - Please read and agree to the following Equality Statement

1. Equality Statement

1.1. All public bodies have a statutory duty under the Equality Act 2010 to set out arrangements to assess and consult on how their policies and functions impact on the 9 protected characteristics: Age; Disability; Gender Reassignment; Marriage & Civil Partnership; Pregnancy & Maternity; Race; Religion & Belief; Sex; Sexual Orientation

1.2. Our Organisations will challenge discrimination, promote equality, respect human rights, and aims to design and implement services, policies and measures that meet the diverse needs of our service, and population, ensuring that none are placed at a disadvantage over others.

1.3. All staff are expected to deliver services and provide services and care in a manner which respects the individuality of service users, patients, carer's etc, and as such treat

them and members of the workforce respectfully, paying due regard to the 9 protected characteristics.

Signature of person completing EIA	Heather Lloyd
Date signed	22/01/2026
Comments:	
Signature of person the Leader Person for this activity	
Date signed	
Comments:	



Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval