

## Insertion of pleurx catheters for the management of malignant ascites in advanced/palliative cancers

<b>Key Document code:</b>	WAHT-TP-027	
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<b>Approved by:</b>	Gynaecology Governance Meeting	
<b>Date of Approval:</b>	14 <sup>th</sup> December 2020	
<b>Date of review:</b>	20 <sup>th</sup> February 2025	
<b>This is the most current version and should be used until a revised document is in place</b>		

### Key Amendments

Date	Amendment	Approved by
26 <sup>th</sup> January 2019	Documents extended for 3 years	Mr Hughes
14 <sup>th</sup> December 2020	Document re-approved for 3 years	Miss Blackwell
29 <sup>th</sup> December 2023	Document extended for 6 months whilst under review	Alex Blackwell
20 <sup>th</sup> August 2024	Document extended for 6 months whilst under review	Alex Blackwell

### Introduction

Malignant ascites is defined as an abnormal accumulation of fluid in the peritoneal cavity as a consequence of cancer and presents as a difficult clinical problem causing discomfort and distress to many patients in the advanced stages of their disease. It accounts for around 10% of all cases of ascites and occurs in association with a variety of neoplasms especially ovary, breast, stomach, pancreas and colon cancer. Large amounts of ascites can cause increased abdominal pressure with troublesome symptoms like pain, dyspnoea, loss of appetite, nausea, vomiting, reduced mobility and problems with body image.

In advanced disease or when chemotherapy is ineffective, the main stay of management is percutaneous drainage. This is a palliative treatment which aims to relieve distressing symptoms. It does not reduce the rate of fluid accumulation.

Repeated percutaneous drainage is often necessary particularly in the last two to three months of life.

Traditionally, physicians have relied on repeat Large Volume Paracentesis (LVP) for the management of recurrent malignant ascites. Unfortunately, while effective at relieving symptoms, LVP requires frequent hospital visits and can result in significant patient discomfort and inconvenience.

The Pleurx peritoneal catheter provides relief of symptoms without the pain, anxiety and inconvenience of LVP. It also avoids the likelihood of significant fluid build-up between drainage procedures as patients can drain fluid at home as and when symptoms present.

## **The pleurx drainage system**

The Pleurx catheter is tunnelled and can be implanted without the need for a general anaesthetic, typically in a day case setting. The soft 15.5 Fr silicone catheter minimises patient discomfort and conforms to the peritoneal cavity. The Pleurx catheter contains a unique safety valve to prevent inadvertent passage of air or fluid through the catheter. A polyester cuff promotes tissue growth around the catheter and reduces risk of infection. The catheter remains in situ depending on the individuals diagnosis and prognosis

Once at home the patient or carer can use the vacuum bottles, which are provided in the Pleurx drainage kit, to drain ascitic fluid from the Pleurx catheter. Frequent drainage provides active symptom control and avoids the need for repeat hospital visits to perform paracentesis. The Pleurx drainage kit contains all items necessary to perform a clean and convenient drainage procedure in the home setting.

## **Benefits of the system**

The pleurx drainage system with its long term indwelling catheter provides an alternative to hospital admission for ascitic drainage. It enables the patient to be managed as an outpatient and the drainage to be done at home.

- Effective palliation of symptoms
- A convenient alternative to repeat LVP
- Home management and reduced hospital visits
- Less than 3% infection rate
- Few complications and no procedure related deaths
- Avoids the associated costs of large volume paracentesis
- Improved quality of life as a result of all of the above.

## **Proposed indications**

- Patients with malignant ascites.
- Ascites is unlikely to resolve with anti-cancer treatment.
- Patient has required two or more paracentesis for relief of symptoms particularly when interval is only a few weeks.
- The ascites has not been controlled with spironolactone / furosemide if the main aetiology of the ascites is liver metastases and/or serum-ascitic albumin gradient  $\geq 11\text{g/l}$ .
- Estimated life expectancy is greater than three months, but unlikely to be more than a year.

## **Proposed procedure**

### **Investigations prior to procedure**

- Full blood count. Neutrophil count to be  $>1.0$  otherwise defer procedure. Platelet count to be  $>50$  otherwise consider platelet cover.
- Urea, electrolytes and LFT.
- Clotting screen.

