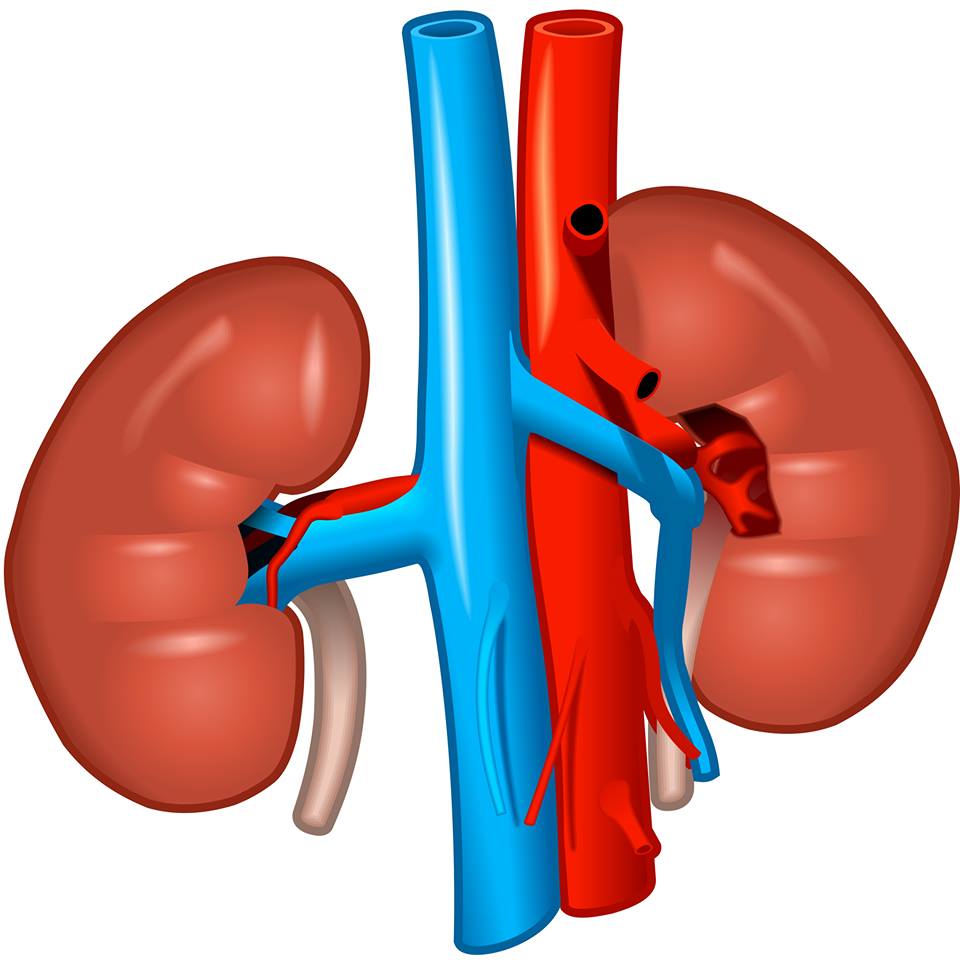


**Put the name of department or division here**

**Renal Directorate**

**Information**

**Nurses, Health Care Assistants and Students**



Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Start date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Version 2 – updated July 2022

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# Introduction to Renal Services

The Renal directorate of Lancashire and South Cumbria provide a specialist service to a population of 1.8 million people. There are 13712 people who are known to the service with 498 patients requiring dialysis in centre, 106 patients dialyzing at home or training, 683 patients under the care of the kidney choices team and 791 transplant patients (Figures correct, May 2022).

The LTHTr renal directorate (specialist services) consists of:

* Acute Dialysis Bay
* Chorley Dialysis Satellite Haemodialysis Unit
* Home Therapy Team
* Nephrology Ward (Ward 25) comprising of 23 beds and a treatment room for day cases
* Renal Consultants and medical team
* Renal Specialist Nurses
* Royal Preston Hospital Haemodialysis Unit (hub unit)
* Westmoorland Renal Centre (Kendal)

There are 4 other satellite renal centres, which are run by 2 private companies called Diaverum and Fresenius Medical Care. The centres provide haemodialysis and renal outpatient clinics to enable patients to be seen closer to their homes, ideally within 30 minutes travel time.

* Clifton Haemodialysis unit (Blackpool)
* Furness Renal Centre (Barrow in Furness)
* John Sagar Renal Centre (Burnley)
* Laurie Solomon Renal Centre (Blackburn)

# The Kidney and it’s Functions

The kidney’s main functions:

1. The production of erythropoietin (epo)
2. Active in production of vitamin D
3. Active in acid base homeostasis
4. Conserve water, salts and electrolytes
5. Separate urea, mineral salts, toxins and other waste products from the blood

Renal function is assessed in accordance with the Estimated Glomerular Filtration Rate (eGFR) which is divided into five stages. When the eGFR is less than 15mls/min/1.73m2 then the patient is considered to have Established Renal Failure and will require conservative management, transplant or renal replacement therapy.

Common causes of chronic renal failure are:

Cardiovascular Disease/Hypertension

Diabetes

Certain ethnic backgrounds including South Asian, Afro Caribbean and Chinese (Kidney Care Services 2008).

Less common causes of chronic renal failure are:

Autoimmune diseases

Multiple Myeloma

Genetic Abnormalities

Trauma

Common clinical features of renal failure can include:

Nausea and vomiting (which can result in weight loss)

Lethargy

Pruritus

Oedema (both peripheral and pulmonary)

Shortness of breath

Reduced urine output

Hypertension

Headaches

(Levy, Morgan and Brown 2009)

# Ward 25

Ward 25 comprises of 23 acute inpatient beds, a treatment room for up to 2 same sex patients and a 3-bed acute haemodialysis bay. There are 2 side rooms and a bay that also have haemodialysis machines available in order to provide treatment to patients without having to leave the ward to attend the dialysis unit.

The ward provides care for adult patients who require investigations into their deteriorating renal function, patients who require inpatient care due to complications of dialysis or their kidney transplant, patients who have developed Acute Kidney Injury (AKI), Chronic Kidney Disease (CKD) and other renal related problems. They also care for patients of other specialities (e.g., vascular, cardiac, orthopaedic) who are unable to care for complex renal patients on their own wards.

Ward 25 also provides care for patients undergoing a number of procedures. They can provide pre and post operation care for patients attending the Dialysis Unit theatre for placement of dialysis access, including peritoneal dialysis catheters (Tenckhoff Catheters), Tunnelled and Temporary Central Venous Catheters.

### Some of the things you may experience on ward 25:

**Fluid Status**:

When patients develop renal failure and they become symptomatic, their urine output decreases. As a result of the decrease the fluid gathers on the body and the patient gains weight. By weighing the patients on a daily basis, it is possible to establish how much fluid they are retaining. Associated with this is the daily use of fluid balance documentation, this allows the nursing and medical staff to measure the daily intake and output and identify any discrepancies.

**Renal Biopsy**:

Renal Biopsies are performed on some patients; this involves removing a small amount of tissue from the kidney in order to establish the cause of loss of renal function. Following this procedure patients require close observation for a number for hours.

**Renal Angiogram**:

Renal Angiograms are performed and once again the patients need close observation for the next 24hrs. The purpose of a renal angiogram is to determine the number and the quality of the blood vessels, which allow the blood to flow to and from the kidneys. It also shows a detailed anatomy of the kidney, ureters and bladder. The procedure may or may not include stenting of the blood vessels.

**Parathyroidectomy**:

This is an operation where the parathyroid glands are removed. They are found in the neck, and they produce parathyroid hormones (PTH). When a patient is in renal failure these glands become overactive and produce too much PTH. This in turn leads to blood calcium and phosphate levels rising. Calcium can then be deposited in the blood vessels and in the skin. To prevent this occurring the patients are advised to undergo a parathyroidectomy. The glands are removed, the blood levels return to normal and prevent these complications developing. After the operation, the patient needs to stay in hospital for a few days. This allows the doctors to do regular calcium checks and to ensure the levels have returned to normal (Stein and Wild 2002).

**Acute Kidney Injury**:

Acute kidney injury (AKI) is a sudden episode of kidney failure or kidney damage that happens within a few hours or a few days.

AKI causes a build-up of waste products in your blood and makes it hard for your kidneys to keep the right balance of fluid in your body.

AKI normally happens as a complication of another serious illness. It's not the result of a physical blow to the kidneys, as the name might suggest. This type of kidney damage is usually seen in older people who are unwell with other conditions and the kidneys are also affected although we do see AKI in young adults with no past medical history.

Without quick treatment, abnormal levels of salts and chemicals can build up in the body, which affects the ability of other organs to work properly. If the kidneys shut down completely, this may require temporary support from a dialysis machine, or lead to death.

AKI can also occur in patients with Chronic Kidney Disease. This is known as Acute on Chronic Kidney Disease.

# Haemodialysis Units

The hub haemodialysis unit at RPH and the satellite units provide renal replacement treatment to patients who require haemodialysis. Patients are allocated dialysis slots comprising of Monday, Wednesday, Friday or Tuesday, Thursday, Saturday depending on availability at the time they need to commence dialysis, their work pattern and family commitments. Patients are generally prescribed their dialysis 4 hours per session, 3 sessions per week but this can vary depending on patient’s blood results and needs. The sessions allocated may be a morning, afternoon or twilight shift, depending on what each unit can offer.

The 28-bed hub haemodialysis unit co-ordinates the dialysis slots and where patients can attend for their treatment by liaising with the satellite units for their availability. The hub is where the more problematic patients dialyze particularly if they are acutely unwell or have vascular access difficulties. Patients who need to attend appointments in other areas of the hospital may attend for dialysis after their appointments. The hub dialyzes a mixture of regular outpatients and any inpatients who require dialysis treatment, which includes transferring patients in from surrounding hospitals. The hub also has an on-call service which can be accessed if a patient presents in the emergency department acutely unwell and needs dialysis or if is already an in-patient.

The haemodialysis units can also provide respite care for patients who are on home haemodialysis if they or their carer are no longer able to dialyze at home. They can also provide holiday dialysis, subject to slot availability, to dialysis patients from the UK and abroad and can help patients to arrange their holiday dialysis.

Patients who attend the satellite units are generally stable on dialysis and able to enter and leave the units independently due to the access to the units and medical cover available. The satellite units are found in local communities and may be located within a local hospital and are more convenient for patients who live in the local areas. The aim when allocating slots to patients is to place them at a unit within 30 minutes of their home address.

The hub also provides staff for the acute dialysis bay situated on ward 25. This area has 3 beds for patients on ward 25 who require dialysis treatment. It can also be used for inpatients who are not stable enough to attend the hub unit to reduce their movement though the hospital and there is more medical cover available on the ward.

### Some of the things you may experience on the haemodialysis units:

**Haemodialysis**

Haemodialysis filtrates the blood through a semi-permeable membrane; the toxins and any unwanted fluid are removed and then carried away by the dialysate fluid. The two main processes used are diffusion and ultrafiltration. Diffusion is the movement of toxins from an area of high concentration to a lower one. The toxins are removed from the blood through the dialysis membrane to the dialysis fluid. Ultrafiltration is the process by which excess fluid is removed from the body. A hydrostatic pressure is created; this means the fluid pressure is greater on one side of the dialysis membrane than the other. This causes the fluid to cross the membrane from the area of high pressure to the area of low pressure (Harris 2012).

**Arteriovenous Fistula**

The Gold Standard for vascular access is an AV fistula as it provides the best start to dialysis and should be planned in advance if possible. This is a permanent access which is created by surgeons involving the joining of an artery and a vein and whenever possible they try to use the patient’s non-dominant arm as first choice. The sites where an arterio-venous fistula can be formed are:

* The wrist – radial artery connected to the cephalic vein
* The elbow – brachial artery to the cephalic vein
* The upper arm – brachial artery to the basilica vein

The fistula should be assessed at each dialysis session before cannulating to ensure it working and safe to use.

**Tunnelled Line**

Some patients are unable to have a fistula created or may require an urgent start to their dialysis. In this case they will have a tunnelled line, or a temporary central venous catheter (CVC) inserted into the femoral, jugular or subclavian vein. These temporary CVC’s pose a high risk of infection and should be used for no longer than 5 days. Tunnelled lines must be accessed using strict aseptic non touch technique (ANTT). The exit site should be assessed at each dialysis session through the clear dressing to check for signs of infection. The dressing is changed and exit site cleaned once a week.

**Monthly Bloods**

Blood samples are obtained from dialysis patients once a month in line with Kidney Disease Outcome Quality Initiative (KDOQI) guidelines. The blood results show how well a patient is dialyzing and if their dialysis prescription or medications need to be modified. The results are monitored by various members of the MDT and by the patients named nurse.

**Transplant Bloods**

Transplant blood tests and transplant crossmatch samples should be sent on a Monday, Tuesday or Wednesday. Transplant crossmatch samples should be sent regardless of being suspended on the transplant waiting list. The transplant team need to be informed if a patient is unwell, admitted to hospital, had any recent infections, is pregnant, goes on holiday or has a blood transfusion.

**Haemodialysis Complications**

Patients can be prone to hypotension; the process of fluid removal can cause this. To prevent the patient developing hypotension fluid removal should be consistent throughout dialysis and ultrafiltration should be done in a controlled manner. If large amounts of fluid need to be removed, ideally treatment should be prolonged to in order to accommodate this situation. A patient’s weight should also be reviewed on a regular basis in order to ensure that they have not lost body fat and that fluid removal is adjusted accordingly. To correct hypotension in the haemodialysis patient, they should be placed in the Trendelenburg position and a small bolus of fluid given, once the patient has stabilised then dialysis can be resumed, with fluid being removed at a slower rate and the patient monitored.

Associated with hypotension, patients can start to experience cramps. These can be very painful and can be caused by large amounts of fluid removal. As it can be fluid related the same treatment given for hypotension can be initiated. Patients can also be prescribed quinine in order to alleviate the discomfort. Nausea and vomiting can occur with hypotension and disequilibrium. If these two issues have been dealt with and the patient still feels nauseous then the use of anti-emetics is recommended. As dialysis deals with the balance of electrolytes, then it can be expected that some patients will suffer from electrolyte imbalance including low or raised sodium, calcium and potassium. This can be monitored through regular electrolyte checks and adjustment of the dialysate fluid as needed. Disequilibrium is a combination of systemic and neurological symptoms, which occur during or after dialysis. It is most common in patients who are severely uraemic. In mild cases patients may feel nauseous and restless and experience headaches, whilst in more severe cases they can have hypertension, seizures and even become unconscious. In most cases dialysis is reduced or even stooped until the patient has stabilised. Finally, patients can bleed as a result of dialysis. As anticoagulation medication is used to prevent the risk of thrombosis, this can increase their risk of bleeding.

# Home Therapy Unit

The Home therapy team cares for patients undergoing peritoneal dialysis (PD) and home haemodialysis (HHD at home along with staffing the main training unit at Chorley hospital. The training unit consists of 4 haemodialysis stations and has space to train PD patients. The unit also offers a drop-in service for patients who need assessments for problems such as peritonitis or exit site infections and patients can ring the unit from 07:00 to 18:00 Monday to Friday for advice. There is also an on-call every evening from 18:00 to 00:00 for patients requiring urgent advice.

The team deal with any PD patients who are receiving inpatient care who are not on ward 25. There is also a small team of community sisters who visit patients at home where they can assess dialysis techniques, general well-being and plan their care. The assisted automated peritoneal dialysis (aAPD) team visit patients at home to clear the used consumables and set up the machine for use that night. This service is offered to patients who wish to have APD but are unable to set up the machine, but able to connect themselves to dialysis. The home therapy team may allow you to accompany them on home visits, however you are expected to be aware of the lone worker policy which is available on the intranet, and you will be required to provide a contact number, address and NOK details.

### Some of the things you may experience with the Home Therapy team:

**Peritoneal Dialysis**

When a patient is commenced on Peritoneal Dialysis, they have a tube inserted through the lower abdomen wall into the peritoneal cavity, half of the catheter lies inside the abdomen and half lies outside, this is called a Tenckhoff Catheter. Through this the dialysate fluid is drained into the peritoneum to allow the exchange of toxins and fluid, through the process of osmosis and diffusion through the peritoneal membrane. Toxins are removed from the blood stream by the process of diffusion. The toxins are drawn into the dialysate fluid therefore reducing their concentration in the blood. The fluid movement is determined by osmosis. Fluid will move across the peritoneal membrane to the area of higher osmotic pressure. The dialysis fluid used comes in different strengths, the stronger the bag then more fluid can be removed, however we do try to avoid using strong bags as this can damage the peritoneum and reduce the time a patient will spend undergoing PD. Once the fluid has been in the peritoneum for a minimum of 4 hours it will then be drained out, therefore removing the toxins and excess fluid from the body.

There are two main types of PD, which are Continuous Ambulatory Peritoneal Dialysis (CAPD) and Automated Peritoneal Dialysis (APD). CAPD consists of 4 exchanges a day during which the effluent is drained out and new dialysate fluid is put in situ until the next exchange. APD is performed every night whilst the patient is asleep. A dialysis machine is used, and this drains the fluid in and out over a set time and a set number of cycles. In order to undertake PD, the patients are trained in the procedures for hand washing and sterile techniques, as a lack of care in these areas can lead to complications arising. These complications are treatable if identified early.

**Peritonitis**

This is an infection of the peritoneum and if left untreated it can cause severe complications. The first signs of Peritonitis are high temperature, abdominal pain, nausea and vomiting along with cloudy effluent bags. It is generally caused by poor hygiene techniques, which allow the bacteria to travel up the Tenckhoff catheter into the peritoneum. Inappropriate hand washing or drying, and dirty surfaces can be the cause as well as open windows, blowing fans and coughing over the area. Peritonitis is treatable and patients need to attend the training unit so samples of the dialysate fluid can be obtained and sent to the Pathology Lab for White Cell Count (WWC) and Cultures. The patient is given antibiotics following the Peritonitis Protocol and the nurse would also check the patients exit site for signs of infection and this can also cause peritonitis. Each episode of peritonitis scars the peritoneum and shortens the time a patient will spend on PD. More severe cases of peritonitis can result in a hospital admission.

**Exit site infection**

This is an infection around the area of the site where the Tenckhoff catheter is inserted, which is called the Exit Site. Once again this can be caused by poor hygiene techniques. However breakdown of the skin can occur if the patient has a reaction to the plaster of cleaning agent. When an exit site becomes infected, the patient complains of pain around the site, it can appear red around the site and along the length of the catheter and there could also be some discharge. Once the patient has been assessed, a swab will be taken, and antibiotic treatment commenced.

**Home Haemodialysis**

Patients who wish to be independent at home with dialysis can have their home assessed and if suitable they can then undertake training. There are 3 types of haemodialysis machine used on the training unit to offer more choice to patients based on patient tolerance and suitability for their home.

The training unit is open Monday to Friday and patients generally attend daily for 6-12 weeks to train on haemodialysis. Patients will learn all aspects of haemodialysis, including learning to insert their own needles if they have a fistula. Once the patient is competent and ready to go home, the renal technicians install all the necessary components for the patient to dialyse at home. During the first weeks at home, the patients are supported by the community sisters who will visit on a daily basis to support the transition. As confidence builds at home, the support of the community sisters lessons and patients are encouraged to ring the training unit with any problems.

# The Renal Multi-disciplinary Team (MDT)

The MDT meets once a week with a representative from each specialist team in attendance led by the consultant of the week. At the meeting, patients of concern from each specialist team are discussed and a plan of care is agreed upon for them. Within the MDT there are many people, each of whom has a specific role to play in the patient’s care. Each patient will have their care led by one of the 15 Renal Consultants and their team of doctors. The Doctors look after the patients on ward 25, the dialysis units, home therapy and any renal patients who are outliers in other ward of the hospital. Unlike most areas in the hospital there is also a Senior Doctor and a Consultant who work at weekends and can be contacted out of hours, should this be needed.

The MDT also comprises a number of specialist nurses, each experienced in a specific area of renal nursing, allowing them to deliver expert care to the patients.

## Kidney Choices Team

The role of the kidney choices team is to help patients with advanced chronic kidney disease (CKD) decide what treatment they will have when their kidney function is very low, and they feel unwell. Some patients with low levels of kidney function have no symptoms and appear well. Others have all the symptoms described on page 4 of this booklet and are very unwell indeed. Our aim is always to prepare patients to start dialysis in a planned, timely way without the need for emergency admission to hospital to start dialysis. This is not always possible. Fluid overload is often a major problem which often meads to patients being admitted as an emergency. Symptoms of fluid overload include leg swelling, breathlessness and an inability to lie flat and breathe comfortably. Not every patient who needs to start dialysis will have a problem with this.

Patients often feel very anxious when they are referred to the kidney choices team because they believe they will need to start dialysis very soon.  Many cannot believe they have a serious problem with their kidneys and are in denial about their condition because they don’t feel ill.  This can lead to delays in decision-making and can result in the patient having an unplanned start to dialysis because they could not bear to think about the dialysis options, and they don’t make any firm decisions about what kind of dialysis they would opt for when their kidneys fail.  Others may already have had some dialysis on ward 25 after becoming acutely unwell.  Some of the patients we see manage without renal replacement therapy (i.e., transplantation or dialysis) for many months, or even years.

Some patients who are very elderly or have other health problems besides CKD opt not to have dialysis.  Choosing not to dialyse is called conservative management. Many of them still attend a renal clinic and have treatment for anaemia.  Any symptoms of CKD are managed with medication, diet and/or fluid restrictions.  Some people can live as long on conservative treatment without the burden of dialysis as those who opt to have it.  Quality of life can even be better for patients who are managed conservatively.

Most patients opt to have dialysis and choosing which type of dialysis will suit them best can be challenging for them.  Not everyone is suitable for a home therapy because they live in a small house or flat where there is no space for the storage of the equipment needed to dialyse at home.  People who have had major abdominal surgery are often not suitable for peritoneal dialysis (PD), whereas those with heart failure often do not tolerate haemodialysis (HD) well.

Patients and their relatives often have high expectations about dialysis and transplantation and explaining to people that these are not always possible for them can be very difficult.  There are many dilemmas in this role and patients are often anxious, distressed and even angry.

Patients are seen on the wards at RPH, but since the Covid pandemic most patients are seen in their own homes. There is a clinic held in Blackburn every fortnight alongside one of the renal consultants however much of the communication with patients is by telephone.

## Anaemia Team

The Anaemia Team has a specialised role specifically in caring for renal patients who have anaemia due to chronic kidney disease.

Renal anaemia is very common among people with damaged kidneys.   The main cause of anaemia is due to a lack of hormone called erythropoietin (epo) which is produced by the kidney. If the kidney is damaged, then a reduced amount of erythropoietin is produced resulting in less red blood cells being made resulting in anaemia. For the patient this means they become very tired, breathless, easily upset, and feel the cold more than normal.  Anaemia has a big impact on people’s quality of life as they often lack energy and physical strength needed to partake in a full active life.  Investigation and management of anaemia in people with CKD is considered if their haemoglobin (Hb) falls to 110 g/l or less or they develop symptoms attributable to anaemia.  Our aim is to maintain a stable Hb between 100 and 120 g/l (NICE 2011).

The anaemia team also see pre-dialysis patients, transplanted patients, haemodialysis and home therapy patients and treat their anaemia with artificial erythropoietin via an injection. The drugs we use are known as ESA’s (Erythropoietin Stimulating Agents).  Alongside ESA therapy we also use intravenous iron and have iron clinics each Wednesday to treat the iron deficiency anaemia that goes hand in hand with erythropoietin deficiency.

A home delivery service is used to supply the medication to patients at home as it is impractical to expect people to come to RPH every month to collect a prescription. General practitioners (GPs) do not prescribe ESA therapy; it is prescribed by the hospital only.

The anaemia team are always happy to be contacted if patients ring with enquiries regarding epo or iron and will give advice and support as required.

This is a very limited review of the anaemia team if you are interested in more information then please come along to the office.

## Dialysis Adequacy and Bone Chemistry Sister

The role of the dialysis adequacy and bone chemistry sister is to co-ordinate and review all the maintenance haemodialysis patients’ at RPH’s blood results to ensure they are receiving an appropriate dialysis; she can then adjust the dialysis prescriptions when necessary. She also looks after the bone chemistry of patients who are under the care of the renal team at RPH. She informs patients of their monthly blood results and discusses with them how they can improve their dialysis either by changing their dialysis prescription or advising patients on the importance of weighing pre and post dialysis and phosphate control. When in renal failure patients will develop renal bone disease, the nurse can monitor the calcium and phosphate levels and prescribe the appropriate phosphate binders in order to help maintain healthy bones and be pain free. As the bone chemistry sister is a non-medical prescriber, she can prescribe appropriate medication to treat mineral and bone disorders.

## Vascular Access Team

The Renal Vascular Access Team look after patients with dialysis access; this includes both haemodialysis and PD access.

The team assist the renal doctors when both haemodialysis and medical PD catheters are placed. Radiology provides a service for more complex placement of haemodialysis catheters & the vascular surgeons for insertion of PD catheters.

Fistulas are created by the vascular surgeons. The patency and functionality of the fistulae can be assessed by physical examination – feeling for the thrill or buzzing sensation, listening for a bruit or whooshing sound or ultrasound scan.

The team help with difficult cannulations & liaise with radiology when fistulae need salvaging or maintenance work completing.

The team can refer the patient to the renal, surgical or radiological teams to resolve issues.  They also provide a drop-in service to support any patient who has problematic vascular access whether they have dialysis at home, attend satellite units, are transplanted or pre dialysis.

## Transplant team

The transplant team can be broken down into 3 parts which are discussed below. Each subsidiary has a consultant lead and specialist nurses. As LTHTr is not a transplant centre the majority of cases within the catchment area are referred to Central Manchester and Manchester Children’s Hospital Trust.

## Recipient Transplant Work-up Team

Patients on the national deceased donor transplant waiting list are predominantly waiting for a kidney transplant, several cases for kidney and pancreas transplant and pancreas alone transplants. Pancreas transplants are only given to Type 1 diabetics with renal failure.

Recipients require to be referred to the transplant team by their consultant nephrologist, preferably when renal function has deteriorated, with an e GFR of 20 or below. Early referral is encouraged, in order for recipients to be prepared and placed on the deceased donor transplant waiting list, ready for transplantation when their e GFR falls to 15. Placement on to the deceased donor transplant waiting list can be made with an e GFR > 15 but this will be in a ‘suspended’ category. Activation on the deceased donor transplant waiting list can be performed shortly after the time of request.

All potential recipients see a specialist nurse in the first instance. Information literature is sent to the recipient prior to their appointment. At this appointment, a power-point presentation is given to help guide them through the process involved; relatives/partners/friends are encouraged to attend. Comprehensive tests are required to ensure fitness for transplantation and initial testing is instigated at this appointment.

Approximately 2 weeks after this appointment, the recipient is given a further appointment with the consultant lead in the transplant work-up clinic. Subsequent consultant appointments may be required with complicated cases, but the majority of cases are discussed at a weekly multi-disciplinary team meeting and referrals processed to the transplant surgeons at Manchester.

Written referrals to the transplant surgeons will only be made when work-up investigations are satisfactory and complete. Following a referral being made to Manchester, appointments to see the surgeons for acceptance on to the transplant waiting list are generally within 2 months. It is not uncommon for some cases needing to be discussed at multi-disciplinary team meetings, e.g., cardiac/vascular issues, past history of cancer etc.… and this can cause lengthy delays at times.

The average waiting time for a kidney transplant is now calculated between 3 -4 years. It is important that the fitness of recipients is monitored and maintained. RPH patients are given an Annual Review clinic appointment.

The transplant team also rely on colleagues and the potential recipients to inform the team with any recipient medical/social issues which may require temporary suspension on the deceased donor transplant waiting list. This practice avoids delays in deceased donor transplants taking place and unnecessary disappointment for the recipient being turned down by the transplant surgeons at the time of the kidney offer.

## Recipient Post-Transplant Team

There is a lead consultant for post- transplant care, Dr Arunachalam, two specialist nurses and two transplant pharmacists along with admin support. In total, there are 5 consultant nephrologists who conduct transplant follow-up for nearly 800 patients. Most clinics are held at RPH on Monday or Wednesday mornings and Blackburn on Wednesday afternoons. We now also offer telephone or video consultations instead of face-to-face appointments with the Doctor or the Nurse.

Transplant patients generally stay under the care of Manchester for a post-surgery period of 6-12 weeks, complicated cases may stay longer. The specialist nurse has monthly meetings with colleagues at Manchester, discussing the progression of cases, with the aim of providing a smooth transition of patients returning to LTH.

On return to LTH, the specialist nurse meets with the recipient at their first appointment. This allows the patient to be informed of the post- transplant process; contact details of the transplant team, understanding significance of test investigations - particularly blood results, the importance of regular attendance, comprehensive understanding and compliance with medication, promptness of seeking medical advice should symptoms develop, psychological and social issues.

## Living Kidney Donation Team

This team is led by a consultant along with an Associate Specialist and a specialist nurse. In addition, another specialist nurse rotates between living kidney donation and pre-transplant work-up.

A large percentage of Living kidney donors are blood relatives, but this is not a necessity. The department encourage and achieve a good number of spousal donation/transplantations. We also have several Altruistic donations annually. Altruistic donation is when a person wishes to donate a kidney to a recipient that they do not know.

The live donor team will accept referrals via several different methods. These can be from the recipient, donor self-referral, recipient’s consultants/specialist doctors, nursing and administrative staff. All donor referrals should be followed-up, speaking directly to both recipient and donor and if appropriate offering a specialist nurse consultation. Information literature is sent prior to this appointment if possible.

At the specialist nurse appointment, comprehensive discussion takes place regarding the whole process involved and should the recipient and donor wish to proceed, preliminary blood tests will be taken for compatibility; blood group and tissue-typing. At this stage, diabetes and uncontrolled hypertension would need to be ruled out (a donor may be on 2 anti-hypertensive agents). Renal profile, FBC, LFT’s and virology are checked. Up to five potential donors for one recipient may be seen at one time.

Further testing is then generally in 2 stages. When dealing with multiple donors for one recipient, this would usually be on just one donor at a time. This involves imaging of the kidneys, abdomen chest and renal circulation.

Living kidney donation work-up investigations usually take around 3 months. Once a living kidney donation referral is ready and the recipient has also been referred/accepted for transplantation, this will generally be sent to our surgical colleagues in Manchester but could be to any transplant unit in the UK or abroad. From initial referral to surgery, is generally between 4 -6 months.

We refer for direct donation when possible. If donors are found to be incompatible to their recipient, we can also consider blood-group/tissue-typing desensitisation (treatment involving plasma pheresis) and Paired/Pooled donation. Paired/Pooled donation is a kidney swapping programme within the UK; four times a year, a computer matching run takes place and if proved to be suitable, donors swap their kidney with another donor, to allow the respective recipients to receive a transplant.

All donors are offered an annual review, checking their renal function and blood-pressure in particular but also their general well-being. This is also a time for the team to receive feed-back of the donors ongoing journey in order for us to review our practice.

Nationally, the living kidney donation programme continues to grow, where deceased donation has remained very static. LTH reflects the national living kidney donation activity and on average, perform around 30 donation/transplants within a financial year.

## Holistic Care Sister

There are many aspects of a patient’s life that cannot be captured by blood tests or physiological recordings. This is particularly true for renal patients. The Renal Holistic Care Tool has been developed to help us get a better idea of how they are, any difficulties they might be having, any views they want to share and how we might help. It should be used from their first Kidney Choices review all the way through their kidney care and treatment.

It should help us avoid or minimise potential crises in their lives that, if not addressed, could lead to life threatening problems or require emergency admission. The purpose of the holistic care tool is to help patients tell us about their views on a range of issues such as social or psychological problems, symptom control, hopes and worries for the future then, where appropriate, advance care planning can begin.

The tool is completed every 3 months for dialysis patients, annually for transplant patients and on the first review for Kidney Choices patients. This highlights any changes to the patient’s physical or psychological health that may trigger concerns for staff and enable early support to be put into place. It is also beneficial to the patient as they change modality of treatment as the information can be shared across the renal service.

There are 4 sections to the Holistic Care Tool, 3 assessments for staff to complete, Clinical Frailty Scale, World Health Organisation Performance Scale and Charlson Comorbidity Index which are documented on a flow chart to show a trend. The 4th section, The Distress Thermometer, can be completed in a variety of ways to suit individual patients. The patient can take it home to discuss with family, complete it whilst on dialysis or the nurse could complete it while discussing it with the patient. All these (and other ways) are appropriate as it is designed to open up a conversation and allow the patient the opportunity to talk and discuss their concerns. Once the Distress Thermometer has been completed, the nurse caring for that patient should follow up with a conversation to explore further any concerns the patient has and what support is available. This may require referral to other colleagues e.g., Renal Psychologist, Dietitian or Social Worker, or for some patients, talking to staff and being given the opportunity to share their feelings and be heard may be all the support they need.

### Physiotherapist & Occupational Therapist

Physiotherapists and Occupational Therapists (OT) can be contacted when required. This mainly involves the inpatients on ward 25, as their input is often needed when planning discharge. The Renal MDT does not have its own Physiotherapist and OT; however, they are always aware of the issues surrounding renal patients and can advise the ward staff accordingly and can implement an appropriate care plan.

### Social Worker

The directorate also has a renal Social Worker who can offer appropriate advice, help and support and can liaise with other professionals and agencies to assist patients to maximise their wellbeing. The social worker can offer support and advice on a wide variety of subjects including housing, benefit 'check ups', support with PIP benefit, financial hardship grants, holiday grants, hot meal delivery providers, arranging carers, support at home, arranging counselling with Kidney Care UK, referrals for OT, getting extra rails/bannisters/ toilet frames/ wheelchairs, car parking/ blue badges, emergency falls monitors, support for carers, Care home options, emotional support.

### Renal Pharmacist

The Renal Pharmacist deals with all medication related queries and orders. There are many drugs that need to be adapted for renal patients as the kidneys are no longer able to excrete them. This can lead to an accumulation of medication, which can then have serious side effects on the patients, for example morphine can very quickly build up in the patient’s system and they can become sedated in a short period of time. Some drugs can also harm the kidneys and therefore are not appropriate for renal patients and some medication is not effective when there is renal impairment and alternatives need to be found. The pharmacist has a specialised knowledge of these issues and can advise the doctors and the nurses on safe drug administration.

### Renal Technicians

The Renal Technicians provide technical support to the hospital dialysis units at Preston and at Chorley and for all haemodialysis home patients. This includes repairing equipment and carrying out essential planned preventative maintenance on dialysis machines and water treatment systems. All equipment has to meet strict electrical safety requirements, and this is carried out by the renal technologists also. Water quality is a very important aspect of renal technology, and the technicians carry out all the necessary chemical and bacteriological sampling to ensure that the water used for dialysis is safe and meets the required standards. The technicians also commission all the equipment, setting up machines for home patients and retrieving equipment when home patients no longer dialyze at home. They also provide technical support to critical care at RPH and home patients and nurses who are having problems with the machines during dialysis. They are based at Preston dialysis unit with some technical support given to the satellite units.

### Assistant Technical Officer (ATO)

Support the day to day running of the dialysis units are a team of ATOs who assist the nurses in preparing the machines and stripping them after the treatments. They ensure that the consumables required are ready for the patients, including acid concentrate, bicarbonate, bloodlines and artificial kidneys (dialysers) and keep all the trolleys clean and stocked with items that the nurses require at hand for a dialysis session. They also keep all the equipment clean and swap out machines if faulty or required urgently.

### Renal Dietician

The Renal Dietician is a state registered Dietitian who specialises in kidney disease. They work as an integral part of the Renal MDT. Their role is to assess patients by looking at their medical history, medications, blood results/ blood trends, weight/ weight history/ body mass index, nutritional requirements/ nutritional intakes & social circumstances. They negotiate agreed plans/ make recommendations which provide specific individual tailored advice to patients on their dietary requirements, phosphate binders, oral supplements/ enteral feeds. They provide written practical tips & information & educate patients (& their families/ carers) on the importance of their diet, supplements & phosphate binders in kidney disease & the dangers of non-adherence to recommended regimens.

Renal Dietitians give specific advice on calorie (kcal), protein, potassium, phosphate, salt & fluid requirements. Dietary advice/ recommendations can change significantly over time depending on a patient’s condition, medication, treatment, nutritional intake & blood results.

Many patients with kidney disease experience symptoms of loss of appetite/ fatigue/ nausea & vomiting & as a consequence are at risk of becoming malnourished. Renal Dietitians give advice on appropriate food fortification/ meal & snack frequency and offer a variety of oral nutritional supplements & in certain circumstances recommend the use of enteral feeding.

The Renal Dietitians currently see all inpatients under a Renal Consultant (eGFR <15 or patients who are referred/ have a MUST score of 2 or above). They also see outpatients including pre-dialysis/ transplant patients, home dialysis (home haemodialysis & peritoneal dialysis patients) & in-centre haemodialysis patients at Preston, Chorley & Kendal Units.

### Renal Psychologist

The renal psychologist offers patients ‘talking therapy’ to help them deal with any psychological difficulties they may experience in relation to their kidney disease.  Meeting with the renal psychologist offers patients the opportunity to talk in more detail about their presenting problems and try to make sense of their thoughts, feelings and behaviours.  Working together with the renal psychologist, patients are supported in making the changes they want to improve their situation and develop greater acceptance and adjustment to kidney disease.

Dialysis nurses have frequent and regular contact with renal patients and are, therefore, in a good position to support patients.  Sometimes, patients may not want or need to see a psychologist but would benefit from a listening ear.

If you have tried to offer help to the patient but you feel that they need more support, please speak to a senior member of your team who can make a referral to psychology. The senior member of the team will then follow a formal referral process, which will include notifying the patient’s renal Consultant.  A referral to the renal psychologist should be discussed with the patient beforehand. When a referral is made, the patient will be put on a waiting list before their first appointment.

Once the patient has been assessed by the renal psychologist, a report will be sent to the referrer.

# Common Renal Drugs

There are common medications used in the renal directorate:

* Anti-Hypertensives
* Anti-glycaemic medication
* Phosphate binders
* Calcium supplements
* Sodium bicarbonate
* Anticoagulants
* Erythropoietin
* Iron (oral and intravenous)

Some medications are classed as nephrotoxic drugs; this means that they are toxic to the kidneys; these drugs can cause Acute Kidney injury or long-term kidney damage. Some of these drugs include:

* NSAIDs (nonsteroidal anti-inflammatory drug) like ibuprofen
* Opioids such as morphine sulphate
* Pethidine
* Losartan

# Infection Control

Due to the nature of the illness, renal patients become immunosuppressed leaving them at high risk of infection. It is of extreme importance that the patients’ safety is put first and that infection control policies are adhered to at all times. The simple way of maintaining good hygiene is through strict aseptic non-touch technique (ANTT), correct hand washing and the use of antibacterial gel when appropriate and after each point of contact with a patient (5 points of care). Nurses and doctors should also adhere to the uniform policy (which can be found on the intranet). When dealing with a patient who has an infection, protective clothing (apron and gloves) should be worn and removed before leaving the patient area and any waste disposed of in an appropriate manner and in the correct bags. The policies are there to try to reduce the risk of cross contamination between patients. Whilst all MDT members should abide by these rules it is also important to educate the patients and their visitors and explain to them why we are delivering care in this manner and what measures they can take to help.

As well as preventing the spread of infection, nurses should also attempt to identify any causes for concern; this means they can be proactive rather than merely reactive. It is policy within the directorate to swab every patient on admission for the purpose of identifying Staph Aureus (MRSA and MSSA), this then allows any infection to be quickly identified and dealt with, with the use of isolation if required. Patients are then swabbed on a weekly basis for the same reason. Any vascular device is also a potential infection site and should be monitored on a regular basis. Within our department we monitor the vascular access devices and document it on a daily basis on the vascular access devices (VAD) chart. Nurses must ensure they use the ANTT technique at all times when dealing with a vascular access device in order to reduce the risk of infection developing. These new guidelines have been effective and there has as a result been an improvement in this area.

Within the dialysis unit there are also strict procedures in place for both haemodialysis and peritoneal dialysis to reduce the incidence of infection; these are concerned with the care of the dialysis access. There are guidelines in place for nursing patients who are positive to blood borne infection. These can be found on the intranet, under renal guidelines and policies.

# Useful Information

### Student nurses

Whilst you are a student in the renal directorate, there is the opportunity to visit other spoke placements and by the end of your placement, you should have had the opportunity to gain experience in the different aspects of renal nursing. You should have a better understanding of the kidney, the principles of dialysis and the two different types of dialysis and hopefully some of the signs and symptoms of Acute Kidney Injury. Your area has a student board with the contact numbers and names for these placements.

### Shift Times

Ward 25

Day shift 07:00 – 19:30

Night shift 19:00 – 07:30

RPH Dialysis Unit

Early shift 07:00 – 15:00

Late shift 13:00 – 21:00

Chorley Satellite Unit

Early shift 07:00 – 16:00

Late shift 15:00 – 00:00

Other shift 10:00 – 19:00

Home therapy

Early shift 07:00 – 15:00

Late shift 10:00 – 18:00

On call 18:00 – 00:00 Monday to Friday

10:00 – 18:00 Saturday & Sunday

### Uniform

Please refer to the uniform policy available on the intranet.

### Sickness

Student nurses should follow the university protocol and also inform their placement area.

Staff should follow the sickness policy and contact their area directly.

**Some areas divert their phone lines to ward 25, please DO NOT leave a message with ward 25 staff. It is your responsibility to speak to the nurse in charge of your area.**

### 

TSS password - For staff or student nurses working at RPH or CDH dialysis units, please ask a member of staff to email renal IT manager for a username & password.

### Telephone Numbers

Ward 25 (01772) 522539

RPH Dialysis Unit (01772) 522755 or (01772) 522739

CDH Satellite Unit (01257) 257277 or (01257) 255537

Home Therapy (01257) 247565

# Checklists

Staff and student nurses should check which competencies are required for their role and area and only complete what is applicable. Competencies are available on the trust intranet.

Copies of competencies should be scanned to [clinical.education@lthtr.nhs.uk](mailto:clinical.education@lthtr.nhs.uk) and a copy scanned to Clinical Educator.

Copies of medical devices competencies should be given to your area’s medical device link nurse or Clinical educator.

### Renal Competencies

|  |  |  |
| --- | --- | --- |
| Area | Competency | Date completed |
| Ward 25 | Administration of Cyclophosphamide & workbook |  |
| Ward 25 | Administration of Rituximab & workbook |  |
| Haemodialysis unit & Home Therapy | Administration of Etelcalcetide during washback on haemodialysis |  |
| Haemodialysis unit & Home Therapy | Lining and priming a double pump |  |
| Haemodialysis unit & Home Therapy | Lining and priming a single pump |  |
| Haemodialysis unit & Home Therapy | Setting treatment parameters |  |
| Haemodialysis unit & Home Therapy | Identify and act on dialysis alarms |  |
| Haemodialysis unit & Home Therapy | Arterio-venous fistula cannulation |  |
| Haemodialysis unit & Home Therapy | Connect fistula to dialysis |  |
| Haemodialysis unit & Home Therapy | Disconnect fistula from dialysis |  |
| Haemodialysis unit & Home Therapy | Removal of arterio-venous fistula needles |  |
| Haemodialysis unit & Home Therapy | Connecting central line to dialysis |  |
| Haemodialysis unit & Home Therapy | Disconnect central line from dialysis |  |
| Haemodialysis unit & Home Therapy | Remove and dispose of equipment |  |
| Haemodialysis unit & Home Therapy | Blood culture sampling from Haemodialysis |  |
| Haemodialysis unit & Home Therapy | P.G.D signed |  |
| Home Therapy & Ward 25 | CAPD Baxter exchange |  |
| Home Therapy & Ward 25 | CAPD Fresenius exchange |  |
| Home Therapy & Ward 25 | APD Baxter Claria |  |
| Home Therapy & Ward 25 | APD Fresenius Harmony |  |
| Home Therapy | PET testing |  |
| Home Therapy & Ward 25 | Tenckhoff exit site |  |
| Home Therapy & Ward 25 | Tenckhoff extension line change |  |

