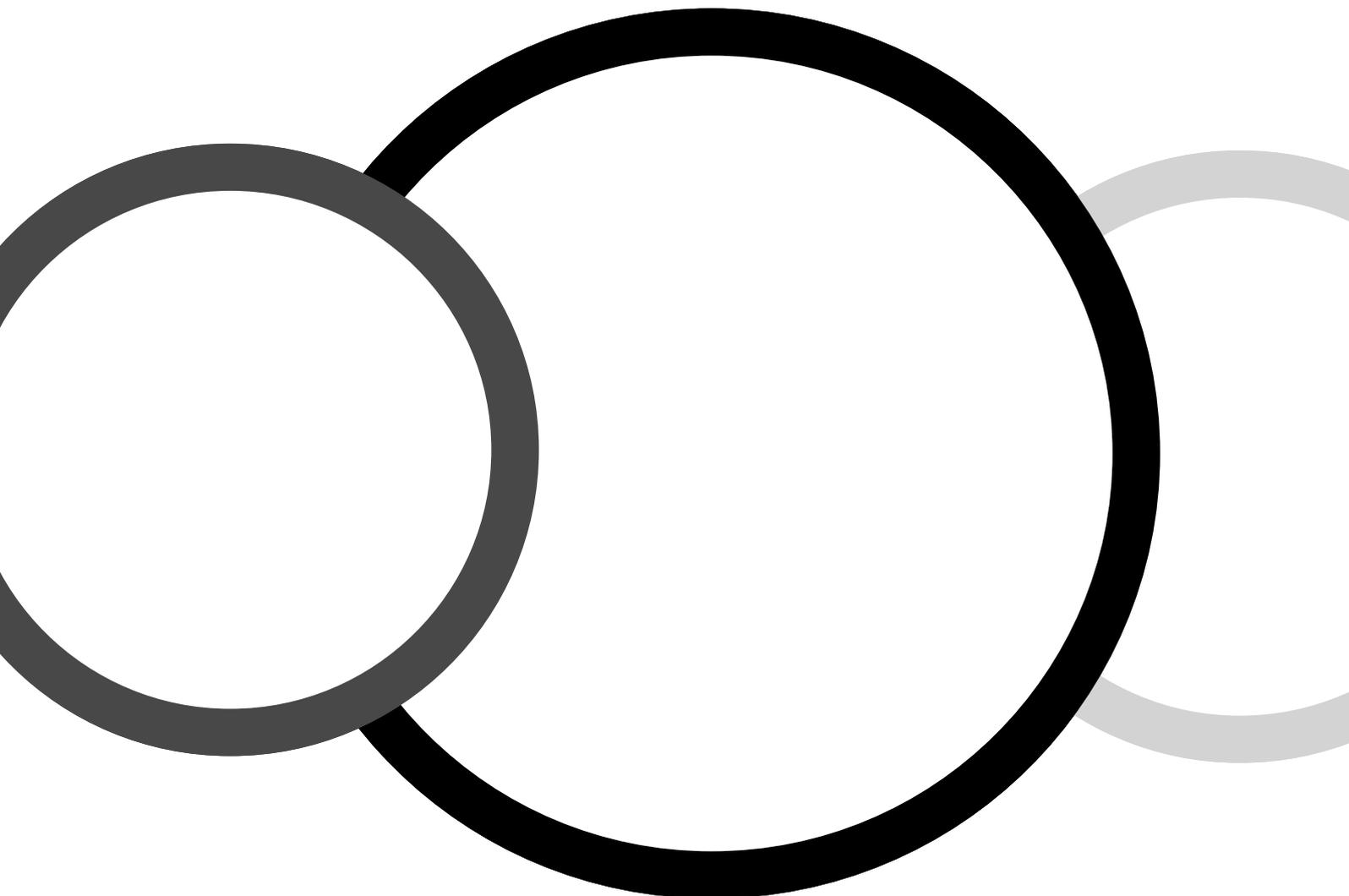


The Essex  
Cardiothoracic Centre

## Patient Information

# Implantable cardioverter defibrillator



## **Having an implantable cardiac defibrillator (ICD)**

You have been referred to The Essex Cardiothoracic Centre (CTC) to have an implantable cardiac defibrillator (ICD) 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 an ICD?**

An ICD 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). ICDs can monitor your heart and recognise your heart rhythm. The ICD will treat a too slow or too fast heart rhythm with electrical impulses or a high energy shock.

