

Patient information

Extracorporeal membrane oxygenation (ECMO) for severe lung failure

Patient Advice and Liaison Service

If you need general information or advice about Trust services, please contact the Patient Advice and Liaison Service (PALS) on 020 3594 2040 or visit www.bartshealth.nhs.uk/pals. Alternatively please contact staff who are providing your care if you require clinical advice.

Large print and other languages

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What is extracorporeal membrane oxygenation (ECMO)?

ECMO is a specialist life support machine that can temporarily support or replace the function of the lungs. Our lungs normally absorb oxygen from the air we breathe and get rid of a waste gas called carbon dioxide. Severely damaged lungs are unable to absorb enough oxygen into the blood and get rid of enough carbon dioxide – a situation that can become life threatening. ECMO does the work of the lung, allowing the lungs to rest and hopefully heal.

Blood is pumped via plastic tubes from a large vein in the neck or groin to an artificial lung (called the membrane oxygenator). This artificial lung adds oxygen to the blood and removes the waste carbon dioxide. The blood is then returned to the patient via another tube in a large vein.

Why is ECMO being considered?

People who need ECMO have severe or life-threatening illnesses that prevent their lungs from working properly. Most patients who need ECMO are already connected to a breathing machine (mechanical ventilator) and are being cared for in an intensive care unit.

Your relative or friend has been referred to us because their lungs are severely damaged. The doctors and nurses have asked whether ECMO might help them to recover.

When our team arrives at the local hospital, we will carefully assess the patient and check whether ECMO is suitable. We will discuss the patient's condition with relatives and we may ask about their medical history.

In order to start ECMO, a small operation is required, usually under general anaesthetic, to insert tubes into veins in the neck and/or

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Will my relative receive follow-up?

It is usually necessary for the patient to spend time back in the local hospital, when ECMO is no longer required and the patient's condition is improving. We will maintain contact with the doctors and nurses there to ensure that recovery is progressing as planned.

Approximately 2-3 months after leaving St Bartholomew's Hospital, you will be offered follow-up in a dedicated critical care outpatient clinic to monitor progress and recovery.

Further information

If you have any further questions, please ask the doctors and nurses looking after your relative, and they will do their best to help you.

Welfare support and religious ministers are available if their help is needed during this difficult time.

Further information about the intensive care unit and the local area is available on request.

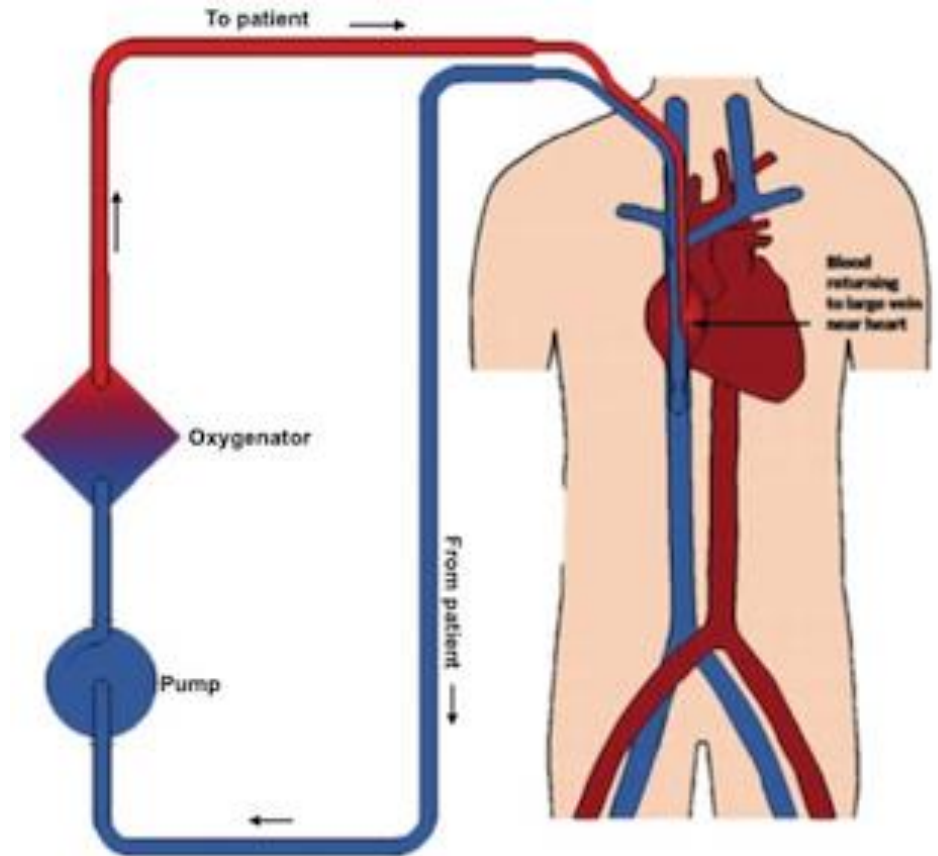
Contact details

Hospital address:
St Bartholomew's Hospital
West Smithfield
London EC1A 7BE

Telephone numbers
Intensive care unit (6A) 020 3465 6911
 020 3465 6362 (after 5pm)

Main hospital switchboard 020 7377 7000

groin. These tubes are then connected to the ECMO machine. ECMO may sometimes be started in the local hospital, or after transfer to St Bartholomew's Hospital.



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Extracorporeal life support. Gaffney et al. BMJ 2010;341: c5317.

What are the potential benefits of ECMO?

Sometimes, if a breathing machine (ventilator) is used to give large amounts of oxygen at high pressure, this can damage the lungs even more.

Although the breathing machine (ventilator) is often still needed, ECMO means that doctors and nurses can usually reduce the amount of oxygen and pressure given by the ventilator.

A study carried out in the UK showed that ECMO works successfully in some adults with severe acute lung failure. In the study, patients who were moved to a specialist hospital able to provide ECMO were more likely to survive without severe disability.

What are the potential risks of ECMO?

The main risk is bleeding. This is because the patient's blood is made 'thinner' by the action of the ECMO machine, and also because a blood-thinning medicine called heparin is given to reduce the chances of blood clotting in the ECMO machine.

Minor bleeding is common, and although this may look unsightly, this is not usually a major concern. More serious bleeding occurs in about 1 in 10 patients. If bleeding occurs into the brain, this may be fatal. We closely monitor blood tests every few hours to reduce the risk of serious bleeding problems.

There is a small risk of damage to the heart or blood vessels when tubes are inserted into veins in the neck or groin. We reduce this risk by using ultrasound and X-ray monitoring to guide us.

Why is ECMO not available in all hospitals?

The number of people who need ECMO is low. ECMO needs specially trained staff and specialist equipment, so it is only available in a few hospitals in the UK. St Bartholomew's Hospital is one of these hospitals.

If ECMO is suitable, hospital staff will arrange for the ECMO team to transport patients back to our hospital.

Patients are usually transported by road ambulance, or sometimes by air ambulance. If you are a relative, you will need to travel separately, because there is limited space in the ambulance, and staff will need to concentrate on caring for the patient.

There is a risk involved in moving a patient who is very unwell. It is possible that they may become more unwell, or in very rare cases even die, during the journey. However, the patient will be escorted by a team skilled in transporting critically ill patients, and the risks of transport are outweighed by the advantages of being treated in a hospital with staff skilled in ECMO.

When is the ECMO started?

Often ECMO is started before moving the patient to St Bartholomew's hospital (or Barts). The team of doctors and staff are skilled at starting ECMO and will do this if they think it is safer to move the patient on ECMO.

On other occasions, they may move the patient back to Barts and reassess the patient there. If their condition has stabilised or improved, the team may decide to treat without using ECMO. However, ECMO will usually be necessary.

If ECMO is started, patients usually require ECMO for between five and fourteen days. Sometimes ECMO will be needed for several weeks. The patient will be cared for in an intensive care unit during this time.

What should I do?

You are welcome to visit at St Bartholomew's. We understand that relatives may be a long way from home, and we will try to help to find you some accommodation. We will do our best to support relatives, and a member of the ECMO team is always available to update you about the patient's progress.