### Trust Competencies

|  |  |  |
| --- | --- | --- |
| Area | Competency | Date completed |
| All areas | Vital signs & News |  |
| All areas | Blood Glucose |  |
| All areas | Aseptic Non-Touch Technique |  |
| Ward 25 | Cannulation |  |
| All areas | Venepuncture |  |
| All areas | Blood Cultures |  |
| Ward 25 | Catheterisation |  |
| All areas | Oral medications workbook |  |
| All areas | Safe administration of medication |  |
| Haemodialysis unit RPH & Ward 25 | Safe administration of controlled drugs |  |
| All areas | IV medications study day and workbook |  |
| All areas | IV administration – Intermittent infusion |  |
| All areas | IV administration – Bolus injection |  |
| All areas | IV Fluids |  |
| Haemodialysis unit & Ward 25 | Blood component administration |  |
| Haemodialysis unit & Ward 25 | Blood product collection |  |
| Haemodialysis unit & Ward 25 | Blood sampling pre transfusion |  |
| Haemodialysis unit RPH & Ward 25 | 12 lead ECG |  |
| All areas | Acute Illness management (AIM) |  |

### Medical Devices

|  |  |  |
| --- | --- | --- |
| Area | Competency | Date completed |
| Ward 25 | CN0006 Portable nebuliser compressor |  |
| Haemodialysis unit & Home Therapy | CN0013 Fresenius 5008s Dialysis Machine |  |
| All areas | CN0020 Abbott Blood Glucose/Ketone Monitor |  |
| Ward 25 | CN0025 McKinley T34 syringe driver |  |
| Haemodialysis unit RPH & Ward 25 | CN0026 Alaris GH & Guardrails Syringe Pump |  |
| Haemodialysis unit RPH & Ward 25 | CN0058 Hoist in a clinical setting |  |
| Ward 25 | CN0150 Freego Feeding pump |  |
| All areas | CN0537 Mindray Observation Machine |  |
| Ward 25 | CN0547 Verathon Bladder Scanner |  |
| Haemodialysis unit RPH & Ward 25 | CN0705 Alaris GP & Guardrails pump |  |
| Selected Staff | CN0723 Sonosite Ultrasound Scanner |  |
| Haemodialysis unit & Ward 25 | CN0765 P.R.O. Matt plus mattress, Duo 2 & Clinimove cushion |  |
| Ward 25 | CN0876 Urinalysis testing Urilyzer |  |
| Home Therapy & Ward 25 | CN0880 Baxter Claria APD machine |  |
| Home Therapy & Ward 25 | CN0881 Fresenius Harmony APD machine |  |
| Home Therapy | CN0883 NxStage Dialysis Machine |  |

### E-Learning

|  |  |  |
| --- | --- | --- |
| Area | E-learning Module | Date completed |
| All staff once only | Corporate Induction - induction |  |
| All staff every year | Fire Safety |  |
| All staff every 3 years | Health, Safety & Welfare |  |
| All staff every year | Information Governance & Data Security |  |
| All staff every 3 years | NHS Conflict Resolution |  |
| All staff every 3 years | Equality, Diversity & Human Rights |  |
| All staff every 2 years | Fraud & Bribery in the NHS |  |
| All staff every 3 years | Essentials of Patient Safety |  |
| Band 2 - 5 every 3 years | Safeguarding Adults Level 2 |  |
| Band 6 & above every 3 years | Safeguarding Adults Level 3 |  |
| All staff every 3 years | Safeguarding Children Level 2 |  |
| Band 2 - 5 every 3 years | Preventing Radicalisation – Basic Awareness |  |
| Band 6 & above every 3 years | Preventing Radicalisation – Awareness |  |
| All staff once only | Mental Health Risk Identification & Management tool |  |
| All staff once only | Fire Safety Emergency Evacuation |  |
| All staff every 2 years | Moving & Handling Level 2 (Clinical) |  |
| All staff once only | The safe use of Sharps |  |
| Haemodialysis unit & Ward 25 every 2 years | Food Safety Level 1 |  |
| Band 3 & above every 2 years | Aseptic Non-Touch Technique (ANTT) |  |
| All staff every year | Infection Prevention & Control Level 2 |  |
| All staff once only | NEWS 2 <https://news.ocbmedia.com/> |  |
| All staff once only | Trolley Familiarisation Training |  |
| All staff once only | Recognition & Escalation of the Deteriorating Patient |  |
| All staff every year + face to face | Basic Life Support Level 2 |  |
| All staff every 2 years | Adult Sepsis Awareness |  |
| Ward 25 & Haemodialysis unit once only | Pressure Ulcer Prevention |  |
| Ward 25 once only | Venous Thromboembolism |  |
| Ward 25 once only | Enhanced levels of care |  |
| Ward 25 & Haemodialysis unit once only | Falls prevention |  |
| Ward 25 & RPH Haemodialysis unit once only | Fluid Balance |  |
| All areas once only | Dementia Awareness training tier 1 |  |
| Ward 25 once only | Mouth Care Matters Awareness |  |
| Band 5 & above Ward 25 & Haemodialysis unit staff every 3 years | Blood Transfusion <http://nhs.learnprouk.com/> |  |
| Band 5 & above once only | Anaphylaxis course |  |
| Band 5 & above once only | Naloxone NPSA alert |  |
| Band 5 & above once only | Safe use of Insulin |  |
| All staff once only | Delivering very brief advice for alcohol & smoking |  |
| Band 5 & above once only | Management of Alcohol withdrawal |  |
| All staff once only | Medical Gases |  |
| Band 5 & above Ward 25 & Haemodialysis unit staff once only | Parkinson’s medication – Get it on time |  |
| Band 2 & 3 Ward 25 & Haemodialysis unit staff once only | Parkinson’s medication – Get it on time for staff who don’t administer medications |  |
| Band 5 & above once only | Medicine Management training |  |
| Band 5 & above Ward 25 staff once only | Continuous Subcutaneous Infusion palliative care (T34) |  |
| All staff once only | Essential end of life care for Nursing staff & AHP’s |  |
| Ward 25 once only | Dignity in death |  |
| Haemodialysis unit & Home Therapy every 2 years | Patient Group Directions |  |
| Optional | Alcidion (Smartpage) |  |

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Ward 25 student information pack

**Original copy written by Sr Amy Stringer (2016)**

**Ward 25**

**Royal Preston Hospital**

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