This leaflet will explain the reasons for the operation, the procedure itself and potential risks involved. It will also explain the care you will need before and after the operation. Please feel free to ask any questions raised or not addressed by this leaflet. The doctors and nurses are available to support you at this time.

Thoracotomy is an incision made on the chest to gain access to organs within it.

Lobectomy is removal of one of the lobes of the lung.

Patients are referred to thoracic (chest) surgeons for management and/or investigation of an abnormality found in the lung. This includes known or suspected lung cancers and other conditions such as chronic infection. Published evidence indicates successful surgery for early stage lung cancer gives the best chance of a cure, although no treatment offers a guarantee.

Surgery for early stage lung cancer involves removing the part of the lung containing the cancer and the lymph glands in the surrounding regions. All the tissue removed is sent to the laboratory for analysis. Based on the results, patients may benefit from chemotherapy and/or radiotherapy after surgery.

During your outpatient appointment, you will have discussed with your surgeon the reasons for offering surgery, risks and benefits, what is involved and alternative treatments. When patients are unwilling or unfit for surgery the surgeon will provide guidance on options for alternative treatments.

It is your decision to choose surgery or other forms of treatment. The doctors and nurses will be available to offer information, advice and support at this time. Please feel free to ask any questions and discuss concerns you may have.

Surgery

The operation is done under a general anaesthetic and takes between one and three hours.

It is routine practice to check the airway for any abnormality. This is done using a bronchoscope (surgical telescope) put into your windpipe, via your mouth.

You will then be positioned on your side with your arm above your head.

The surgeon will make a cut starting under your shoulder blade, along the line of the rib. The ribs are separated from each other to gain access to the organs within. Occasionally ribs may be broken during this procedure.

The lungs consist of five lobes. There are two lobes in the left lung and three in the right lung. One or more of these lobes may be removed during surgery along with their surrounding lymph glands.

If the diagnosis has not been established, a sample of the abnormal tissue may be sent to the laboratory for a quick analysis while you are under anaesthetic. This is called a frozen section examination and normally adds 20 minutes to the length of the operation. Based on the findings of the frozen section examination, the surgeon may proceed to remove the lobe containing the abnormality from the lung. However; this may not always be necessary.

At the end of the procedure, the wound will be closed with stitches in layers. Most surgeons use absorbable stitches under the skin. These will dissolve over the next few months, so therefore do not need removing.

One or two chest tubes will be inserted at the end of the operation, to collect air and fluid from the operation site. The drains are secured with a stitch and an additional one to close the skin defect when the drain/s are removed. The stitch/yes will need to be removed about seven days after the drain comes out, by the practice nurse at your GP surgery or by the district nurse.
**Changes to the planned surgery**

Very occasionally unexpected findings come to light during the operation. These may influence the method and extent of your surgery. This means sometimes more extensive surgery than planned is needed, but on other occasions may mean that it is not possible to remove the lesion.

If this happens your surgeon will explain treatment options which may include chemotherapy and radiotherapy.

The surgeon will only do what is appropriate to your condition. If there has been any change to the planned operation the surgeon will always explain to you what has been done and the reasons why.

**Preparation for surgery**

If you smoke, we strongly recommend that you stop smoking before your operation.

We know that patients who smoke up to four weeks before chest surgery run a higher risk of developing complications after surgery.

To reduce the risk of infection, you will need to have a bath or shower in an antiseptic solution the night before your operation. We will supply this special liquid soap.

You must not eat anything after midnight the night before your operation. After midnight you can only drink water, and you must stop this at 6am.

If you take any medications the nurses will advise you which you may take before your operation.

You may be admitted to hospital the day before your operation. On admission you will need to have the following tests:

- Blood tests
- ECG – heart tracing
- Chest x-ray
- Breathing tests - pulmonary function (if not done previously)
- A full set of observations - blood pressure, pulse, oxygen levels temperature, respiratory rate, weight and height.

All patients are screened for MRSA infection on admission.

A nurse will need to complete some paperwork and a doctor or nurse specialist/practitioner will take a medical history and do an examination. This may have been done in a pre-admission clinic.

The anaesthetist will see you to discuss having a general anaesthetic. Pre-medications are not given routinely; however if you are particularly anxious then please mention this to the anaesthetist.

If you need other tests specific to you these will be explained.

The procedure will be explained to you again and any questions you may have will be answered.

Once everything has been completed, a doctor will ask you to sign a consent form giving your permission (consent) for the operation to take place.

On the morning of your operation you may need to have your chest, back and underarm shaved with special clippers. You will need to have another bath, shower, or full wash and a hair wash in the antiseptic solution.

After this you will be asked to put on a hospital gown. You will also need to wear compression stockings, which help to prevent you developing blood clots in your legs.

Before your operation a doctor will mark the side you are to be operated on. Please let a member of staff know if this gets washed off.

We will give you two name bands to wear, with the ward, your name, your date of birth and hospital number on. In addition if you are allergic to anything you will need to wear a red band. Please let a member of staff know if you lose one, or if any of the information is incorrect.

Before going to theatre the nurses will complete a checklist with you, which will be repeated several times when you go to theatre. This is for your safety.
After the operation

After the operation you will be taken to the recovery room. The staff will be constantly monitoring you and making you comfortable. Once they are happy with your condition you will return to the ward. You will normally stay in recovery for about two hours. Some patients will have a chest x-ray.

When you get back to the ward you will go to an area where we can closely monitor you for the first part of your recovery.

You will have oxygen via a mask, which will need to stay on for at least the first few hours.

You will not be able to drink for four hours after your operation. A tube going into a vein will give you fluids until you can drink freely.

The chest drain normally stays in for 24 to 48 hours, depending on how much drainage there is and if there is an air leak. If an air leak is present the drain will need to stay in until it stops. The nurses will be measuring the amount of drainage from your drain/s. With this information and a chest x-ray the doctors will decide when the drain/s can be removed.

You may have a tube in your bladder to measure your urine; this will normally be taken out the next morning.

Physiotherapists will show you how to do breathing exercises and how to cough to help prevent a chest infection. You will be shown how to exercise your shoulder to prevent getting a frozen shoulder. It is very important to do these exercises as they will help with your recovery. You will need to wear compression stockings which help with your circulation. It is important to wear these daily until you are fully recovered. You will also need to have daily injections of a blood-thinning drug until you are more mobile. These are all to help prevent a blood clot forming after your surgery.

Pain relief

After your operation you will need to have some pain relief. This is normally by patient controlled analgesia (PCA), a device designed to ensure you receive safe levels of pain relief. It consists of a syringe containing pain relief medication, attached to a vein in your arm. When you require pain relief you press a button to release a dose. You may also have some local anaesthetic infused into your wound for some time after surgery to help with the pain. As your pain improves you will be given tablets and the PCA and local anaesthetic will be stopped.

The nursing staff will be monitoring your pain levels so please tell them if your pain is not controlled.

General care

You will need help to begin with but gradually you will be able to do more for yourself.

You can eat the following day, but expect to have a poor appetite to begin with. The majority of patients having this surgery will find they are able to start walking around on the first day after their operation. Gradually as you recover you will be expected to move more, but be careful not to over do it. The nurses and physiotherapists will help you decide how much you should do.

You will have a dressing over your wound that will be removed 24 to 48 hours after the operation. If the wound is clean and dry it will be left without a dressing. If it is still oozy then a light dressing will be put on and changed daily until no longer needed.

The drain/s will have a dressing around them that will be changed daily or on alternate days as necessary. Once the drain/s are removed you will need a dressing over the site for 24 to 48 hours, or longer if necessary.

We would hope that by the time you go home you will be comfortable and gently walking around the ward. Your pain should be controlled on tablets, and you should be able to shower or wash yourself, and get yourself dressed. You may still need some help to wash your back and feet.

The doctors will come and see you every day to discuss your progress. If you have anything you wish to ask them please do so.

Expect to stay in hospital for four to five days after your surgery, but don’t worry if you need longer. You will recover at your own pace.
**Risks, side effects and possible complications**

With any surgical procedure, there are certain risks attached. The risks will depend on how well you were before undergoing the operation. Your surgeon will discuss the risks with you.

**Sore throat**
It is normal to have a sore throat from being anaesthetised, this should settle in a few days.

**Damage to teeth**
Teeth can sometimes be damaged from the anaesthetic and bronchoscope instruments. The surgeon and anaesthetist will try very hard to prevent this. Please ensure you let the doctors know if you have any loose teeth, crowns or bridges before your operation.

**Changes to blood pressure**
Sometimes your blood pressure may be lower after an anaesthetic. This is normally due to not having anything to drink for while. You will either be asked to drink more or you may need to have fluids through a tube into a vein in your arm.

**Changes to voice**
On rare occasions there may be a change in your voice after surgery. Speak to your doctor for more information about this.

**Coughing up blood**
It is normal to cough up a little blood for the first few days after lung surgery. The nurses will help with breathing exercises post surgery to clear this. It will gradually get less over time.

**Chest infection**
Breathing exercises, early mobilisation and adequate pain relief can help reduce this risk. If you do develop a chest infection you may need physiotherapy and sometimes treatment with antibiotics. You may need to stay in hospital for a little while longer.

**Shortness of breath**
It is normal to feel short of breath after chest surgery, this will improve as you recover and your pain and discomfort settle.

**Pain**
It is normal to have pain after this operation. Regular pain relief will be given to control this and it should settle in a few weeks.

Very occasionally pain does not settle and you may need to see a specialist at a pain clinic.

**Painful shoulder**
This is very common after chest surgery. It can be eased with pain relief and moving the shoulder regularly.

**Bleeding**
Following lung surgery some blood loss into your chest drains is normal and is usually minimal. However, very occasionally a blood transfusion is necessary. If this is the case, information will be given to you. Very occasionally patients will need to return to theatre to control the bleeding.

**Wound infection**
Showering in an antiseptic solution before surgery, frequent hand washing and using the alcohol rubs provided all help to prevent this risk.

A small percentage of patients having this surgery will develop a wound infection requiring antibiotics and wound dressings. This may require help from the district nurses to dress the wound once you leave hospital.

**Blood clots**
These can occur in the legs and then travel to the lung. The risk is greatly reduced by wearing compression stockings, daily injections of a blood-thinning drug and early mobilisation.

**Empyema**
This only occurs rarely and is an infection between the lung and chest wall. It will require longer-term drainage and antibiotics.

**Faster heart beat**
This can occur following lung surgery and may be treated with drugs to slow down the heart.
Air leak
This is when the cut surface of the lung leaks air and is a frequent occurrence following lung surgery. It usually settles within a few days but will mean that the chest drain has to stay in the chest while it settles. If it is taking longer to settle the surgeon will discuss what can be done about it.

Pneumothorax
Very occasionally the remaining lung will not fully inflate following this surgery and so may mean having a chest drain in for longer. Sometimes once the drain has been removed the lung will partially collapse. This will either resolve on its own, or need a chest drain to be put back in until it resolves.

Changes to the planned surgery
As mentioned earlier, the surgeon may not be able to remove the lesion. If this is the case the surgeon will discuss it with you after the operation.

Heart attack or stroke
This can occur during or after any surgery. The risk is higher in patients with a cardiac history or undiagnosed cardiac disease. For this reason, every patient will have investigations and be fully assessed before surgery takes place. On rare occasions this risk is too great and will mean surgery is not recommended.

Disorientation
Some patients might be disorientated with the ward and people around them while recovering from an operation. They may behave differently than normal and temporarily have some loss of memory. This is often a reaction to anaesthetic drugs and strong pain relief. Full recovery is usually expected within a few days.

Any surgery carries a degree of risk; this can include a risk of death. The risk of this will vary from patient to patient. Your surgeon and anaesthetist will discuss specific risks that apply to you.

Please remember you may ask any questions and voice any concerns you or your family may have with the doctors and nurses looking after you.

Rest
It is normal to feel very tired for at least the first two weeks after discharge and often longer. Rest is a very important part of your recovery, so ensure that you have several rest periods during the day, between activities.

Don’t be surprised at how tiring activities can be at first, increase them gradually as you feel able to. You will find you need less rest as you progress. Restrict any activities that cause pain or wear you out until you feel better.

