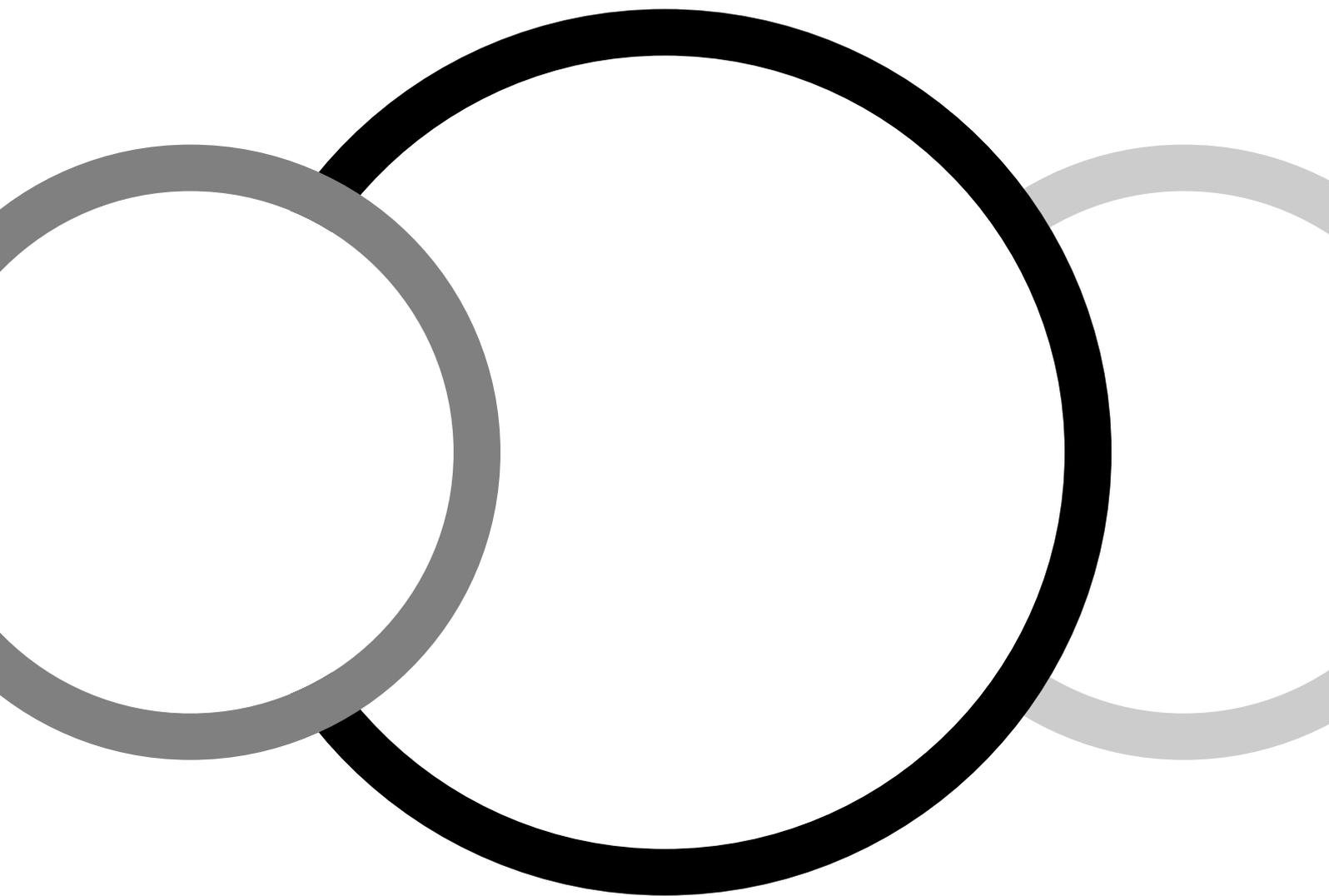


Patient Information

Cardiac Resynchronisation Therapy - Defibrillator



Having Cardiac Resynchronisation Therapy – Defibrillator (CRT- D)

You have been referred to The Essex Cardiothoracic Centre to have a CRT-defibrillator fitted. This leaflet describes the operation, so that you know what to expect. If you have any questions, please do not hesitate to contact the Arrhythmia Nurses.

What is a Cardiac Resynchronisation Therapy – defibrillator (CRT-D)?

A CRT-D is a metal box-shaped device which contains a battery and electronic circuits. The box is implanted under the skin, usually under your left collarbone, and is connected to your heart by wires (called leads). A CRT-D monitors your heart and helps support your heart function by producing electrical impulses to co-ordinate the contractions of the chambers of your heart. It can also deliver an electrical shock, if needed, to treat a dangerously fast heart rhythm.

How the heart works

The heart is a muscular pump which delivers blood containing oxygen to the body. It is divided into two upper chambers (atria) which collect blood returning through the veins; and two lower chambers (ventricles) which pump blood out.

The heart has an electrical system. This normally drives the heart to beat in a regular organised way. Each normal heart beat begins with an electrical impulse from a group of specialist cells called the Sinus Node (SA Node). These electrical impulses travel across the top two chambers of the heart, down through the Atrio Ventricular Node (AV Node), then spread across the bottom chambers, causing the heart to contract and pump.

When the heart's electrical system is working normally, conduction across the left lower chamber and right lower chamber (ventricles) occurs simultaneously, meaning that contraction of the chambers is synchronised.

Some patients who are suffering from heart failure (where the muscle of the heart is damaged or diseased and not working efficiently) have a delay in the electrical conduction

through their heart which results in unco-ordinated contraction of the lower chambers of their heart. This can lead to a weaker heart and worsen heart failure symptoms. These patients may benefit from a Cardiac Resynchronisation Therapy. Cardiac Resynchronisation Therapy uses three leads, one lead in the top left chamber of the heart (atria), a second in the lower right chamber and an additional third lead on the back wall of the lower left chamber. These leads co-ordinate electrical conduction in the heart and the lower chambers (ventricles) are paced simultaneously, which results in synchronised contraction of the lower chambers. This may result in an improvement in symptoms and a delay in further deterioration of heart function.

A Cardiac Resynchronisation Therapy – Defibrillator (CRT-D) delivers Cardiac Resynchronisation Therapy using electrical impulses and pacing in the same way as a cardiac resynchronisation therapy pacemaker. However, a cardiac resynchronisation therapy defibrillator has the extra capability of delivering an electrical shock for

those patients who are assessed as being at a higher risk of dangerous heart rhythms.

The operation to insert the Cardiac Resynchronisation Therapy device will be performed under local anaesthetic. You may need to stay in hospital overnight.

Points to note

- A date will be arranged for you to have a pre-admission assessment. This will take place at the Essex Cardiothoracic Centre. A nurse will take some details to make sure you are well enough to have a CRT-D fitted. Your blood pressure, ECG, weight and pulse will be checked.
- You will need to arrange for somebody to bring you to the hospital and collect you by car or taxi on the day of your operation. You will not be able to drive yourself. You will not be able to travel by public transport.
- If you have any special needs or requirements, please tell the nurse during your pre-admission assessment appointment.

- If you need ambulance transport because of your medical condition, this can be arranged for you. Please contact the CTC Patient Activity Office on 01268 524900 ext 4191/4192.

On the day of your operation, please remember to bring with you:

- All your medication, in its original container.
- Something to read or a personal stereo.
- Overnight bag with your preferred nightwear, dressing gown, slippers and toiletries.
- For security reasons, please do not bring jewellery, large amounts of money/credit or debit cards, mobile phones or anything of great value to you. The hospital regrets that it cannot accept responsibility for loss or damage to property belonging to patients.
- Please do not wear jewellery, make-up or nail varnish. Your wedding ring may be left on if you wish and we will cover it with tape.
- Unless you are informed otherwise you will be able to have an early light breakfast on the day of your

procedure, such as a small bowl of cereal, no later than 06:00am. Once you have eaten your breakfast, you must not eat or drink thereafter.

Should I take my normal medication?

Unless advised by the nurse at your pre-admission assessment appointment, you should take all your usual medication with a small sip of water.

You may be taking medications that need to be withheld prior to your procedure. If so, this will be discussed and explained to you by the Pharmacy Technician and the Arrhythmia Nurses during your pre-admission assessment.

If you are diabetic, the management of your diabetes and your diabetic medication will be discussed with you during your pre-admission assessment.

What happens when I arrive at hospital?

You will be admitted to the ward by a nurse. Please tell the nurse if you have had any allergic reactions in the past or if you think you might be pregnant.

The Electrophysiologist who will perform the procedure will come to see you. They will explain the procedures and any side-effects or possible complications for you. They will then ask you to sign a consent form. If there is anything you do not understand or if you have any questions, please ask.

What happens during the procedure?

- You will be taken to the cardiac catheter lab for your operation. The room is similar to an operating theatre.
 - There will be a team of people present, including an Electrophysiologist (a specialist in the electrical system of the heart), a Physiologist (giving technical support), nurses and a Radiologist who will assist with the x-ray equipment.
 - You will be given a local anaesthetic and, possibly, a mild sedative to make you relax. However, you will remain conscious throughout the procedure.
- You will need to lay flat during the procedure and you will be asked to lie as still and relaxed as possible. If you have difficulty laying flat, please discuss this with the Arrhythmia Nurses prior to your admission.
 - The nurse will clean your chest with antiseptic solution and cover you with sterile drapes. You will also have a drape around your head and you may have a light drape covering one side of your face. Please tell the nurse if you find this uncomfortable and we will make every effort to address this.
 - You will be attached to a heart monitor. This is so that we can monitor your heart rate.

Having a Cardiac Resynchronisation Therapy Defibrillator fitted

- Cardiac Resynchronisation devices are implanted by making a small cut (5cm/ 2inches) in the upper chest, just below the collar bone, usually on the left side.
- An x-ray machine will be positioned above you and may be moved around when the CRT-D is being fitted.

- Three leads are then inserted into a vein. The tips of the first two leads are advanced until they reach inside the heart chambers, the third lead is advanced through a vein in the heart to reach the back wall of the lower left heart chamber. The leads are then connected to the device, which is placed under the skin. You may feel some pushing at the top of your chest and a fluttering sensation in the chest. This is normal so please do not worry. If you do feel uncomfortable, please tell the nurse.
- When the leads are in the correct position, you may be given a stronger sedative so that the defibrillator capability can be tested. You will be told if this will happen but you will not be aware of it during the testing.
- The wound will be stitched with either dissolvable or non-dissolvable stitches. You will be told which you have and whether these will be removed.

Are there any side effects or possible complications?

Cardiac Resynchronisation Therapy defibrillator implantation is a safe procedure. However, complications may include:

- Infection
- Bleeding
- Bruising

All of these can be treated if they occur.

Other complication risks will be discussed in pre-admission clinic by the Arrhythmia nurse.

What happens after the operation?

You may need to stay at least one night after the operation. You may also need to rest in bed, in a sitting position for a few hours after the operation. Once you are fully awake, you will be allowed to eat and drink normally. It is important to avoid lifting the arm on the same side of the CRT-D above shoulder level until you have had your first outpatient CRT-D check in the pacemaker clinic.

You will need to have a chest x-ray and have your CRT-D checked before you go home.

Before you leave the hospital, your new device will be checked and you will be given an identification card which you should carry with you at all times.

You will be told about any changes to your medication and how to care for your wound before going home.

You will be advised when to restart any medication that was withheld in pre-admission assessment before you go home.

What happens when I leave hospital?

You will need to be collected by car. Do not use public transport. You should have someone stay with you for the first 24 hours after returning home.

Taking care of your wound

A clear dressing will be sprayed on your wound before you leave hospital. This will gradually dissolve over the next week or two.

You must keep the wound site clean and dry for 7 days (if you are not

diabetic) or 10 days (if you are diabetic) or until your stitches have been removed. You can have a bath or shower, but you must ensure that the wound stays completely dry.

After this time, you may bath or shower as normal, taking care around your wound until it is healed. It is common to have some discomfort around the site of the wound. Pain relief such as Paracetamol may be taken to relieve this.

You should avoid wearing tight clothing over the pacemaker site. Women may find that a soft pad placed under their bra strap will help to reduce any skin irritation. Some bruising is quite normal.

Returning to normal activity

Until new tissue has had the chance to form around the leads, there is a small possibility of them moving. Avoid lifting the arm on the same side as the CRT-D above shoulder level until you have had your first outpatient clinic check, which will be approximately 4-6 weeks after your procedure. Do not restrict all movement but try to avoid any sudden or jerky movements that

could cause problems. It is very important to keep some mobility, so gentle arm exercises are important to prevent your shoulder becoming stiff.

Do not play any vigorous sports such as rugby, swimming, tennis or golf for at least one month.

You should not use the affected arm for lifting or carrying heavy shopping until your CRT-D clinic check.

Once you have had your first CRT-D clinic check, you will be able to return to normal activity.

Once the wound is healed, a normal lifestyle can be resumed.

You may resume sexual activity as soon as you feel fit. You should avoid any position that will put pressure on the affected arm/shoulder for the first four weeks.

What will happen to me if the CRT-D delivers treatment?

Your response will vary depending on what treatment is being delivered. Many patients are unaware of pacing therapies. All patients will be aware of shock therapy.

At the start of a fast heart rhythm, you may feel palpitations and start to

feel dizzy as your blood pressure drops. Some patients may lose consciousness, so if there is time then it is best to sit down. You should wait for your palpitations to stop or for treatment to be delivered.

Shock therapy is felt in different ways by different people. It can cause your body to twitch or jump, sometimes quite violently. This can be unpleasant.

What should I do after receiving shock therapy?

You may be very upset the first time you receive shock therapy, and need help and support. Please contact the Essex Cardiothoracic Centre as soon as possible, on 01268 524900 ext 4465 or ask for the CTC ICD Clinic (working hours are between 9am– 5pm Monday- Friday) and arrangements will be made to see you. For advice out of hours, please contact Roding Ward on 01268 524900 ext 4174/ 4181.

When you come to see us we will be able to identify exactly what has happened, and provide you with the reassurance and support you need. Patients who have had treatments from their CRT-D regularly will often

be aware of their heart rhythm changing and will be able to prepare themselves for whatever treatment is to be delivered.

When you receive a shock from the CRT-D, try to stay as calm as possible. Many patients feel perfectly alright after a shock and can carry on with whatever they were doing beforehand. If this is the case, then there is no need to treat the situation as an emergency.

Remember, the shock therapy is part of the purpose of having a CRT-D in the first place. However, if you should feel very unwell, such as feeling dizzy or experiencing chest pain, or if the CRT-D is continuing to deliver shock therapy then you should call an ambulance to attend the nearest Accident & Emergency Department.

What should I do if I feel unwell?

This depends on how unwell you feel. If you feel generally unwell but have had no palpitations or shocks from the CRT-D, then you should contact your GP who will assess you and decide whether you need additional help.

If you feel that your problem could be related to your cardiac condition, please contact the Essex Cardiothoracic Centre on 01268 524900 ext 4064 or ask for the CTC ICD Clinic ext 4465 or ext 4438/4069 for Arrhythmia Nurses. We will talk through your problem with you and decide on the best course of action to take.

If you are feeling very unwell then you should call an ambulance. It is important that you tell them that you have a CRT-D and show them any emergency instructions that you have been given.

What happens if anyone is touching me when I get a shock from my CRT-D?

This is not a problem. No harm can come to anyone touching a patient with a CRT-D. Many patients who have small children or grandchildren worry about this. There is no need to worry – it will not harm anyone. At worst they may feel a slight tingle.

Returning to work

You should notify medical staff at your workplace that you have had a CRT-D fitted.

You should take a month off work to allow the CRT-D and leads to settle. If necessary, you can self-certificate or obtain a medical certificate from your GP. Please ask the Arrhythmia Nurses if you have any concerns.

Many people are able to return to work after their first check on their CRT-D, provided their wound has healed and they are feeling well. As everybody recovers at a different rate, your cardiologist may recommend a longer period of recovery. Your employer may want details about your CRT-D. If necessary, we can provide any information that will help you return to work.

Driving

There are rules and regulations relating to driving if you have a CRT-D. These have been set by the DVLA, in conjunction with the Cardiology Advisory Panel, and are being constantly reviewed and updated.

Driving restrictions vary depending on why you have had your CRT-D fitted. Driving bans can either be one month or six months after CRT-D

implant. However, patients holding LGV/PCV licenses are permanently barred from driving large goods vehicles.

All driving restrictions will be clarified and discussed with you by the Arrhythmia Nurse and Physiologist at the CTC. Resuming driving will depend on your underlying condition, and whether you have received therapy from your CRT-D. There are forms that will need to be completed before you will be able to drive again.

If you have access to the internet, the DVLA regulations are available at www.dvla.gov.uk. You can also notify the DVLA of a medical condition by telephone on 0870 600 0301 (Monday to Friday, 8am to 5.30pm and Saturday, 8am to 1pm). You will need to give your full name, date of birth and or driver number (if known). You must also give details of your specific medical condition so that you can be sent the appropriate medical questionnaire.

Wound infection / swelling

If you notice any reddening, or swelling near your pacemaker

please contact the Arrhythmia Nurses on 01268 524900 Ext 4438/4069 between 8- 4pm Monday to Friday.

How long will my CRT-D last?

The life of CRT-D batteries varies, depending on how much they are used. Regular attendance at the device clinic will allow us to predict when the battery will need replacing. Battery replacement is a simple procedure involving a short stay in hospital. The operation is performed under a local anaesthetic and the old CRT-D is removed and replaced with a new CRT-D and battery.

What is my CRT-D identity card for?

You will be given your CRT-D identity card before you leave the hospital. Please remember to carry it with you at all times. Do inform your GP, dentist, physiotherapist or other healthcare professionals who may use electrical appliances to treat you that you have had an CRT-D inserted. The card tells the doctors the type of CRT-D you have and its settings.

Can I travel?

Having a CRT-D makes no difference to whether you can travel or not. However, you should consider your general health, and arrangements for accessing emergency cardiac care. Before booking or planning a holiday, please speak with your GP about what precautions you should take. It is also advisable to get a check-up before you go, particularly if you are going for any length of time.

You can safely travel abroad with your CRT-D. However, it is necessary to carry your CRT-D identification card with you when you travel by plane as you may need to show this to the airport security staff.

Airport security Systems

You should show airport security staff your CRT-D identity card. It is advisable to avoid walking through airport detector archway/security machines or to be checked with a handheld detector. The metal detector should not be placed directly over your CRT-D because this can temporarily interfere with your CRT-D. Where some patients have walked through the security

machines there have been no reported problems. If you cannot avoid going through the security machines, walk through briskly.

Emergency contact numbers

UK and overseas

A full list of UK device centres has been compiled by the UK Heart Rhythm (UKHR) society.

If you are travelling overseas there are device implant centres in most countries. However, the expertise in these centres varies. Most western European countries, USA/Canada, Australia, New Zealand and countries with more advanced technology will have device centres, but many developing countries do not yet have the expertise. When you know where and when you are travelling, please contact us for a name and telephone number in the country to which you are going. Please give us notice as it sometimes takes time to get hold of this information.

Please note that we cannot guarantee the quality of care you may get in any centre. We can only give you a contact in case of emergencies or problems.

Emergencies abroad

If you do feel unwell, the best thing to do is to assess the situation as if you were at home.

1. Do you feel well enough to get home? If so, try to get your travel arrangements brought forward.
2. Do you feel unwell but not really bad enough to go to an emergency centre?
3. If it is an emergency, just take all your information to the nearest contact that we found for you. If you are not happy, get them to contact us.

Electro magnetic Interference

There are many stories about how electrical interference can cause problems for CRT-D patients. Please do not worry, these stories are usually more fiction than truth. Our staff will be able to tell you what is likely to cause problems, and what is completely safe.

Because your CRT-D is housed in a metal case and is implanted in your body, it is well protected from most electrical signals. The CRT-D also includes many safety features, which help it to detect and reject electrical

noise.

There is the possibility of interference from equipment that can generate the same sort of level of signals as the heart generates, or from very heavy-duty electrical machinery that may generate high-level electromagnetic noise. Most people who have CRT-Ds are very unlikely to come into contact with any machinery or equipment that will cause them concern on a day-to-day basis. Please ask us if you are concerned about any machinery or equipment you may come into contact with.

Anyone who works in an environment where there may be risk will be carefully checked and monitored to ensure that they are safe to return to work without any problems.

Household / Domestic appliances

Practically everything in the household environment is safe for CRT-D patients. These include:

- Microwave ovens
- Televisions
- Radios and stereos
- All kitchen equipment

- Hairdryers and shavers
- Vacuum cleaners
- Garden equipment

Mobile phones

Mobile phones are safe, but it is recommended that you use the phone on the opposite side to the CRT-D (six inches away from the CRT-D). It is safe for other people to use a mobile phone close to you.

Shop security systems

It is advised you should walk straight through the shop doorway without loitering, your CRT-D should not trigger the alarm system.

Hospital environment

Most equipment used in hospitals will not cause any interference with the CRT-D. If you need hospital or dental treatment, it is important that you let medical and dental staff know you have a CRT-D so that they can assess if their equipment is safe to use.

TENS machine in particular should be avoided (sometimes used for pain control).

X-rays

X-rays do not interfere with a CRT-D.

MRI scans/ CT scans

CT scans are safe. However, people who have a CRT-D should avoid MRI scans.

Radiotherapy

If your consultant feels that you would benefit from radiotherapy then it is important that they contact the Essex Cardiothoracic Centre to discuss levels of treatment.

Radio Frequency (RF)

It is unlikely that most patients will come across sources of RF that will cause problems. It is recommended that the remote radio control unit for toy boats and planes be kept well away from the CRT-D, as there is a small possibility that it could trigger a shock.

Please remember, it is highly unlikely that anything will cause problems with your CRT-D. If you are concerned about anything at all, please call us.

Where can I find further information?

If you need to contact us regarding your procedure, please telephone The Essex Cardiothoracic Centre

01268 524900 Ext 4069 / 4438 -
Arrhythmia Nurses

01268 524900 Ext 4063 -
Cardiac Physiologist

01268 524900 Ext 4209 -
Roding Ward

(Out of office hours)
www.basildonandthurrock.nhs.uk

Arrhythmia Alliance
www.arrhythmiaalliance.org.uk

Cardiac Risk in the Young (under 35's): www.c-r-y.org.uk

British Heart Foundation
14 Fitzhardinge Street
London
W1H 6SH
020 793 50185

Heart Information Line:
0845 070 8070
www.bhf.org.uk

NHS Direct (health advice and information)

0845 46 47

www.nhsdirect.nhs.uk

Essex Heartbeat Support Group

Membership Enquiries:

01245 477 437

Find out more about Essex

Heartbeat: 07870 377 207

www.essexheartbeat.org

Essex Cardiac and Stroke Network

(details of local support groups in your area)

01206 286 769

www.essexcardiacservices.nhs.uk

The Essex Cardiothoracic Centre

Basildon and Thurrock University

Hospitals NHS Foundation Trust

01268 524 900

www.basildonandthurrock.nhs.uk

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☎ 01268 524900 / 0845 155 3111

Minicom
☎ 01268 593190

Patient Advice and
Liaison Service (PALS)
☎ 01268 394440
E pals@btuh.nhs.uk

W www.basildonandthurrock.nhs.uk

The Trust will not tolerate aggression, intimidation or violence directed towards its staff.

This is a smokefree Trust. Smoking is not allowed in any of our hospital buildings or grounds.

This information can be provided in a different language or format (for example, large print or audio cassette) on request.