Gwasanaeth Metastasis Peritoneol y Colon a'r Rhefr Cymru Gyfan

All Wales Colorectal Peritoneal Metastasis Service

Peritoneal malignancy surgery

Information for patients, relatives and carers

GIG CYMRU NHS WALES

Bwrdd Iechyd Prifysgol Caerdydd a'r Fro

Cardiff and Vale University Health Board

Introduction

Cardiff and Vale University Health Board provides a specialised surgical technique for peritoneal malignancy. This booklet has been provided to help answer some of the questions you and your family may have about your operation and stay in hospital. You may feel that there is a lot of information to take in and some of your questions may not be addressed.

Please do not hesitate to ask any questions that you and your family may have - we will do our best to answer them for you. Our aim is to help you be as prepared and informed as possible for your operation and recovery.

At the back of this booklet there is a list of useful contact numbers. You will also find a glossary of commonly used words and a space for you to write down any questions that you may think of.

What does surgery involve?

Complete cytoreduction

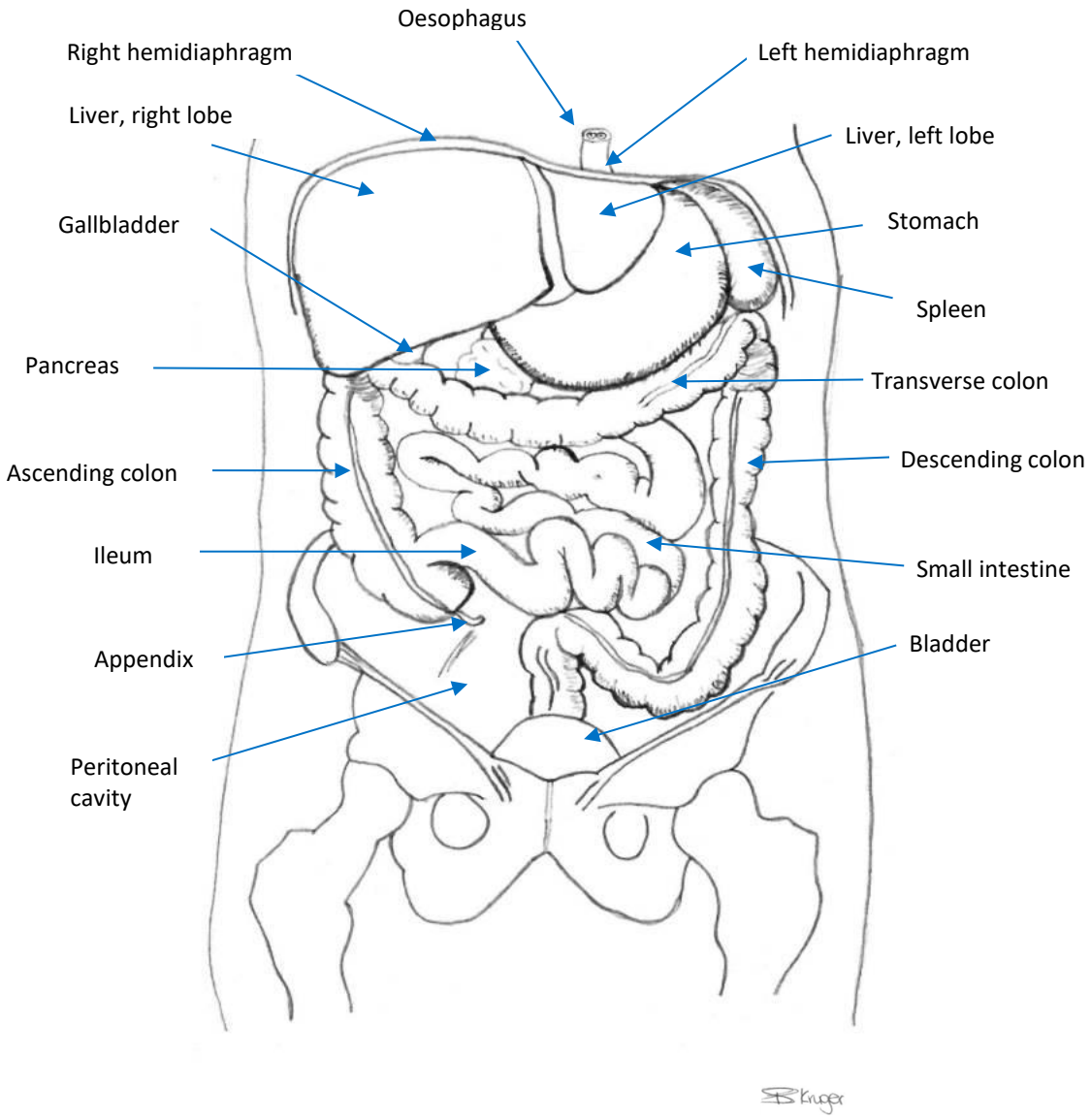
Complete cytoreduction (removal of all visible tumour) is a technique developed and popularised by Professor Paul Sugarbaker at the Washington Cancer Centre, USA. Average operating time for these operations is about 8-9 hours. The operation comprises a number of different procedures depending on where in the abdomen the disease is. These procedures are listed below:

- Right hemicolectomy – removal of the right side of the large bowel
- Splenectomy – removal of the spleen
- Cholecystectomy – removal of the gallbladder
- Greater omentectomy – removal of the greater omentum (fat apron in the abdomen)
- Lesser omentectomy – removal of the lesser omentum
- Anterior resection - removal of the rectum
- Hysterectomy – removal of uterus +/- one or both ovaries
- Stripping of the peritoneum from the left hemidiaphragm
- Stripping of the peritoneum from the right hemidiaphragm
- Stripping of disease from the surface of the liver.
- Stripping of the peritoneum from the pelvis
- Stripping of the peritoneum from affected areas of the abdomen

During surgery you will be given hyperthermic intraperitoneal chemotherapy (HIPEC) as discussed in your clinic appointment. This is the administration of heated chemotherapy directly into the peritoneal cavity at the time of your operation for 60 minutes. HIPEC is a significant operation to have and consequently complications/side effects can occur. Most of the side effects are from having the operation rather than a direct result of having the chemotheraphy (HIPEC).

You should expect to be in hospital for 7 - 10 days after your operation before we discharge you home. Please note that quality of life studies (QOL) tells us that it takes an average of three months to recover from this surgery. We will complete QOL studies at 1st clinic appointment (Pre-operative) 6 weeks after the surgery, 6 months after surgery then 12 months after surgery. This information will help in future studies.

We ask you to aim to be as physically fit as possible before your operation, as this will help you recover afterwards. Regular exercise will ensure your heart and lungs are in the best possible condition beforehand which will help reduce the risks of some post-operative complications. You will be referred to Our Pre-habilitation team either here in Cardiff or locally if available



Complications

Problems as a result of surgery, known as complications, can occur and the team will be monitoring you closely to ensure any problems are recognised and treated as soon as possible. Overall one in three people (33%) get some sort of a complication following the major surgery that is needed but most of these can be treated on the ward. However, there is a 10% risk of a significant complication which may require a return to ITU, a further procedure such as a CT scan with placement of a drain under local anaesthetic and in some cases a return to theatre. These complications include chest, urine or wound infections, blood clots in the leg or lung, leak from a join in the bowel, abdominal collections, heart attack or stroke. There is a mortality risk (that is a risk of dying as a result of the operation) of 1-2% (that is 1 in 100 to 2 in 100). These potential risks will have been discussed with you in your clinic appointment and will be outlined in the summary letter you receive.

Maximal tumour debulking

It is not always possible to remove all of the tumour during the operation. This is mainly because of involvement of the surface of the small bowel and sometimes the stomach.

If this is the case, the surgical team will remove as much of the disease as possible, leaving some disease behind. It is very important to leave enough small bowel so that food and water can be absorbed. In these situations, it is common to have the whole colon removed and for the team to create a permanent ileostomy bag.

We sometimes give HIPEC to try and slow the rate of the tumour spreading in the future, but in these situations the tumour will eventually continue to grow into areas where it cannot be removed.

What happens before I come into hospital?

We will ask following your outpatient assessment for you to go to see the pre-assessment (POAC) team on the hospital site for the team to undertake their initial work up investigations for your surgery. These will include health screening questionnaire, blood tests, measures of your height and weight. Following this a nurse, will assess your pre-operative needs and the CNS will arrange for you to have a Cardiopulmonary exercise test (CPET), this is a test undertaken on an exercise bike and will record how much oxygen your body needs to undertake a certain task on the bike. This test helps the anaesthetic team determine how much support you will need during your operation and recovery. All patients will have a 24-48 hrs stay in our PACU unit (post anaesthetic care unit).

In addition, depending on your other health problems you may require further investigations such as an Echocardiogram or respiratory function testing to full assess your individual health needs this is to optimise you prior to operation.

Finally, you will also be referred to the pre-habilitation team who will assess your needs and make recommendations and suggestions to get you in the best shape we can prior to your

operation. We will see you before your surgery approximately 7 days to sign consent form and complete HIPEC prescription

What happens when I come into hospital?

We recommend coming in morning of surgery (DOSA) admission opens at 06.00 and you will receive a letter to confirm details or 1 days before your operation. On the day of admission, you will need to telephone the ward on the number given on your admission letter before leaving home to agree an appropriate admission time. This ensures that the bed is ready for you when you arrive on the ward Normally, you will be admitted into the C6.

Soon after you arrive, a nurse will record details including your blood pressure, pulse, temperature, weight and height. A junior doctor of our surgical team will also see you to take Bloods. If you require bowel preparation this will be given for you to take prior to your admission, please follow the instruction given with your bowel preparation carefully.

On the day of your operation, the anaesthetist, peritoneal malignancy clinical nurse specialist, and stoma care nurses may all visit you to explain procedures.

Please do not hesitate to ask any member of the health care team questions at any time.

In Cardiff we treat the whole of you - mind and body.

Pharmacy team

Please bring into hospital all your medicines in their original containers so that we can see precisely what you are taking. During admission, you will be seen by a member of the pharmacy team to discuss your medicines as prescribed by your GP at home, including any you may have bought over the counter at your community pharmacy. They will also ask about any known drug allergies or adverse reactions. The pharmacist will visit you regularly whilst you are in hospital and will be available to answer any questions you may have about your medicines.

What happens on the day of my surgery?

On the morning of your operation theatre staff will collect you from the ward between 8am and 8.30am.

They will take down to the anaesthetic room on a trolley and you will be checked into theatre. There will be many questions asked both on the ward and in the theatre. Many of these are repetitive and are designed to prevent errors occurring. The anaesthetist will insert you epidural while you are awake. The NIG/ CVC/ Catheter will be inserted when you are asleep under general anaesthesia. The anaesthetist will give you a general anaesthetic before taking you through to the operating theatre.

Relatives

It is a very long and draining day for family members and we would advise them to organise something to do for the day. The city centre is nearby and can be a useful distraction from the natural stresses and strains that the day will bring.

It is important that we have contact numbers for a member of your family while you are in theatre as the consultants will try to update them on the afternoon of your surgery once the main part of the surgery has been completed and the HIPEC treatment has started. We normally take this contact number in clinic before surgery.

What happens after my operation?

At the end of the operation, we will take you to the Post Anaesthetic Care Unit (PACU). We will let your family know how everything went and regularly update your family on your progress. The stay on the PACU is normally for 48 hours.

You will be cared for by the critical care team which consists of consultant intensivists, who specialise in treating critically ill patients and patients with complex needs, alongside a team of doctors, critical care trained nurses, therapists, anaesthetists, clinical fellows and foundation doctors.

The peritoneal malignancy consultants and their team will review you regularly and we will work together to help you to recover. The nurses will communicate closely with you and your relatives to update them on your progress.

Normally, following your operation, your breathing tube is removed prior to arriving in the PACU.

You will also have a variety of monitoring devices and attachments that help the doctors and nurses track your progress and allow you to have as much rest as possible. All the machines together can be very noisy but please do not be alarmed by the bleeps and beeps. If an alarm goes off, it does not necessarily mean that something is wrong. Sometimes the alarms are triggered by a movement or poor connection. The staff will be monitoring you closely from all areas of the Post Anaesthetic Care Unit.

Due to the type of surgery that you have had, there will be a number of drips in place to allow for fluids, drugs and nutrition to be given to you via tubes. This is because you will not be able to tolerate food and drink until your bowel recovers. You will have a central line inserted in your neck or chest area to allow for these to be given.

There will be a tube in your nostril, down into your stomach (known as a naso-gastric tube) to prevent you from vomiting while your bowel is not working. You may have drains in your chest and abdomen, as well as a urinary catheter. All of these are put in place whilst you are under anaesthetic. One of the nurses will be happy to explain them all to you when you are awake so that you fully understand what they do and why they are there.

You may also have an epidural in your back and/or a pump containing a painkiller with a button for you to press to control your pain relief. This is known as patient-controlled analgesia (PCA) and we will show you how to use it. The specialist pain nurses will visit you daily to check that you are comfortable and that the PCA is working.

The nurses will communicate closely with your relatives to update them on your progress. The peritoneal malignancy specialist nurses will also review you and will be available for your relatives to speak to.

We will transfer your basic toiletries from the ward to the Post Anaesthetic Care Unit and if need be, we can fetch other items such as glasses, music and so on.

Discharge from PACU will be as soon as the doctors feel you are well enough to be transferred to our specialist ward. You will then be transferred back to C6. The nurses will coordinate this and keep you and your family informed.

Can I have visitors?

Visitors are welcome to visit at any time while you are on ward C6, although we do ask them to respect your need for rest and sleep. We also recognise that this is a particularly stressful and anxious time for families and friends so their rest is also very important. We do ask that only two people are at the patient's bedside at any one time and we leave the decision to you and your family as to whether friends visit. The only visitors we do restrict are children, but please talk to one of the nurses if you would like your children to visit.

Visiting hours for ward C6 are currently, 14:00 – 15:30 and 1800 – 1900. Please note visiting is currently limited to two visitors per patient once per day in either of the two visiting slots – all visits must be pre-booked with the ward. The ward can be contacted on 029 2184 2081.

Note for visitors

There may be certain times when you are asked to leave the bedside and go to the waiting room. This is usually when procedures are being carried out. Sometimes these may take a while but please do not worry that you have been forgotten – the nurse will come and get you as soon as possible.

Telephone enquiries are also welcome but we would appreciate it if you could select one member of the family as a spokesperson so that any information can go through that person to everyone else. The reason we ask this is so that the nurse looking after your loved one is not constantly leaving their bedside to answer the telephone.

Unfortunately, due to the risk of infection, flowers are not permitted in the Post anaesthetic Care Unit or ward, but cards and letters are welcome and can be displayed at the bedside.

What happens next?

When you are back on C6, the peritoneal malignancy consultants and their teams will continue to manage your care. You may still have some or all of the tubes you had in Intensive Care/Post Anaesthetic Care Unit, with the exception of the breathing tube. These will be removed gradually as you recover.

Everyone is different and it is difficult to predict how one person will progress in comparison to someone else. There may be other patients on the ward who have had the same or similar operation as you, but try not to compare your progress with theirs. Some of your tubes may be in for a longer or shorter time but that does not necessarily mean that one person is doing better than the other.

Once you have been transferred back to C6, the nurses on the ward will continue to coordinate your care. We will discuss a care plan with you, your family, the doctors, physiotherapists and other members of the multi-disciplinary team. Our aim is to provide the best continuity of care possible, forming a plan that will address all your needs.

We want your move from the Post anaesthetic Care Unit to C6 to be as smooth as possible. One of the biggest differences you will notice is that you are no longer nursed on a one to one basis and your nurse will be caring for you and other patients.

In the first few days following your transfer to C6 we will be focused on getting you settled into the ward routine and will start getting you up and moving around. Although this may seem daunting, it is essential that we help you to start moving as soon as possible.
This will help minimise the potential risks of deep vein thrombosis and chest infection which can occur when you are less active than normal.

We will also ask you to wear anti-embolic stockings (to prevent blood clots) throughout your stay on C6. You will have sub cutaneous injection post-surgery which will continue at home. You or a family member will be thought how to self-administer these. Referral can be made to district nurse if you need their help. They will continue for 28 days after surgery.

What about pain?

The nurses on C6 are very conscientious in assessing your level of comfort. You may find that your level of pain may change as you increase your activity. Your epidural and/or PCA should be of great help as we work together to get you back to independent activity. The acute pain nurses will also visit. If you are in pain, please do not suffer in silence, but let one of the nurses know. Some pain is expected but we want you to be as comfortable as possible.

How long will I be in hospital?

The post-operative recovery period for this type of surgery is much longer than you may have experienced with other operations. Again, every individual is different but you should expect to be in hospital for 7-10 days.

The main focus on your recovery is your bowel recovering and working well again. After your bowel has been handled in the operating theatre it needs time to settle back into a rhythm. Your digestive system will need to recover for you to eat enough to satisfy your body's requirements.

It is important to remember the tremendous amount of manipulation your bowels endured during your surgery. To enable the surgeons to remove the tumour, your bowel needs to be handled and moved around. This, along with the chemotherapy, will cause a lot of irritation. Your abdominal tissues will also be extremely inflamed, not only from the surgery but the chemotherapy as well.

It takes a lot of calories and time for your body to heal after an event such as this. It is for this reason that you will need to have your naso-gastric tube in place for so long. For some people, this becomes the most tedious part of the recovery. The tube can be uncomfortable but it is very important that it should not be taken out too early. Your bowels will not start to function until they are ready. Sometimes the tube is removed and has to be replaced for some more time due to sickness. Please do not be alarmed by this.

The best advice we can give you is to try to keep a positive attitude and take it one day at a time. Once your bowels do start to function, do not be alarmed if you have diarrhoea. This is common and can persist for some time. We can give you some medication to control the diarrhoea if necessary.

Throughout the period that your bowel is resting and recovering you will be on total parenteral nutrition (TPN). This is given to you intravenously (into a vein) via a central line which is a larger cannula (plastic tube) with several openings (known as ports) to allow us to give more than one infusion.

The amount of calories required to promote healing can be substantial and even after you start eating, TPN may be necessary to help you meet your daily requirement. Members of the nutrition team will visit you and be happy to answer any questions you may have about TPN. They will also be able to give you specialist nutritional advice to ensure you meet your daily requirements.

Physiotherapy

This is a general guide to the physiotherapy that you may receive during your hospital stay. Before your operation the physiotherapist may visit you to explain their role and also some of the treatments you may have. You may also be asked questions about your current levels of activity and be asked to perform some simple baseline activity assessments.

If you are currently able to do so, we recommend that you continue with your normal exercise regime and if possible fully engage with the prehabilitation programme that you will be given prior to your operation. However, now is not the time to experiment with new sports or extreme activities.

In addition, we would recommend that you bring appropriate footwear and clothing suitable for exercise. We advise wearing enclosed slippers with a good sole/grip, and for later physiotherapy and exercise sessions, a comfortable pair of shoes or trainers.

Why do I need a physiotherapist?

It is inevitable that there will be a certain amount of swelling and discomfort for a while after surgery. This can mean that your breathing becomes shallower and can lead to a condition called **atelectasis** - where the smaller airways inside your lungs collapse down due to lack of use. This can cause a chest infection.

Due to the period of time spent in bed after the operation, your circulation can become sluggish. This can in turn lead to conditions in which the blood clots in the lung (pulmonary embolus) or elsewhere in the body (deep vein thrombosis).

However, it is not all doom and gloom! Physiotherapy soon after your operation can reduce the risks of all of these conditions and can help you recover as quickly as possible.

Your physiotherapy will start on the day after your operation in the Post Anaesthetic Care Unit and will continue on C6 until you no longer require it.

Techniques used in physiotherapy

The role of the physiotherapist is to work with you to help maximise your lung function and to increase your mobility after your operation.

- **Breathing exercises**

These are used to prevent the smaller airways closing down and to clear any secretions from the chest. We will give you a device called a spirometer to aid deep breathing and encourage you to cough as this will help to clear secretions (phlegm). As it is the abdominal muscles which contract during a cough, this can be uncomfortable after surgery. To help relieve this, place some firm pressure with a pillow over your wound as you cough to allow for deep breathing.

- **Mobility**

We will get you out of bed to sit in the chair as soon as possible. We often use a short exercise programme to enable you to maintain your muscle strength and help your circulation. We will support you to get back on your feet again after surgery. We will also discuss prior to discharge how to progress any activity with appropriate precautions.

How can I speed up my recovery?

We would usually advise you as soon as possible to start deep breathing exercises and coughing to keep your chest clear. Your physiotherapist will explain this in more detail during your first session.

Stoma care

If your tumour is widespread, especially in the pelvis and surrounding large bowel, there is a chance of having to form a stoma. This is often temporary and can be closed again when you are fully recovered from your surgery.
For some people however, the stoma may need to be permanent. Your consultant will have discussed this with you during your outpatient appointment.

A stoma is an artificial opening in your abdominal wall through which a portion of your large (colostomy) or small bowel (ileostomy) is fixed to allow for discharge of the waste products that would normally be expelled through your anus (bottom). The surgeons will only perform a stoma if it has been necessary to remove portions of your large bowel which have been damaged or to which the blood supply has been affected by the removal of the disease. It is important that you understand that this may be a factor in your best chance of control of this disease.

The stoma care nurse will visit you before your operation to discuss the possibility of a stoma and to answer any questions you or your family may have about this aspect of the surgery. Please do not hesitate to ask anything that worries you – we are all in the same team and that team includes you! Nothing you can ask will shock or embarrass us, so please feel free to express your concerns.

After this discussion, the nurse will mark suitable spots on your abdomen for the position of the stoma. Please do not be alarmed by this. The marks are necessary in case a stoma needs to be done, and do not mean that it will definitely happen. You will only have a stoma if you need one. The nurses on the wards and the stoma care specialist nurses will help you come to terms with it if it happens. We will work with you and your family to make it as easy as possible for you to learn to care for the stoma.

All the necessary appliances for the stoma will be provided for you by the NHS and you will be exempt from prescription charges while you have a stoma. We will also refer you to the stoma care nurses in your local area who can provide support until you have the stoma reversed.

What should I bring?

- ✓ Several nightdresses or pairs of pyjamas
- ✓ Day clothes – comfortable soft loose-fitting clothes for before your operation, in the last few days of your hospital stay and your journey home.
- ✓ Reading glasses
- ✓ Clean underwear
- ✓ Dressing gown and slippers
- ✓ Toiletries – soap, toothbrush, toothpaste, shampoo, dry shampoo, deodorant
- ✓ Razor and shaving materials
- ✓ Comb or hairbrush
- ✓ Portable things you enjoy using/doing e.g. books, cards, games, radio and ear phones, music
- ✓ Small amount of money
- ✓ Medication that you normally take
- ✓ Notebook and pen
- ✓ Address book and important phone numbers, including your GP's contact details
- ✓ A bottle of squash
- ✓ Free Wi-Fi is available on the ward.
- ✓ Ear plugs
- ✓ Eye masks

When can I go home?

You will only be discharged from hospital when the peritoneal malignancy consultants, the physiotherapists and the stoma care nurses (if you have a stoma) think you are well enough. You will be able to walk around the hospital by this point and it is important that you continue this exercise when you get home.

When can I return to normal activities?

You will not be able to manage heavy lifting but will be able to do some light exercise such as walking. This should be built upon at a comfortable pace and included in your daily routine.

If you have any queries once you go home, please feel free to contact the peritoneal malignancy Clinical Nurse Specialist for advice. However, if you become unwell, please contact your GP who will have received a letter explaining the surgery you have had done.

You may find that your appetite is small when you are discharged from hospital. This is normal and you should try to eat a balanced diet in small, regular portions. Your appetite will improve with time, and again, how long it takes will be individual to you.

You should not attempt to drive for at least six to eight weeks after your surgery. You need to be able to wear a seatbelt and perform an emergency stop. You are the judge of this and are responsible for ensuring you are safe before you drive. You will also need to inform your insurance company that you have had this operation to ensure you are covered in the event of an accident.

We will give you full advice about your discharge, medication and follow-up care before you leave hospital. Please do not hesitate to ask any questions, no matter how small you think they are.

Commonly used words

Analgesia	Pain relief
Chest drain	A drain used to re-expand the lung
CVC (central) line	A type of cannula that goes into a large vein
CRS	Cytoreductive Surgery
Diaphragm	A domed shaped muscle between your chest and abdomen, important to your breathing
Epidural	A method of pain relief where painkillers are delivered by a continual infusion directly into your back
PACU	Post Anaesthetic Care Unit
HIPEC	Warm chemotherapy wash in abdomen during cytoreductive Surgery
ICU/ITU	Intensive care/ therapy unit
NG tube	Naso-gastric tube – a tube through your nose and into your stomach to help prevent sickness and aspirate fluid from your stomach/Bowels
Obs	Observations – these are taken regularly, for example blood pressure, temperature and pulse
Omentum	Fatty layer which covers the bowel
PCA	Patient controlled analgesia – a device that allows you to safely administer painkillers
Peritoneum	Thin membrane covering abdominal wall and organs
Physio	The treatment given to you by the physiotherapist
Sedated	Asleep with the use of drugs

CNS	Cancer Nurse Specialist
Wound drains	In place to drain fluid from your abdomen and wound after surgery

Your notes

Useful contact numbers

Hospital switchboard
029 2074 7747

Peritoneal malignancy clinical nurse specialist team
Caroline Trezise: 029 2184 1816 (answerphone)

Post Anaesthetic Care Unit
02921847517

Consultant secretaries
029 2184 3935
029 2184 3351

C6
029 2184 2081

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