### **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 at a rate of 60-100 beats per minute.

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 a heart is beating normally we refer to this as sinus rhythm, or normal rhythm.

Sometimes there is an abnormality in the electrical system of the heart which results in your heart beating too fast and/or irregularly.

An ICD can be used to treat a dangerously fast heart rhythm by using one or two leads inside the heart chambers. Some people benefit from having an ICD even if they have never had an abnormal heart rhythm. The specific reason why you require an ICD will be explained to you by the arrhythmia nurses during your pre-admission assessment.

## Points to note

- A date will be arranged for you to have a pre-admission assessment. This will take place at the CTC. A nurse will take some details to make sure you are well enough to have an ICD 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 (in case you need to stay).
- 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 6am. 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 (a specialist in the electrical system of the heart) 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 don't 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 physiologist, 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 so that we can monitor your heart.

### **Having an ICD fitted**

- Most ICDs 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 ICD is being fitted.
- A lead(s) is then inserted into a vein. The tip of the lead(s) is advanced until it is inside the heart. The other end is connected to the ICD box, 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.

- Once the lead(s) is in the correct position you may be given a stronger sedative so that the ICD can be tested. You will be told when this will happen. Once you are sedated you will not be aware of this happening.

- 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?**

ICD implantation is a safe procedure. Complications may include:

- infection
- bleeding
- bruising

All of these can be treated if they occur.

Other complication risks will be discussed with you in your pre-admission clinic by the arrhythmia nurse.

## **What happens after the operation?**

- You may 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 ICD above shoulder level until you have had your first outpatient ICD check in the ICD clinic.
- You will need to have a chest x-ray and have your ICD checked before you go home.
- Before you leave the hospital your new ICD will be checked and you will be given an ICD 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 before you go home.
- You will be given lots of information from your nurse and the cardiac physiologist about your ICD. If there is anything that you do not understand please do not hesitate to ask.

- Depending on the reason for your ICD, you may be visited by a cardiac rehabilitation nurse before you go home. They will discuss your condition and your recovery with you. This is known as Phase I rehabilitation. They will pass your details onto the cardiac rehabilitation centre where you live. You will be given a cardiac rehabilitation information leaflet which will include details about where to contact if you need further support.

## **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 your operation. You must rest for the remainder of the day on a couch or bed.

## **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 seven 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 ICD 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 ICD above shoulder level until you have had your first outpatient ICD clinic check which will be approximately 4-6 weeks after your procedure. Don't restrict all movement but try and 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. You should not use the affected arm for lifting or carrying heavy shopping until your ICD clinic check.

Do not play any vigorous sports such as rugby, swimming, tennis or golf for at least one month. You should be careful of any contact sports when you have an ICD and you are advised not to swim alone in a private pool. If you have any questions then please contact the arrhythmia nurses or your ICD clinic.

Once you have had your first ICD 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.

Once your cardiologist has said that you can return to normal, then there is no reason why you should not get on with life as you did before your implant.

Many patients are naturally worried about how far they can lead a normal life. If you are worried about exercise, such as walking the dog or going to the gym, we can arrange for you to have rehabilitation, or an exercise test, to reassure you that your ICD will not be triggered by normal lifestyle activities.

If your underlying cardiac condition restricts your exercise level then your ICD implant will make no difference to this.

### **What will happen to me when the ICD 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 pacing and ICD clinic and arrangements will be made to see you. Please see page 14 of this leaflet for details. 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 ICD 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 ICD try to stay as calm as possible. Many patients feel perfectly all right 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 the purpose of having an ICD in the first place. However, if you should feel very unwell such as feeling dizzy or experiencing chest pain, or if the ICD 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 ICD then you should contact your GP. They will assess you and decide whether you need additional help.

If you feel that your problem could be related to your cardiac condition then please contact the pacing and ICD clinic or the arrhythmia nurses. Please see page 14 of this leaflet for details. 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 an ICD 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 ICD?**

This is not a problem. No harm can come to anyone touching a patient with an ICD. 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.

### **Can I stop taking my medication now that I have an ICD?**

This depends on your underlying condition. The ICD does not stop you getting heart rhythm disturbances; it only treats them when they occur. Some of your medication may reduce the number of heart rhythm disturbances you experience and so you may need to keep taking it. You may also be taking medication for other reasons, such as helping the heart to pump more efficiently or reducing fluid levels. You will not be able to stop these.

## **Returning to work**

You should notify medical staff at your workplace that you have had an ICD fitted.

You should take a month off work to allow the ICD 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 ICD, provided that their wound has healed and that 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 ICD. 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 an ICD. 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 ICD fitted. Driving bans can either be one month or six months post ICD implant. However, patients holding LGV/PCV licences 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 ICD. 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](http://www.dvla.gov.uk). You can also notify the DVLA of a medical condition by telephone on 0300 790 6806 (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 and we will arrange for you to be seen at the CTC if needed.

## **How long will my ICD last?**

The life of ICD batteries varies depending on how much they are used. Regular attendance at the ICD 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 ICD is removed and replaced with a new ICD and battery.

## **What is my ICD identity card for?**

You will be given your ICD 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 ICD inserted. The card tells the doctors the type of ICD you have and its settings.

## **Can I travel?**

Having an ICD 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 ICD however, it is necessary to carry your ICD 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 ICD 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 ICD because this can temporarily interfere with your ICD. 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 ICD centres has been compiled by the British Heart Rhythm Society (BHRS).

If you are travelling overseas there are ICD 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 ICD 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 and 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 ICD 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 ICD is housed in a metal case and is implanted in your body it is well protected from most electrical signals. The ICD 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 electro-magnetic noise. Most people who have an ICD 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 pacemaker 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 ICD (six inches away from the ICD). 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 ICD should not trigger the alarm system.

### **Hospital environment**

Most equipment used in hospitals will not cause any interference with the ICD. If you need hospital or dental treatment it is important that you let medical and dental staff know you have an ICD 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 ICDs.

### **MRI scans/ CT scans**

CT scans are safe; however people who have an ICD should avoid MRI scans.

## **Radiotherapy**

If your consultant feels that you would benefit from radiotherapy then it is important that they contact the CTC 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, planes be kept well away from the ICD, 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 ICD. 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 contact:

- CTC arrhythmia nurses  
01268 394021  
[arrhythmia.nurses@btuh.nhs.uk](mailto:arrhythmia.nurses@btuh.nhs.uk)
- Pacing and ICD clinic  
The Essex Cardiothoracic Centre  
For appointments, queries and transport requests:  
01268 694516  
For all other queries:  
01268 524900 ext 4019
- Roding ward  
(out of office hours)  
01268 524900 ext 4209  
[www.basildonandthurrock.nhs.uk](http://www.basildonandthurrock.nhs.uk)

Other information can be found at:

- Arrhythmia Alliance  
[www.arrhythmiaalliance.org.uk](http://www.arrhythmiaalliance.org.uk)
- Cardiac Risk in the Young  
(under 35's)  
[www.c-r-y.org.uk](http://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](http://www.bhf.org.uk)

- NHS 111
- Essex Heartbeat Support Group membership enquiries:  
01245 477 437  
  
Find out more about Essex Heartbeat: 07870 377 207  
[www.essexheartbeat.org](http://www.essexheartbeat.org)
- Essex Cardiac and Stroke Network (details of local support groups in your area)  
01206 286 769  
[www.essexcardiacservices.nhs.uk](http://www.essexcardiacservices.nhs.uk)
- The Essex Cardiothoracic Centre Basildon and Thurrock University Hospitals NHS Foundation Trust  
01268 524 900  
[www.basildonandthurrock.nhs.uk](http://www.basildonandthurrock.nhs.uk)

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Basildon University Hospital  
Nethermayne  
Basildon  
Essex SS16 5NL  
☎ 01268 524900

Minicom  
☎ 01268 593190

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

W [www.basildonandthurrock.nhs.uk](http://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 version) on request.