- PT and APTT are to be normal, if not consult clinical haematology about the use of FFP.
- For patients treated with warfarin or other oral anticoagulants consult Warfarin and other oral anticoagulants guidelines and procedures WAHT-HAE-002.

#### **Patients on low molecular weight heparin LMWH (enoxaparin, dalteparin)**

Patients who are on anticoagulation for a recent thrombosis (<6 weeks) or for a heart valve should have their anticoagulation management discussed with clinical haematology or cardiology respectively.

- Patients on prophylactic LMWH should have the last dose at least 12 hours prior to the procedure (usually on the evening before). This can be restarted if there is no bleeding 4 hours after the procedure.
- Patients on treatment dose LMWH should have the last dose >24 hours prior to the procedure and prophylactic dose LMWH given in the evening before the procedure if the time without LMWH is to be >36 hours.
- Following drain insertion, patients on treatment dose LMWH, unless there are signs of bleeding:
  - On the evening following the procedure - give prophylactic LMWH.
  - On the day following the procedure - recommence full treatment dose LMWH regimen

#### **Placement of drain**

- Procedure to be performed by Consultant Radiologist or Consultant who has demonstrated competence to the novel therapies committee.
- Procedure should be explained to the patient and informed consent should be obtained
- Ultrasound should be performed to guide placement of the drainage catheter
- The procedure should adhere to the manufacturer's guidelines with particular attention taken regarding aseptic technique; 1% lidocaine anaesthesia; secure sutures as per manufacturers instructions.
- Catheter placed on free drainage following procedure.

#### **Following Drain Placement**

Patient returns to ward for standard post procedure observations for 4 hours.

- Key worker/Consultant to advise on drainage rate and volume.
- Key worker to ensure appropriate analgesia is available.  
IV fluids are usually not required unless patient becomes hypotensive during or following drainage.
- Patients should be discharged home the when agreed to me medically fit..
- Establish communication with the District Nurse who will visit intermittently and assist with drainage of the ascites depending on symptoms. The aim will be to support patients/carers in order to enable them to manage the drainage sessions themselves for as much of the time as possible.
- Care is required to identify signs of line infection, catheter blockage or leaking around the catheter.
- There is no evidence to indicate the optimum volume to be removed at each drainage episode. Up to two litres are advised by the catheter manufacturers as this is often a sufficient volume for the relief of symptoms.

## Management of Complications

### Catheter blockage

- District Nurse to try and flush the line with 20mls sodium chloride 0.9%
- If this is not successful, patient to contact nurse specialist or palliative care key worker during working hours to arrange assessment.
- Ultrasound to assess if catheter blocked or if loculation of ascites.
- Instil 20mls of sodium chloride 0.9% or 250,000 units streptokinase into catheter.

### Infection of Catheter

- Patient to contact nurse specialist or palliative care key worker during working hours.
- To contact emergency services out of hours, allocated ward or Oncology helpline
- The patient would need hospital admission for intravenous antibiotics.
- If the patient does not respond or is systemically unwell, the catheter may need to be removed

### Removal of Catheter

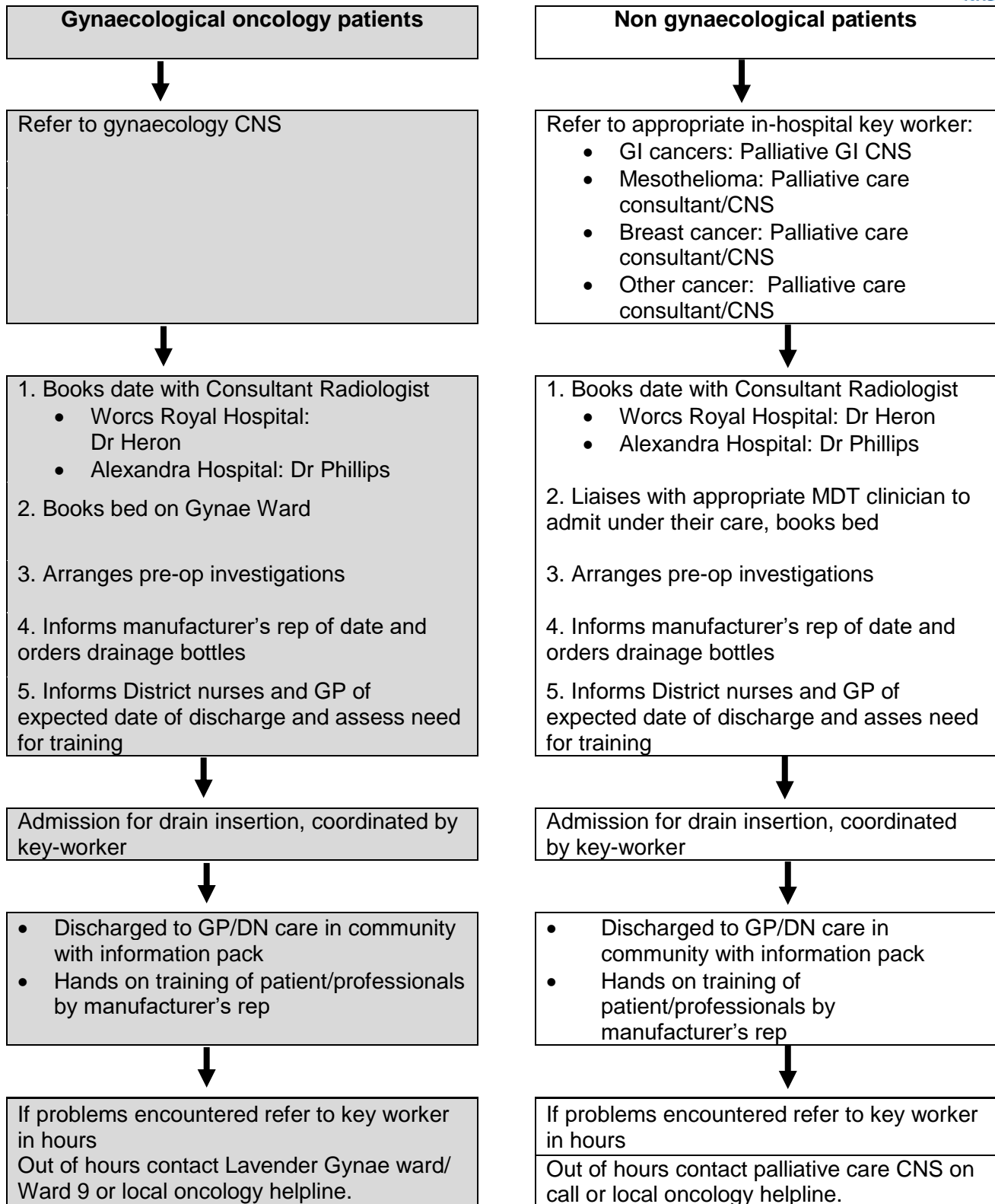
As this is a tunnelled device, for removal it is necessary to perform cut down under local anaesthesia. This would be best done in hospital by the team that inserted the catheter.

In the event of need for urgent removal (e.g. infected catheter or peritonitis) then a non specialist clinician (e.g. on-take surgeon or physician) can remove the drain following the instructions given on the manufacturers website: blunt dissection around the catheter cuff and firm tension to remove the catheter.

### Pathway for Insertion of the Indwelling Drainage System

- Suitable patients may be identified by oncology, palliative care or relevant medical/surgical teams.
- The appropriate nurse specialist should be contacted in order to arrange an appointment in Radiology for placement of catheter and also hospital admission for inpatient bed.
- The relevant District Nurse team to be contacted at the time of booking in order to prepare appropriate training for care of the catheter in the community.
- Inform GP of proposed pleurx insertion.
- The Pleurx Rep will be contacted to advise them of a pleurX catheter insertion. The rep will contact the appropriate district nurse team to start training on catheter care.

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Under certain circumstances the catheters may be inserted at one of the cancer centres. In this situation the current protocol for liaising with district nurses and local key worker should be followed. However, the aim will be for procedures to take place within Worcestershire as far as possible.

### **Patient follow-up following Pleurx catheter insertion**

- Follow up will be arranged by the patients' oncologist/palliative care consultant and will depend on the individual patients' clinical requirements.
- Blood tests and monitoring will depend on the individual patients clinical requirements and will be requested by their clinician if appropriate.

### **Training**

When a patient is identified as medically suitable for insertion of a Pleurx drain, the UK Medical representative will be notified by the Clinical Nurse Specialist. Training will then be arranged for the ward staff, patient and community nurses who will be caring for the patient. Training in the community will take place prior to the patient's discharge. An information pack with CD will be supplied to the patient and the community team, with details of help line numbers to use in the event of a problem.