Try to go to bed at a regular, reasonable time and don’t rush to get up in the morning.

It is nice to see visitors when you are at home but it can be very tiring. Try and restrict visitors to begin with and don’t be afraid to excuse yourself from company if you feel tired and want to rest.

Tiredness and sometimes periods of feeling low in mood are all part of your recovery and a natural reaction to surgery. Try to maintain a positive attitude and remember, your recovery will not happen overnight. Try not to compare yourself with anyone else; you will recover at your own pace.

Once you are discharged, if you have concerns about how you are recovering, please contact the ward, thoracic nurse specialists or your GP.

Mobility and exercise
It is important to exercise after your surgery, to maintain mobility and help with your recovery. Carry on with what you have been doing in hospital and increase steadily. Don’t forget to do your breathing exercises and move your shoulder regularly.

You should carry on wearing the compression stockings after you leave hospital, until you are fully recovered. If you experience any pain or discomfort in your calves (lower legs), or they become swollen, please contact your GP. Be aware of your limits and rest between activities. Please ask if there is anything you are unsure about. Walking is a good form of exercise, which you can do at your own pace and increase gradually.

If you feel tired or have pain while exercising, stop and rest.

Going home
Once your consultant feels you are able to go home a member of staff will discuss your ongoing recovery with you.
**Medication**

Any medication you brought into hospital will be returned to you, unless it has been stopped by your doctors during your admission. On discharge you will be given a seven-day supply of medication. This will include any of your own supply that has run out and any new tablets that you have been started on, such as pain relief. All medication will be labelled with instructions on how and when they should be taken. Please ensure you are clear about the instructions before you leave hospital.

**Pain relief**

It is important to take your pain relief regularly to begin with. This allows you to cough, take deep breaths and move about to aid your recovery. Do not try to stop them too soon.

Most patients need to take some form of pain relief for up to four weeks. You may need to get further supplies from your GP. Once your pain is improving, reduce them gradually.

If you find that your pain relief is not as effective as it was to begin with, speak to your GP about trying different ones.

Do not exceed the stated dose.

**Wound care**

The ward staff will give you advice about your wound before you go home. Your wound will normally take two to four weeks to heal.

You will have a stitch or stitches where your drain/s were, that will need to be removed by your practice nurse or district nurse seven days after the drains are removed.

You will be given a letter for the practice nurse and instructions about when to make an appointment.

Usually all dressings will be removed before going home, but if you still have a light dressing over your wound you will be given instruction about this.

You may shower/bath daily, but do not soak the wounds if you have a bath. Avoid very hot water as this may cause you to feel faint. Ensure there is someone in your home with you when you bath or shower in case you need some help. Take care when washing around your wounds and pat dry carefully.

Do not put any lotions or talcum powder on your wounds until they are fully healed.

It is normal to have some numbness, tingling and pins and needles around your wounds and at the front of your chest. This will normally settle over time but can take several weeks or months.

If you are worried at any time about the healing of your wound, if it becomes more painful, red, inflamed or oozy please phone the thoracic nurse specialist or the ward for advice, or see your practice nurse or GP.

**Diet**

A balanced diet is important following any surgery to help with your recovery. It is normal to have a poor appetite to begin with; this should improve as you become more active. In the meantime, have small frequent meals and ensure you are drinking sufficient fluids.

**Alcohol**

Alcohol can sometimes react with medication you may be on, so always check with a member of the ward staff before you are discharged.

**Smoking**

We strongly advise you not to smoke following your surgery and to avoid smoky environments. There are some leaflets available on the ward with advice and help on quitting.
Driving
You will normally be able to drive four to six weeks after your surgery, depending on your levels of wound discomfort and mobility. Always check with your insurance company first. In some instances it may be necessary to inform the DVLA.
If when you first drive you find it difficult due to pain and restrictions in your mobility leave it for a few days before trying again.
It is always a good idea to take a competent driver with you the first time you go out.

Outpatients appointment
You will normally be seen in surgical outpatients four to six weeks after going home.
If it is felt you need further treatment such as chemotherapy you may be seen by an oncologist before having the check up by the surgeon. At the surgical outpatients’ appointment you will have a chest x-ray and the surgeon will discuss your operation and recovery. Please feel free to ask questions or voice any concerns you have at this time.

Returning to work
Depending on your job and how quickly you recover you will need approximately four to eight weeks off work. If you have a very physical job you may need a bit longer. Please ask for advice before you leave hospital.
If you need a medical certificate please ask for one before going home. You may need to get further certificates from your GP.

Further information
If you have any questions about this information please discuss then with a member of staff before leaving hospital.
If you have any concerns or question once you are home them please feel free to contact the following for advice:
• Thoracic nurse specialist: telephone 023 8120 8457
• Hospital switchboard on 023 8077 7222 and ask for bleep 2949
• E4 ward: telephone 023 8120 6498
• Consultant’s secretary on ..............................................................
• Your GP

Help at home
After your surgery you will need someone to be at home with you for the first few days. For the first few weeks you will need help with heavier housework such as hoovering, changing the bed, loading and unloading the washing machine, hanging up washing, shopping and mowing the lawn. Family and friends are often very willing to help, so please ask them and accept their help. However if you live alone and do not have anyone to provide support, please tell the ward nurses on admission.
WESSEX Heartbeat

The story so far...

Wessex Heartbeat is a registered charity dedicated to providing support to the Wessex Cardiac Centre (WCC), its patients and their loved ones so they can receive the best possible care and support.

Wessex Heartbeat has raised over £13 million, helping the WCC become and remain a Centre of Excellence for cardiac care in the UK. We receive no funding of any type and rely solely on the donations of our generous supporters.

Key Services

We fund Heartbeat House; a home from home providing free accommodation for the Wessex Cardiovascular and Thoracic Centre patients’ relatives, located just a few minutes walk from the hospital. For information about staying at Heartbeat House please ask the Ward Sister.

Wessex Heartbeat are continually funding projects to ensure the Centre remains at the forefront of cutting edge services. Wessex Heartbeat continues to help patients, loved ones and medical staff in many ways, including:

- Funding specialist equipment
- Providing patient literature
- Funding educational and training grants for medical staff

We are also taking the message of keeping healthy out to the community through our ‘Healthy Heart’ campaign, offering on the spot health checks to staff at businesses and organisations.

It is thanks to the generosity of many individuals and organisations that we are able to fund these projects past and present.

With an increasing number of patients being treated by the WCC, there are always more ways in which Wessex Heartbeat can help and ensure that the cardiac care these patients receive continues to get even better.

Our next major projects will be the development of a Cardiac Day Case Lounge and Heart Failure service.

For more information on our work please visit our website at www.heartbeat.co.uk

With your help, however large or small, we can continue to make a difference and change the lives of the people in our community.

Thank You

Registered Charity No 1116610
Company Limited by Guarantee No 5924982

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How to make a donation

1. By Cheque

I enclose a cheque for £........................ made payable to Wessex Cardiac Trust. Please send cheques to the address at the bottom of this form.

2. By Credit or Debit Card

To make a donation by debit/credit card please call the Fundraising Team on 023 8070 6095. We regret that we cannot accept American Express or Diners Club cards.

3. Direct Debit Mandate

We are very grateful for any amount you are able to give. Please complete the Direct Debit section below.

I / we wish to pay Wessex Heartbeat the amount of £...................... monthly / quarterly / annually, until further notice.

Instructions to your Bank or Building Society to pay by Direct Debit

Bank name................................................................. Bank address ...........................................................................................................

Account name(s).......................................................... Branch sort code .................................................................

Account number.........................................................

Starting on .................................... Signature ........................................ Date ................................

By completing your details below, we can reclaim an extra 25p for each pound you donate.

I am a United Kingdom taxpayer and want this donation and all future donations to be treated as Gift Aid until I notify you otherwise.

Signature ............................................ Date ....................

Wessex Heartbeat, PO Box 270, Southampton General Hospital, Southampton SO16 6GE

T 023 8070 6095
E info@heartbeat.org.uk

All data is protected under the Data Protection Act and not shared with any other organisation. Wessex Heartbeat would like to keep you updated with our work. If you do not wish to receive information from us please tick the box ☐