### **Procedure for Ordering Drainage bottles/bags/consumables in the community**

- Pleurx kits need to be ordered by the district nurses from CareFusion UK.
- The Pleurx kits/consumables will be delivered directly to the patient's home.
- If the patient runs out of Pleurx kits they will be provided with the customer service helpline number at CareFusion UK. Who will ensure the patient receives a delivery the following day.
- Spare Pleurx kits will also be kept on Lavender Gynaecology Ward, Worcestershire Royal and Ward 9, The Alexandra Hospital.

## Appendix 1

## The Management of Malignant Abdominal Ascites with Pleurx® Care Pathway

<b>Patients Name:</b>		<b>Date of Admission:</b>
<b>Hospital Number:</b>		<b>Time of Admission:</b>
<b>NHS Number:</b>		<b>Admitting Consultant:</b>
<b>Date of birth:</b>	<b>Age:</b>	<b>Admitting Doctor:</b>
<b>Insertion Date :</b>		

### Alerts

<b>DRUG ALLERGIES</b> (e.g. Drugs, Latex, Elastoplast) include details of previous reaction if known		
<input type="checkbox"/> No Known Allergies <input type="checkbox"/> No Known Latex Allergies		
Signature.....Date ..... Time .....		

(Please tick (✓) response for each question)

### Eligibility Check list

Patient must be able to give consent	<input type="checkbox"/> No <input type="checkbox"/> Yes
Consent form completed	<input type="checkbox"/> No <input type="checkbox"/> Yes
Sufficient information should be given to the patient to enable an informed decision	<input type="checkbox"/> No <input type="checkbox"/> Yes
Patient/ carer willing and able to manage the equipment	<input type="checkbox"/> No <input type="checkbox"/> Yes
Nursing staff have explained the procedure and the patient/ carer have demonstrated physical ability and mental willingness	<input type="checkbox"/> No <input type="checkbox"/> Yes
Physical suitability (see clinical indications)	<input type="checkbox"/> No <input type="checkbox"/> Yes
Ultrasound examination has demonstrated free flowing fluid rather than loculated	<input type="checkbox"/> No <input type="checkbox"/> Yes
The cause of ascites is known to be due to malignancy	<input type="checkbox"/> No <input type="checkbox"/> Yes
The patient's consultant and extended team members agree to the catheter insertion	<input type="checkbox"/> No <input type="checkbox"/> Yes
Where the patient is already known to community staff (District Nurses or Macmillan team), a discussion has taken place about the patients' suitability	<input type="checkbox"/> No <input type="checkbox"/> Yes
Contacted Pleurx Rep to inform of intention to use a Pleurx	<input type="checkbox"/> No <input type="checkbox"/> Yes
Patient has had at least two previous paracentesis within the last 6 weeks or less	<input type="checkbox"/> No <input type="checkbox"/> Yes

Comments

**Signature of Doctor / Nurse**

Print Name .....Signature..... Designation .....Date..... Time

Print Name .....Signature..... Designation .....Date..... Time



Patient Name:	DOB:	Hospital No.
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## Admission Assessment

### Baseline Observations:

Temp \_\_\_\_\_ Pulse \_\_\_\_\_ Resps \_\_\_\_\_ BP \_\_\_\_\_

Girth \_\_\_\_\_ Height \_\_\_\_\_ cm Weight \_\_\_\_\_ Kgs

Presenting Problems	
Past Medical History	
Social History	
Physical Examination	

Pleurx drain and insertion procedure explained to patient	<input type="checkbox"/> No <input type="checkbox"/> Yes
Risks and complications discussed	<input type="checkbox"/> No <input type="checkbox"/> Yes
Consent form completed	<input type="checkbox"/> No <input type="checkbox"/> Yes
Patient given information sheet	<input type="checkbox"/> No <input type="checkbox"/> Yes
Prescription sheet(s) completed	<input type="checkbox"/> No <input type="checkbox"/> Yes

**Investigation Results**  
INR:

Patient referred to Dietician for High Protein Diet Information  No  Yes  N/A

Date \_\_\_\_\_ Signature \_\_\_\_\_

**Day of Procedure**

Date & Time of insertion \_\_\_\_\_

Inserted by (Radiologist) \_\_\_\_\_

Local anaesthetic used \_\_\_\_\_

Describe procedure: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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Time Drainage commenced \_\_\_\_\_

Drain to be left on free drainage for \_\_\_\_\_ hours

Total drainage \_\_\_\_\_ see fluid chart

Analgesia prescribed  Yes  No \_\_\_\_\_

Sutures due to be removed \_\_\_\_ / \_\_\_\_ / \_\_\_\_

<b>Drainage instructions (home)</b>	
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**Discharge check list**

Teach patient/ carer use of equipment	<input type="checkbox"/> No <input type="checkbox"/> Yes
Provide 2 drainage kits to take home	<input type="checkbox"/> No <input type="checkbox"/> Yes
Provide written information about Pleurx/ stress the need to bring this with them if they need to be admitted	<input type="checkbox"/> No <input type="checkbox"/> Yes
Give clear/ written instructions about what to do if there is a problem	<input type="checkbox"/> No <input type="checkbox"/> Yes
Refer to District Nurses and send discharge letter with the patient for the District Nurses	<input type="checkbox"/> No <input type="checkbox"/> Yes
Instigate teaching session if the DN team are unfamiliar with Pleurx <b>(UK Medical Support line 01142688880)</b>	<input type="checkbox"/> No <input type="checkbox"/> Yes
Patient given information Folder	<input type="checkbox"/> No <input type="checkbox"/> Yes

*On discharge, this document should be filed with any additional continuation sheets as per current filing policy.*

**Signature of Doctor / Nurse**

Print Name .....Signature.....

Designation .....Date..... Time

Print Name .....Signature.....

Designation .....Date..... Time

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**Re-admission/ Follow up /review / Comments**

*If patient is admitted to a ward, document clinical management on a continuation sheet.*

Date	Event	Action Taken
Comments		

Print Name .....Signature.....  
 Designation .....Date..... Time .....

Date	Event	Action Taken
Comments		

Print Name .....Signature.....  
 Designation .....Date..... Time .....

Date	Event	Action Taken
Comments		

Print Name .....Signature.....  
 Designation .....Date..... Time .....

Date	Event	Action Taken
Comments		

Print Name .....Signature.....  
 Designation .....Date..... Time .....

**Please fax this to the district nurse team on discharge or copy and send with discharge letter.**

## Appendix 2

<b>The Management of Abdominal Ascites with Pleurx®</b>		
<b>Patients Name:</b>		<b>Date of Admission:</b>
<b>Hospital Number:</b>		<b>Admitting Consultant:</b>
		<b>GP:</b>
<b>NHS Number:</b>		<b>Date of Discharge</b>
<b>Date of birth:</b>	<b>Age:</b>	<b>Ward:</b>
		<b>Tel No:</b>
<b>Insertion Date :</b>		

Dear District Nurse,

The above patient has been discharged home with a Pleurx peritoneal catheter for the drainage of malignant ascites.

<b>Sutures due for removal on:</b>	
Top sutures:	
Lower sutures:	
<b>Drainage instructions:</b>	
<p><i>Please see patient information folder for drainage guidelines and catheter care</i></p>	
<b>Blood tests</b>	
Provide 2 drainage kits to take home	<input type="checkbox"/> No <input type="checkbox"/> Yes
Patient given information Folder	<input type="checkbox"/> No <input type="checkbox"/> Yes

Pleurx is usually very well tolerated with a low complication rate. The two most common complications include infection and being unable to drain fluid from the catheter into the drainage bottle. Although this is unlikely it is important you know what to look out for and what to do should these complications arise. Please refer to the 'Frequently Asked Questions' for advice in the information pack.

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**For advice please contact:**

\_\_\_\_\_ **Tel:** \_\_\_\_\_  
(Clinical Nurse Specialist) Mon- Fri 09.00-17.00

**Or** \_\_\_\_\_ **Tel:** \_\_\_\_\_

**Out of Hours please contact the appropriate oncology helpline:**

Cheltenham Oncology Centre Helpline (24 hr) 08454 223444

University Hospital of Coventry and Warwickshire Helpline (24 hr) 02476 965525

New Cross Hospital Oncology Helpline (24 hr) 01902 694012

Or the on call palliative care CNS (Out of Hours)

Yours sincerely

Discharging Nurse \_\_\_\_\_

(Name in Capitals) \_\_\_\_\_

Ward: