

Transplant, Urology and Nephrology Directorate

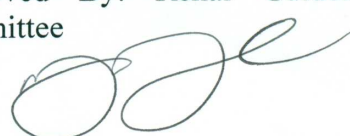

Transplant, Urology and Nephrology Directorate



Home Haemodialysis policy

Document Number: 36	Reason for Change: New Guideline
------------------------	----------------------------------

Original Date of Approval: N/A	Originally Approved By: N/A
--------------------------------	-----------------------------

Recent Date of Approval: September 2012	Approved By: Renal Guideline Committee  
--	--

Date Effective From September 2012	Superseded Documents
---------------------------------------	----------------------

Review Date: September 2014

Transplant, Urology and Nephrology Directorate



Home Haemodialysis policy

Document Number: 36	Reason for Change: New Guideline
------------------------	----------------------------------

Original Date of Approval: N/A	Originally Approved By: N/A
--------------------------------	-----------------------------

Recent Date of Approval: September 2012	Approved By: Renal Guideline Committee
--	--

Date Effective From September 2012	Superseded Documents
---------------------------------------	----------------------

Review Date: September 2014

Transplant, Urology and Nephrology Directorate

CONTENTS	PAGE NO
Section 1	3
1.0 Introduction	
1.1 Aim/purpose of the guideline	
1.2 Scope of guidelines	
Section 2	4
2.0 Definition	
2.1 Roles and responsibilities	
2.2 Principles	
Section 3	5
3.0 Inclusion Criteria	
3.1 Site Preparation	
3.2 Patient equipment	
3.3 Patient Education	
3.4 Ongoing Evaluation	
3.5 The Health care Provider	
Section 4	9
4.0 Reference	
4.1 Appendices	

Transplant, Urology and Nephrology Directorate

Section 1

1.0 Introduction

The Health Service Executive has recommended that the implementation of the Home Haemodialysis Programme be permanently established in Beaumont Hospital following the initial pilot programme that was set up in 2009. All documents outlined in the appendices of this policy document have been developed from the pilot programme.

All nurses working in Beaumont Hospital and caring for Home Haemodialysis patients will follow this policy.

Aim/Purpose of the Guidelines

These guidelines inform all staff working in the home therapy department on how to set up a patient at home on treatment. This should improve the patient's quality of life and reduce complications. This document is based on the best available evidence and has been developed to optimise patient care and to standardise Home Haemodialysis nursing practice.

1.2 Scope of Guidelines

These guidelines apply to all staff working within the TUN directorate in Beaumont Hospital who is involved in the care of patients who are on home dialysis treatment.

Transplant, Urology and Nephrology Directorate

Section 2

1.0 Definitions

Haemodialysis therapy for kidney failure is the process by which fluid and solutes are removed from or added to the patient's blood outside the body. During this process, blood from the patient is continuously circulated through a haemodialyser containing a semi permeable membrane and returned to the patient (Cheung 2009).

2.1 Roles and Responsibilities

- It is the responsibility of the lead nurse to provide education to nurses working in the Home Therapies Unit and to maintain an up to date list of nurses who have done so. (Appendix 1)
- It is the responsibility of the lead nurse to provide education to nurses working in the acute and maintenance haemodialysis units on the procedure to follow when issues arise out of hours with patients on Home Haemodialysis (Appendix 2).
- It is the responsibility of the nurse to make a judgement as to whether he/she is competent to carry out Home Haemodialysis. The nurse should review his/her practice on a regular basis, thereby maintaining a high level of skill through regular practice. Each nurse is accountable for ensuring that his/her skill and competence is maintained (An Bord Altranais).
- It is the responsibility of the home therapies nurse to ensure she/he adheres to the renal policies that are relevant to the care of a haemodialysis patient i.e. Haemodialysis treatment guidelines, anticoagulation guidelines, the management of the Avf/CVC etc.

2.2 Principles

The Department of Nephrology, Dialysis and Transplantation has a responsibility to ensure hospital guidelines are developed where appropriate and implemented effectively. It is intended as a guideline towards best practice for all members of the multidisciplinary team involving the care of home haemodialysis patients.

Transplant, Urology and Nephrology Directorate

Section 3

3.0 Inclusion Criteria for Patient Home Haemodialysis

Home Haemodialysis should be an option available to all patients requiring renal replacement therapy. Prior to being accepted onto the programme the following criteria and processes need to be taken into consideration:

- The patient should be referred by the Consultant Nephrologist to the Home Therapies nurse.
- The patient must have a stable medical condition and be referred by their consultant nephrologist.
- The patient should have a predicted long wait on haemodialysis prior to kidney transplantation by virtue of underlying disease or degree of sensitisation.
- The patient should have sufficient insight into disease to be able to independently undertake rigours of home therapy.
- The patient should have an excellent compliance with prescribed therapy.
- The patient should have a stable home environment with adequate water, power and space in their house.
- Patients must be settled in their home with no plans of moving house.
- Patients must be confident and competent in self-needling their arteriovenous fistula/graft.
- Patients who have a CVC maybe considered based on their access history.
- Patients must be motivated to accept responsibility for their care.
- Patient's will be asked to sign a consent undertaking to comply with their prescribed therapy at home (appendix 3)

The Home Therapies nurse must complete the Patient Assessment Form (Appendix 4)

3.1 Site Preparation

- The Home Therapies nurse and the company technician should carry out a preliminary assessment of the home for Home Haemodialysis. The Renal Home Therapies nurse must complete the House Assessment form (Appendix 5)

Transplant, Urology and Nephrology Directorate

- The technician should assess technical issues such as water, electrics and plumbing as a room conversion will be necessary. The company technician should take water samples on this visit.
- The patient should be advised to complete a priority support requirements application to their electricity supplier.

3.2 Equipment for the Home

The home therapies nurse must submit an application for funding approval for Home Haemodialysis treatment to the HSE.

The Renal Home Therapies nurse must liaise with the home dialysis company to provide the following:

- Chair
- Bed table
- Centrifuge
- Home Haemodialysis machine
- Reverse Osmosis water filtering appliance
- Water softener if applicable

The Renal Home Therapies nurse must submit an Order Form and must complete the first order for consumables to the company, which includes the following:

- Blood lines
- Dialysers
- Bicarbonate cartridges
- Dialysis concentrate
- NAACL 0.9% infusion solution
- Intravenous administration sets
- Fistula needles, gauze, syringes, needles, tape and dressings for the exit site of the central venous catheters if in use.
- On and off packs
- The patient submits subsequent orders as required.

Transplant, Urology and Nephrology Directorate

3.3 Patient Education

The Renal Home Therapies nurse must train the patient using the Home Haemodialysis Education booklet (Appendix 6). The patient must be assessed as competent to undertake Home Haemodialysis safely and effectively using the Home Haemodialysis Competency document (Appendix 7).

The duration of Home Haemodialysis training will vary depending on the patient's needs and the frequency of dialysis. Training should take 5 - 6 weeks if training 3 times per week and 2 - 3 weeks if training 5 days per week.

The patient will be trained by the Home Therapies nurses in the use of a Home Haemodialysis machine. The training will take place in the chronic dialysis unit and the patient will attend as an outpatient. The dialysis machine used in training must be a hospital-based replica of the machine that the patient will use at home. The final week of training must be performed in the patient's home. The Home Therapies nurse must observe and assess the patient undertaking each Home Haemodialysis treatment on that week.

When patients have positive blood borne virus results, the following procedure must be adhered to:

- The patient must train on his or her own Home Haemodialysis machine in the hospital setting.
- The Renal Home Therapies nurse must liaise with the company to deliver the patient's Home Haemodialysis machine to the hospital.
- This machine must be isolated, for use only by the identified patient in the hospital setting.
- The Renal Home Therapies nurse must liaise with the company to deliver the patient's machine to the patient's home on completion of training
- When home dialysis patient attends the hospital for dialysis all recent virology results should be reviewed on pipe or contact NVRL. The patient should also be questioned on whether they had dialysis abroad in the last 3 months.

Transplant, Urology and Nephrology Directorate

3.4 Ongoing evaluation of each patient

Monthly home visits for ongoing assessment of the patient undertaking Home Haemodialysis must be carried out. The duration between visits will be extended on an individual basis. The Home Haemodialysis – Evaluation and Review Form should be completed by the Home Therapies nurse in the home environment (Appendix 8).

Patients must keep a written record of their haemodialysis treatments on the Home Haemodialysis-Patient Flow Chart and should show this record to the consultant at their out patients appointment.

Patients should have monthly blood checks. The patient should be advised to post blood specimens to the Home Therapy Unit in a bloods specimen container provided by the Home Therapies nurse.

blood count should be greater than 8gm/dl if not they should dialysis in-centre.

The Home Therapies Nurse should organise outpatients appointments for patients to attend and should arrange a dietetic review to coincide with the out patients appointment and whenever deemed necessary.

The Home Haemodialysis–Treatment Parameters Form (Appendix 9) specifying individual patient parameters must be completed and kept in patients' files.

3.5 The Health Care Provider (HCP)

HCP should train the Home Therapies nursing staff on the correct use of the Home Haemodialysis machine.

HCP is responsible for the servicing and maintenance of all equipment both in the patients' home and in the hospital and is also responsible for responding to out of hour's machine technical support issues, queries/problems.

HCP is responsible for monitoring the quality of the water being used for haemodialysis in the patient's home and in the hospital. Frequency of water sampling and analysis must be performed as follows:

- Daily Chlorine test (performed by patient)
- Daily monitor of water hardness (only with use of softener by patient)
- TVC monthly
- Endotoxins- monthly
- Chemical analysis – 3 monthly

Copy of all water results must be provided to the renal technician.

HCP is responsible for disposal of all waste.

Transplant, Urology and Nephrology Directorate

Section 4

4.0 References

An Bord Altranais (2000a) Scope of Nursing and Midwifery Practice Framework. Dublin: An Bord Altranais.

An Bord Altranais (2000b) The Code of Professional Conduct for each Nurse and Midwife. Dublin: An Bord Altranais.

An Bord Altranais (2002) Recording Clinical Practice Guidance to Nurses and Midwives. Dublin: An Bord Altranais.

An Bord Altranais (2007) Guidance to Nurses and Midwives on Medication Management. Dublin: An Bord Altranais.

Beaumont Hospital (2012) Department of Nephrology and Renal Transplantation Guidelines sourced at www.beaumont.ie/index.jsp?p=358&n=515 on August 22ND 2012.

Cheung A.K. (2009) Hemodialysis and hemofiltration. In *Kidney Diseases*. 5th ed, (Greenberg A. Ed) Saunders Elsevier, Philadelphia, pp. 446-471. NICE Guidelines (2002) (Internet)

Transplant, Urology and Nephrology Directorate

4.1 Appendices

Appendix 1 Home Haemodialysis - Competency Assessment Record for Nursing Staff

Appendix 2 Home Haemodialysis – out of hours

Appendix 3 Home Haemodialysis – Patient consent

Appendix 4 Home Haemodialysis – Patient Assessment

Appendix 5 Home Haemodialysis – House Assessment

Appendix 6 Home Haemodialysis- Education Booklet

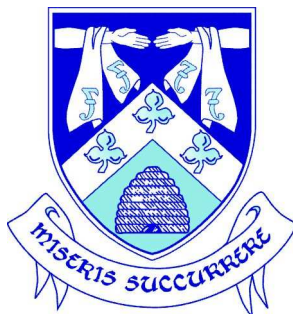
Appendix 7 Home Haemodialysis – Patient Competency Booklet

Appendix 8 Home Haemodialysis – Evaluation and Review

Appendix 9 Home Haemodialysis – Treatment Parameters

Transplant, Urology and Nephrology Directorate

Appendix 1



HOME HAEMODIALYSIS (HHD)

LEAD NURSE HHD THEORY COMPETENCY CHECKLIST

DATE	DISCUSSED	UNDERSTANDS	COMPETENT
Referral			
House Assessment			
Approval			
Ordering supplies for training			
Pre Programme Documentation			
Care Plan			
Patient Education Book			
Competency Book and Rationale			
Authorisation of House Conversion			
Ordering home supplies and equipment			
Home Visit			
Validation of invoices			
Virology			
SIGNED LEAD NURSE			
SIGNED Beaumont Hospital LEAD NURSE			

Transplant, Urology and Nephrology Directorate

Appendix 2

Calls Taken after Hours - The home haemodialysis service.

When there are no home therapies staffs available, the Home HD Dect phone should be forwarded to St Martins Room 2, Monday to Thursday and to St Peters Acute unit from Friday to Monday. The senior dialysis nurse on duty should deal with these calls where possible. Alternatively the patient should ring switch and contact the Renal Register on call if they cannot contact the dialysis team. The Patient may contact the unit out of hours for the following reasons.

The specific advice given is listed as follows:

Patient access is not working- check when patient last had dialysis and contact renal register on call to arrange a plan of action.

Patient is having symptoms of infection, feeling unwell or has any temperature. The Dialysis Nurse should advise the patient to go to the emergency dept for treatment and inform the renal register on call

Patient has no water supply to do their dialysis – The Senior Dialysis nurse on duty should ask when patient last had dialysis and arrange a dialysis slot if deemed necessary.

Patient is weak and hypotensive on dialysis, despite having administered saline. The senior Dialysis Nurse on duty should advise the patient to discontinue treatment and call an ambulance to go to their nearest Emergency Dept for immediate attention.

Patient AVF/Gortex graft is bleeding excessively despite having applied pressure. The Senior Dialysis Nurse on duty should advise to continue to apply pressure and ask a relative if available to take them to the nearest Emergency Dept or call an ambulance. If they are weak and to call an ambulance.

Patient's water has tested positive for chlorine –The Senior Nurse on duty advises the patient NOT to do their dialysis. The dialysis nurse will arrange a slot for dialysis and check full bloods.

Abnormal water reports phoned in from Baxter technician -.TVC>50c. (Bacteria count). The patient is not to dialyse until discussed with the home therapy's team. Contact the home therapies clinical nurse manager urgently. If they are not contactable phone Prof P. Conlon on his mobile and arrange a slot for dialysis if necessary.

Please inform the home therapy's staff the next morning on ext 8363 or 8152 of any phone calls received. For documentation purposes ----Patient medical chart can be obtained by contacting admissions. Nursing notes are kept in the Home therapies office. Contact security to open office out of hours. **DO NOT REMOVE NURSING NOTES FROM OFFICE.**

Transplant, Urology and Nephrology Directorate

Transplant, Urology and Nephrology Directorate

Appendix 3

Name:	Hospital No:	Date of Birth:
--------------	---------------------	-----------------------

Score for each attribute	Manual Dexterity	Co-morbidity	Communication	Access/ Stability	Previous Dialysis	Social Set-up
1	No problems	None	Good	Good access – stable	PD/minimal care HD	Live-in helper
2	Slight weakness	Slight	Some	Variable or inconsistent	Dependent PD/In-centre HD	Non live-in helper
3	Severe weakness	Severe	> 2 issues	Poor	No previous therapy	No helper
Patient Score						
Patient Total:			Grade:			

Less than 9	Grade 1	Ideal candidate
9 – 12	Grade 2	Possible candidate
Over 13	Grade 3	Currently unsuitable

Transplant, Urology and Nephrology Directorate



Appendix 4

BEAUMONT HOSPITAL

Home Haemodialysis Patient Referral

Referral by: _____ Consultant _____

Name of patient _____

Hospital No _____

Address _____

Telephone _____ Date of Birth _____

Reason for transfer to Home Haemodialysis _____

Planned Start Training Date _____

Medical History

Primary Renal Diagnosis _____

Other Medical Conditions _____

MRSA Screen _____

Virology Screen _____

Currently modality

Is the patient **Pre Dialysis** **Peritoneal dialysis** **Haemodialysis**

Dialysis centre _____

Transplant, Urology and Nephrology Directorate

Previous Dialysis History

Therapy Mode	Start Date	Time on modality	Known compliance issues eg. DNA, Blood results
CAPD			
APD			
Centre HD			
Transplant			

Previous HD experience

Type of Machine _____ Dialysis sessions _____

Needling involvement _____

Machine involvement _____

Access Details

	Right	Left	Radial	Brachial	Other	Date Formed
AV Fistula						
AV Graft						
	Permanent	Temporary	Right	Left	Other	Date Formed
Dialysis Catheter						

Has the patient dropped their blood pressure on dialysis in the last 2 weeks? **Yes** **No**

Details _____

How does the patient detect a drop in B/P _____

Any access problems in last month Yes No

Please specify _____

Transplant, Urology and Nephrology Directorate

Additional comments (include episodes such as clotted blood lines, cramping, or other dialysis-related problems)

Psychosocial Details

Married/Cohabiting Yes No Number of children _____

Ages of children _____

Details of possible Helper _____

Speaks English (Patient) Well Some None First Language _____

Helper Well Some None First Language _____

Does patient work Yes No

Type of job _____

Hours of work _____

Ability to take time off for training (approximately 4 - 6 weeks) Yes No

When will they normally dialyze at home? _____

Any pets/animals _____

Recreational activities/Hobbies _____

Car Driver Yes No Distance from referring unit _____ miles

Telephone company _____

Local Council _____

Does patient have a medical card? _____

Has a referral been made to Baxter Healthcare for domiciliary survey? Yes No

Has the patient been referred to the counsellor yes _____ No _____ Refused _____

Has the patient any psychiatric history? _____

Comments

Transplant, Urology and Nephrology Directorate

Room conversion

Type of housing House - two story or bungalow or flat

Other (please specify) _____

	Council	Privately owned	Flat (Floor Level)	Leased / rented
Type of Housing (please tick)				

	Proposed dialysis room	Alternative No.1	Alternative No.2
Approx. size			

Completed by:

Name _____ Signature _____

Date _____

Transplant, Urology and Nephrology Directorate

Appendix 5



Attach addressograph here

INFORMED CONSENT FOR DIALYSIS WITH CONSENT FOR ADMINISTRATION OF BLOOD AND BLOOD PRODUCTS.

I, _____, authorise Beaumont Hospital Dialysis Services to provide treatment for End Stage Renal Disease (ESRD). I understand that I have developed kidney failure. With this condition, my kidneys do not function properly in removing impurities and fluid from my blood. I further understand that without renal replacement therapy my condition will worsen, perhaps leading to death. I understand this is not a cure for my kidney disease but is being offered as a substitute to carry out some of the functions that my kidneys are no longer able to perform.

I, understand the following treatment modality available at this facility as it has been described to me: **HOME HAEMODIALYSIS** – Home Haemodialysis is a life saving treatment which involves the passage of the patient's blood from his/her circulatory system through an artificial kidney, which removes impurities and excess fluid from the blood. This mode of therapy is performed by myself and at my home in a modified room fit for purpose. I will carry out the therapy 3 times per week, based on the patient's condition and the physician's prescription and as instructed by my home care team. I understand that in order for haemodialysis treatment to be carried out, some form of vascular access must be achieved. This will be in the form of (i) a catheter being inserted into a vein in the patients neck or groin or (ii) a surgically created Arteriovenous Fistula in the patients arm.

I understand that in order for me to carry out this procedure I will initially need intensive training in the hospital given by the home haemodialysis training team. I understand that I am required to attend all training sessions and will not carry out the treatment at home until both my physician and home care team deem that I am competent to do so.

I also understand that there are certain risks and consequences associated with haemodialysis as with any other medical procedure. Possible complications include but are not limited to the following: (a) Vascular access problems such as infection, clotting, or bleeding; (b) while in hospital Blood borne diseases such as Hepatitis, AIDS, or other infections such as MRSA;(c) Potential for air embolism in which excessive air enters the blood via the extracorporeal system; (d) Possibility of irregular heart beats, headaches, change in blood pressure, and seizures resulting from chemical and fluid shifts and imbalance during dialysis (e) Machine malfunction and (f) interruptions to water supply of malfunction of the R/O unit.

I understand that my blood will be tested for Hepatitis B, C and HIV before starting Haemodialysis and on a regular basis thereafter. The risk is reduced by being on Home Haemodialysis as opposed to the Hospital Haemodialysis Programme.

I understand that I may need to return to the Hospital Haemodialysis Programme if my physician advises this.

BLOOD ADMINISTRATION

I understand that there is a risk of blood loss and anaemia in patients with ESRD on maintenance dialysis. I have been informed that despite careful screening performed in accordance with applicable regulations, there are rare instances of life-threatening infection resulting from blood and

Transplant, Urology and Nephrology Directorate

blood product administration. I have been informed that the expected benefits of blood administration may include minimising shock, brain or other organ damage, and limiting blood loss. I understand that blood or blood products will only be administered when medically indicated. I understand I may have to attend the hospital for blood transfusions as opposed to having the blood or blood products at home on dialysis.

I agree to comply with the treatment regime precisely as it is given to me by the haemodialysis team. I also agree to report in a timely manner any deterioration in my health or unexpected events that may occur during dialysis.

I hereby consent / do not consent to Home Haemodialysis

I also consent / do not consent to the administration of blood or blood products, depending on my specific needs.

I understand that I am required to carry out my home haemodialysis treatments /exchanges on my designated days and that failure to do so may result in life threatening complications. I understand that failure to comply with my treatment could result in my inclusion on the Kidney Transplant Pool being reviewed. - In having to come off Home Haemodialysis programme and revert to the Hospital Haemodialysis Programme.

Equally, I expect my caregivers to observe my rights and responsibilities as a patient.

This consent will be valid for as long as I continue to require dialysis.

Patient / Next of Kin*

Date

Signature of Physician

Date

Signature of Witness

Date

* In the event that a patient is unable to give consent, the patient's Next of Kin may sign here to indicate that the need for dialysis has been explained to them.

Transplant, Urology and Nephrology Directorate

Appendix 6



Home Haemodialysis Education Booklet Beaumont Hospital

Date Sept 2012
Review Date: Sept2014

Transplant, Urology and Nephrology Directorate

Contents:

Introduction	3
Hand washing	4
Arterio Venous Fistula	5
Nikkiso Training guide	7
Exit site care	16
Blood sampling	17
Administration of IV iron sucrose	19
Needle sucking	20
Needle blow	21
Re-circulating	23
Alarms	24
Fluid balance	28
Disposal of waste	31
Needle stick injury	29
Home Visits	32
Ordering supplies	33
Out Patient clinics	35
Important Contact numbers	37
Flow sheet	38

Transplant, Urology and Nephrology Directorate

Introduction

Normal kidney function:

- Filtering the blood to remove excess waste and water
- Producing the hormone erythropoietin to prevent anaemia
- Keeping the bones strong by balancing calcium and phosphate
- Keeping acid and alkaline levels balanced in the blood
- Controlling blood pressure

What happens when the kidneys fail?

- There is no cure, so kidney function needs to be replaced by dialysis or transplantation
- Dialysis is not as effective as working kidneys but enables many people to live a long and full life

Principles of haemodialysis

- Each dialyser contains a semi-permeable membrane. The membrane has tiny holes so that the excess fluid and wastes can be removed.
- Connected to the dialysis machine is a container of solution known as the Dialysate or Concentrate. The Dialysate contains small amounts of substances normally present in the blood
- The blood flows through the semi-permeable membrane and the Dialysate flows around the outside of the semi-permeable membrane.
- Toxic waste and excess fluids will move from the blood across the membrane into the Dialysate and will be removed into a drain at the back of the dialysis machine.

Transplant, Urology and Nephrology Directorate

HANDWASHING.

1. Wash hands vigorously - paying particular attention to fingers and nails.
2. Remove all jewellery and watch.
3. Wet hands with running water.
4. Apply soap.
5. Thoroughly distribute over hands.
6. Rub Palm to Palm - 5 times
7. Right palm over back of left hand and vice versa - 5 times
8. Palm to palm fingers interlaced - 5 times
9. Backs of fingertips with opposing palms - 5 times
10. Rotational rubbing of right thumb clasped in left palm and repeat on the other hand. - 5 times each
11. Rotational rubbing of each wrist. - 5 times each
12. Rubbing of both arms up to elbows. - 5 times
13. Rinse and dry hands and forearms thoroughly

Transplant, Urology and Nephrology Directorate

AV Fistula

How can I look after my fistula?

- Keep it clean
- Don't have blood taken from that arm
- Don't take blood pressure on that arm
- Keep it warm in cold weather
- Check daily for 'buzz' and any signs of infection
- Do not carry heavy items with that arm

Avoid overstretching with that arm

- Inform the unit immediately if you have any concerns.

ASSESSING THE FISTULA:

- ❖ Feel for the Thrill (buzzing sensation)
- ❖ Observation –look for signs of
 - Redness
 - Swelling
 - Bruising

If any of the above is present you must contact the unit immediately.

Transplant, Urology and Nephrology Directorate

Preparing your fistula for Dialysis

- Wash your fistula with anti-bacterial soap and water and pat dry
- If Using Emla cream it should be applied to the needle sites and covered with an opsite dressing 30-40 minutes prior to dialysis.
- After removing the opsite You must wash your hands
- Then wash fistula with anti-bacterial soap and water.
- Clean each fistula site with a Clinell wipe using a circular rubbing motion and allow to air dry.

Needle site selection

- It is the direction of the blood flow that determines the needle placement. This is why the venous needle must always point upwards (blue to the sky)
- The arterial needle, on the other hand, may point in either direction.

Transplant, Urology and Nephrology Directorate

Nikkiso HHD Machine

Starting the machine and priming

1. Turn on the R/O
2. Wash hands and clean down table with detergent and azowipes
3. Turn on the dialysis machine .Gather the supplies and open on to the packets
- 4. Apply hand gel**
5. Attach altracart and insert concentrate probe
6. Attach dialyser (blue side up) and hang 1 litre bag and 500ml bag of Normal saline
7. Start with the arterial line first and take the heparin line (small thin line) in your right hand, load the blood pump and continue to line the machine as showed in training
8. Take venous line and line the machine as demonstrated in your training
- 9. Apply hand gel.**
10. Connect the 500mls saline bag to the arterial chamber connector having primed the iv administer set
11. Connect the spike connector provided to red arterial line then spike the 1000ml normal saline
12. Press 'Prime Art' key to begin priming
13. When fluid is seen in venous chamber press LAP key and raises the levels in the arterial chamber, dialyser inlet chamber and venous chamber.
14. Weigh yourself and record
15. Gather your fistula/cvc supplies

Transplant, Urology and Nephrology Directorate

16. Wait for the onscreen prompt 'Attach Dialyser Couplings'. Attach dialyser couplings (red to red and blue to blue) and press fill dialyser button. **(you should have already primed the blood compartment of the dialyser).**
17. Turn dialyser red side up.
18. Please take your blood pressure. (BPM key right hand corner AUTO button). This will now take your blood pressure every hour.
19. Press 'Treatment Data' button to set your prescribed dialysis treatment
20. Press 'Treatment Time Remaining'. Enter your dialysis treatment time and press 'Set'
21. Press 'UF Volume' button. Enter amount of fluid to be removed and press 'Set'
22. Exit this screen by pressing X at the top right hand corner of the screen

Transplant, Urology and Nephrology Directorate

Starting Dialysis Treatment (Avf)

Having needled your AVF:

1. When the BM test is complete, “Dialyzer rinse” key is green, “circ” key is orange.

2. Clamp red and blue lines, Attach arterial line to bottom arterial fistula needle and venous line to top venous fistula needle (blue to the sky) and then unclamp.

Press “connect” button. The screen background colour will now be blue.

3. Press blood pump button to start blood flow (100mls/min)

4. When blood reaches the venous chamber the blood pump will stop. Please press ‘Start treatment’ key to commence treatment. The screen will now be green.

5. Administer the Innohep as per unit protocol

6. Gradually increase the blood flow to the desired rate

7. Secure blood lines safely

8. Check all treatment parameters including blood flow, UF Goal and treatment time and blood pressure. Ensure arterial, venous and DIB (dialyser inlet pressure) are within your normal limits.

Transplant, Urology and Nephrology Directorate

Discontinuing Dialysis Treatment (avf)

In preparation (5-10 mins prior to completion of your treatment):

- Disconnect saline line and attach connector.
 - Prepare plasters, gauze and clamps.
1. A melody will indicate that treatment is completed. **Apply hand gel**
 2. Press and hold the disconnect key until the screen will be blue. The blood pump will stop
 3. Clamp the 'red' (arterial) fistula needle and the 'red' arterial blood line
 4. Disconnect the 'red' arterial line from the fistula needle and attach to the rescue /wash back saline connector (A line to the saline).
 5. Open roller clamp and arterial clamp.
 6. Start the blood pump and wash back at a speed of 100ml/min until the blood line becomes light in colour
 7. Stop the pump and close both venous needle clamp and venous blood line clamp
 8. Disconnect 'venous needle' line and attach to saline port on machine
 9. Remove needles and dispose of as directed by nursing staff
 10. Record treatment information:
 - Blood pressure and pulse
 - UF volume, Weight and Kt/v

Transplant, Urology and Nephrology Directorate

Starting Dialysis Treatment (cvc)

Hand Hygiene:

- Hand Hygiene is the single most important procedure in the prevention of catheter associated or related infections.
- Tego bungs must be changed weekly

Using the CVC for haemodialysis

- Decontaminate hands. Wash hands with antibacterial soap and then alcohol gel.
- Remove gauze from catheter.
- Clean your trolley as instructed. Open a dressing pack; add the Bd 10ml saline syringes x2, Clinell wipes x 6 and 10mls syringes x2 to it using a non touch technique.
- Decontaminate hands with alcohol hand rub and apply sterile gloves.
- Rub one clinell wipe around each catheter hub and clamp of catheter allowing them to dry for 30 seconds, discard wipes and place catheter on the sterile drape. Clean with clinell wipe again.
- Clean each tego bung separately with a clinell wipe allow to dry for 30sec.
- Insert a 10ml syringe into arterial port and remove 5mls of blood from the lumen and discard
- Flush lumen with 10mls of NACL, aspirate blood to check patency of lumen.
- Repeat last three steps for the venous lumen.

Transplant, Urology and Nephrology Directorate

- Using sterile gauze disconnect the arterial line from the priming bag of saline and attach to the lumen being used as the arterial port. Discard gauze. All the time using a non touch technique.
- Use sterile gauze to disconnect the venous line from the priming bag of saline and attach to the lumen being used as the venous port. Discard gauze
- Open the clamps and start the blood pump to commence dialysis.
- Secure blood lines to patient's clothes and wrap CVC connectors with gauze & tape.
- Discard all items as per hospital policy.

Transplant, Urology and Nephrology Directorate

Disconnecting the CVC from haemodialysis

- Decontaminate hands using alcohol gel
- Remove gauze from catheter and place clinell wipes around both hubs of catheter.
- Prepare trolley for disconnecting the CVC. Open the dressing pack add 2mls syringes x 2, 10mls Bd saline syringes x 2, Clinell wipes x 4/6, needle x 2, and duralock or heparin. All the time use a non touch technique.
- Decontaminate hands and apply sterile gloves.
- Draw up Duralock or heparin as instructed.
- Place sterile drape under dialysis catheter and lines at the same time you are removing the clinell wipes and allow to dry for 30 seconds.
- Stop blood pump using sterile gauze.
- Clamp arterial lines (HD line and CVC line)
- Gloves are no longer sterile.
- Disconnect arterial HD line from CVC line and attach the 10mls of NACL to CVC line using a non touch technique, flush CVC line.
- Attach arterial HD line to the kimmel connector with the saline drip attached. Open clamps and start blood pump with sterile gauze and commence wash back procedure.
- Stop blood pump using sterile gauze and clamp venous clamps.
- Disconnect venous HD line from the CVC line and attach. 10ml syringe of NACL using a non touch technique, flush CVC port.
- Remove gloves and decontaminate hands.
- Apply sterile gloves.
- Treat each lumen separately.

Transplant, Urology and Nephrology Directorate

- Remove the syringe attached to the arterial lumen, clean the outer part of the catheter hub with the clinell wipe, allow to air dry.
- Instill the required amount of duralock into the lumen. Repeat this for the venous lumen.
- Cover CVC connectors with sterile gauze and tape.

Transplant, Urology and Nephrology Directorate

After Dialysis – Disinfection and Cleaning

The machine must be disinfected after each dialysis treatment.

1. Remove blue coupling from dialyser and place it onto the machine and open the air detect box. The screen will now be red, disinfection mode. The dialyser and the bicarbonate will drain.
2. Remove the red coupling from the dialyser and place it onto the machine.
3. Strip the machine and dispose of all equipment into the yellow bin.
4. Disconnect the acid concentrate probe (red) from the fluid bag and connect it to the machine.
5. Disconnect the altracart from the machine and dispose it into your yellow bin.
6. Disinfect the machine. Programme 1 should be preselected. Hold the cleaning key until it lights up green. Disinfection is now taking place. The machine will automatically turn off once disinfection is completed.
7. Clean the machine, table and equipment as directed by nursing staff
8. Turn off the R/O when dialysis machine is off

Transplant, Urology and Nephrology Directorate

Exit Site Care

- The IV 3000◇ is the exit site dressing of preference, and an alternative should only be considered if incompatibility has been identified.
- Report any discomfort, pain, swelling, bleeding, redness or discharge from around your exit site.
- IV 3000◇ dressings should be changed at least once every 7 days or sooner if the integrity of the dressing is compromised i.e. wet, loosened or visibly soiled.
- Wash Hands
- Remove old dressing (N.B. Scissors should not be used at or near the exit site to remove dressing material
- Alcohol rub hands and apply sterile gloves
- Use sterile gauze to hold the catheter aloft.
- Using Clinell, cleanse around the exit site in one direction.
- Allow the chlorhexidine/alcohol to dry
- Apply dressing as shown.
- Remove gloves and discard.

If your exit site has any of the following redness, pain, or discharge please contact your home therapies nurse.

Transplant, Urology and Nephrology Directorate

BLOOD SAMPLING (AVF)

Requirements:

Adapter

Appropriately labelled bottles

You will need to take care however, as the adapter does not have screw threads to lock it in place, so there is a risk that the adapter may inadvertently fall off causing blood loss.

Preparation & Procedure

1. Cleanse hands.
2. Reduce the blood pump speed to 100 ml/min for 1 min prior to taking the blood sample
3. Stop the blood pump
4. Ensure clamp on arterial needle is closed.
5. Open adapter from packaging onto sterile field and attach to the arterial needle.
6. Prepare blood bottles have suction pulled.
7. Whilst securely holding adapter, insert into centre of **red** port. Take care not to touch either needle or sampling port with hands.
8. Attach the blood bottle via the twist onto the adaptor.
9. The bottle will draw in the exact quantity of blood.
Once the bottle is filled **close clamp on needle.**
10. Remove the bottle by twisting it off, **taking care to ensure that the adaptor and needle do not come apart.**
11. Fill other bottles in the same manner as above **Close clamp on needle between each bottle.**
12. When all bottles full, Close clamp on arterial needle
13. Remove adapter from the needle.

Transplant, Urology and Nephrology Directorate

14. Attach syringe with saline and flush needle.

15. Discard adapter into sharps box.

Gel tubes must be kept in the upright position for a minimum 20 minutes before being until placed in the centrifuge.

**BLOODS MUST BE SENT IN TO THE HOME THERAPIES TEAM
MONTHLY USING THE CONTAINERS AND ENVELOPES
PROVIDED.**

BLOODS MUST BE CLOSED AND SECURE.

Please enclose the following data:

Pre and post weight for that session

Duration of session

Blood flow rate

Total UF

Transplant, Urology and Nephrology Directorate

Guideline for Administration of Intravenous Iron Sucrose

(Venofer) During Dialysis:

- Venofer 100mg should only be administered by the intravenous route by slow injection over 5 minutes.
- Slow intravenous Venofer injection may be administered during the last hour of the haemodialysis session into the blue port or venous chamber post the dialyzer
- Prepare Venofer - draw up via needle and **luer** lock syringe at the beginning of dialysis.
- Prepare a pre-filled saline syringe.
- Towards the end of dialysis prepare to administer Venofer
- Take blood pressure and record
- Connect Venofer containing syringe and administer 1ml
- Wait 1 minute
- Push 1 ml
- Wait 1 min
- Continue as above until complete.
- Take blood pressure and record
- Clamp line and remove syringe discard into sharps bin.
- Attach a syringe with saline and give flush slowly as above.

Transplant, Urology and Nephrology Directorate

Needle Sucking (Not Feeding)

If this occurs, you may notice the following:

- machine alarms
- large amounts of air or foam within bloodlines

If you suspect needle sucking:

- STOP pump
- Clamp arterial needle and arterial bloodline clamps (2 clamps)
- Disconnect arterial line from needle and connect to wishbone connector
- Insert 10ml syringe with saline on end of needle
- Remove the tapes securing the needle and turn the needle slightly, checking the blood flow with the syringe
- If the flow is satisfactory, reconnect the needle to the arterial line
- Start blood pump at 100ml/min and bring pump speed up slowly
Observe arterial pressure.
- If adjusting the needle does not improve flow, carry out the procedure for BLOWN NEEDLE

Transplant, Urology and Nephrology Directorate

Needle Blow

If this occurs, you may notice the following:

- A sharp pain in your arm
- Swelling in your arm around the venous needle site causes machine to alarm, this may be recognised by arterial or venous pressure alarm.

The above are caused by blood escaping into the tissues around the blood vessel, possibly as a result of the needle piercing the wall of the fistula.

If you suspect a needle blow

- STOP pump
- Close needle and bloodline clamps (4 clamps)
- Disconnect arterial line from needle and connect to connector, attach syringe to needle.
- Disconnect venous line from venous needle and connect to the other end of the connector, attach a syringe to needle.
- Open red and blue bloodline clamps (2 clamps)
- Start blood pump – set speeds 100ml/min
- Open 2 Saline clamps (roller clamp and white saline line)
- Touch MIN. UF button on bottom, right-hand corner of screen
- Withdraw from problem needle if no flow reposition needle.
- Withdraw from needle again to check flow.
- **If possible, leave blown needle in place until the end of dialysis as the site may bleed. Leave syringe attached.**

Then wash back

- Close saline roller clamp and close clamp at saline access port

Transplant, Urology and Nephrology Directorate

- STOP pump
- Close red and blue bloodline clamps
- Reconnect venous bloodlines to the good remaining needle to wash back, Discard syringe
- Attach saline to arterial bloodline via connector.
- Open clamps on fistula needle and bloodlines (3 clamps)
- Start blood pump to wash back.

If necessary, you can apply ice to the swollen area of the needle blow.

Transplant, Urology and Nephrology Directorate

RE-Circulation

- Press disconnect
- Close needle and bloodline clamps (4 clamps)
- Disconnect arterial line from needle and connect to straight connector. Attach saline syringe to needle
- Disconnect venous line from venous needle and connect to the other end of the connector. Attach saline syringe to needle
- Open red and blue bloodline clamps (2 clamps)
- Open roller clamp (saline line)
- Start blood pump – 100ml/min
- Flush needle with SALINE to maintain patency
- **STOP** pump
- Close both saline clamps (roller clamp and white machine clamp)
- Close red and blue bloodline clamps and reconnect bloodlines to needles, attach syringes to end of connector
- Discard connector into sharps bin
- Open clamps on fistula needles and bloodlines (4 clamps)
- Press start treatment key.
- Start blood pump, bringing speeds up slowly. Observe venous and arterial pressures.

Transplant, Urology and Nephrology Directorate

Alarms:

Attention button alerts you to a problem:

Continuous alarm → This alerts you to a problem that you need to rectify

Intermittent alarm → This is a prompt rather than an alarm

1. Hypotension (low B/P) on dialysis:

Causes:

- removing too much fluid causing B/P to drop

Symptoms:

- feeling faint, dizzy, nauseous, hot

Actions:

- Pres "Minimum UF" key to stop fluid removal
- check B/P
- give saline until feeling better
- re-assess target weight

2. Air detector alarm

This is a potentially serious alarm as air in the blood can be dangerous

Common causes:

- blood lines not connected securely
- Dialyser not primed correctly

Actions:

- check blood lines for evidence of air bubbles
- if no visible air re-set air detector
- check all connections are secure
- if air is visible you may need to 're-circulate' (you may need help to do this).
-

3. Arterial & Venous pressure alarms

Common causes:

- needle needs re-positioning
- blood line occluded (blocked/kinked)
- clotting
- fistula/catheter problem

Transplant, Urology and Nephrology Directorate

Actions:

- reduce blood pump speed
- check needles and re-position if necessary
- check for occlusion in blood lines
- check lines and dialyser for signs of clotting
- rectify problem and slowly increase blood pump

4. TMP alarm

Causes:

- high – the machine is removing too much fluid or the circuit is clotting
- low – the machine is removing too little fluid

Actions:

- check the TMP limits
- check the UF rate
- observe the circuit for clotting

5. Temperature alarm

Causes:

- machine problems

Actions:

- Call the technician

6. Conductivity alarm

Common causes:

- machine not picking up the correct amount of dialysis fluid/bicarbonate, often caused by loose connections

Action:

- check connections
- check dialysis fluid/bicarbonate containers are not low/empty

7. Technical Alarms – Coded Alarms – See booklet

Causes:

- Machine problem.

Actions:

- call technician

Transplant, Urology and Nephrology Directorate

8. Ph Alarm

Causes:

- Machine problem

Actions

- Call technician

9. Blood leak

Causes:

- ruptured membrane in dialyser

Actions:

- discontinue dialysis – do not ‘wash back’

10. Water failure “Water pressure alarm lower”

Causes:

- insufficient water supply to the machine

Actions:

- check water supply is on
- check water inlet tube for kinks
- call technician/discontinue dialysis

11. Power failure “Under battery operation (auto)”

Causes:

- power failure to your house
- power point turned off accidentally

Actions:

- check above causes
- if power does not return, ‘wash back’ & discontinue dialysis

The machine has 20 minutes backup power so you can wash back safely using the machine

If the power fails to the house both the water alarm and the power alarm will sound together. Check the screen message board by using the ‘?’ key on the top row to identify all alarms.

Transplant, Urology and Nephrology Directorate

12. Clotted Circuit, Needle, Dialyser

Causes:

- insufficient Tinzaparin (Innohep)

Action:

- if clots are visible you may need to change the circuit, you will be taught how to do this

13. Prolonged bleeding from fistula:

Causes:

- too much Tinzaparin used
- clotting/fistula problem

Actions:

- apply pressure until bleeding stops
- if still bleeding after 1 hour contact unit for advice
- may need reduction in tinzaparin dose

Transplant, Urology and Nephrology Directorate

Fluid Balance

Your fluid intake will vary according to your urinary output.

The Doctor and HD team will advise you on how much fluids you can have per day.

Remember fluid is also contained in a lot of foods (soup, ice-cream, jelly). *1kg = 1 litre of fluid*

You Must Weigh and record your weight **pre and post dialysis.**

Weight: You must be able to accurately weigh yourself Understand the concept of target/dry weight
Understands relevance of pre dialysis weight
Understand how to calculate Ultrafiltration (UF) Volume:
You must be able to programme the correct UF volume.

Blood pressure:

You must be able to accurately record B/P unaided
You must be aware of your normal B/P
You must be aware of causes of high and low B/P

Pulse:

You must be able to accurately record pulse and be aware of his/her normal pulse.

You must be able to recognise the signs and symptoms of fluid overload and dehydration and take the necessary action

Transplant, Urology and Nephrology Directorate

Overload

YOUR BODY BECOMES **FLUID OVERLOADED** WHEN YOU HAVE TOO MUCH FLUID IN THE BLOODSTREAM.

SIGNS AND SYMPTOMS:

1. A sudden increase in weight
2. Swollen ankles (oedema)
3. Shortness of breath.
4. Puffiness around the eyes.

ACTION

1. Contact HD team to inform of changes
2. Decrease fluid intake
3. Increase Ultra filtration if able to tolerate it

Transplant, Urology and Nephrology Directorate

DEHYDRATION.

YOUR BODY BECOMES **DEHYDRATED** OR DRY WHEN YOU HAVE REDUCED FLUID IN THE BLOOD STREAM.

SIGNS AND SYMPTOMS.

1. Decrease in weight
2. Feeling faint or dizzy
3. You may feel nauseated.
4. Low blood pressure

ACTION

1. Give normal saline if on dialysis
2. Stop Ultrafiltration for 10mins by pressing the Min UF button.
3. Recline chair and reduce your UF goal

Contact HD team to inform of changes

Transplant, Urology and Nephrology Directorate

HOW DO I DISPOSE OF MY WASTE?

Disposal of Plastic: Empty plastic covering can be disposed of by packing them flat and placing them in your refuse collection or recycling bin.

Bags from priming: Empty down the toilet and dispose of in your refuse collection or recycling bin.

Once you have completed your dialysis:

Altracart: The altracart is drained by the machine then remove and place in the yellow bin.

Concentrate bag: Remove the connector and place in the sharps bin. The concentrate bag is placed in the yellow bin – if more than half full empty remaining fluid down the toilet, flush the toilet.

*Use a scissors to cut the bag and keep only for this purpose.

Lines and Dialyzer: Strip the lines from the machine and together with the dialyzer placed directly into the yellow bin.

*Clean up any spillage immediately.*Wash hands

Disposal of needles and syringes;

All your Needles and syringes used at home should be disposed of in a sharps container.

Wheelie Bins

Baxter do supply the waste bins 1 week pre - discharge to home via a waste management company. The waste management company will contact you to arrange and delivery and collection of the relevant bins.

IN THE EVENT OF A NEEDLE STICK INJURY

1. Encourage the area to bleed.
2. Wash under running water.
3. Apply a waterproof dressing.
4. For splashes of blood to conjunctiva (eyes) or mucous membranes - Irrigate with running water or normal saline solution.

Transplant, Urology and Nephrology Directorate

HOME VISITS.

A member of the home dialysis team will visit you at your home post discharge from hospital.

Aims and roles of the home visiting nurse:

- To reduce hospital visits and inpatient stays to a minimum.
- To reinforce the importance of hand washing.
- Continue and reinforce learning process.
- Encourage a return to previous or improved social status.
- Nurture a close link between home and hospital.
- Give moral support to patient and family.
- Establish home dialysis in newly discharged patients.
- Observe dialysis procedure at home, record keeping and answer any problems.
- Provide support for both family and patient.

Transplant, Urology and Nephrology Directorate

HOW DO I ORDER MY SUPPLIES

PHARMACY BEAUMONT

On attending the outpatient's clinic you will be supplied by Beaumont pharmacy with duralock.

BAXTER

When you go home, you shall receive a Baxter "home patient information pack" with your first order, which will explain the necessary details re: ordering and delivery.

It is important that you check your delivery before you sign for it.

Always hang your calendar up in your dialysis area and remember you must ring even if you do not require anything.

When ordering your supplies:

1. Ring Baxter Healthcare on Free phone no. 1800 644 644 and ask for customer services.
2. Count your current stock and order what you need e.g.
 - Concentrate - No of bags you need
 - Treatment packs- No of packs you need
 - On / off packs - No of packs you need.
3. Your delivery dates are also in the information pack.

It is essential that someone is available to allow the delivery person access to your storage area if you are unable to be home please contact Baxter and discuss an alternative plan.

If your prescription should change, it is important to inform customer service *as soon as possible*, so as you will not run short of supplies. It is always important to do a stock check and allow Baxter Healthcare at least seven days to deliver.

Transplant, Urology and Nephrology Directorate

Travel Club

If you are interested in travelling abroad on holidays it is important that you first discuss same with your dialysis team who will be able to advise you.

You will also have to inform Baxter and delivery re-arranged.



I do sympathize with you, sir, but I'm afraid it cannot be viewed as 'carry on' luggage.

IF YOU ARE UNWELL

Transplant, Urology and Nephrology Directorate

- You must contact the home therapies team if you feel unwell.
Eg: temperature above 37.5, Rigors (shakes) at any time especially when on the machine, redness at your fistula etc.
- After discussion with the medical team advice will be given
- If you are in need of hospital care, it is essential to contact your home therapies team.
- Transfer to Beaumont will be arranged if necessary

THE OUT - PATIENTS CLINIC.

The Out – patient’s clinic is situated on the third floor on Hamilton Ward.

At the clinic we will check:

- Your blood pressure.
- Review and discuss bloods.
- Check your fistula or CVC line.
- Check your current medications please bring your tablets with you or an up-to-date list.
- Discuss any problems you may have.
- Your dialysis records are reviewed.
- Record your KT/V

Transplant, Urology and Nephrology Directorate

UNDERSTANDING YOUR BLOOD RESULTS

Your bloods are affected by the following:

- What you eat
- The amount of dialysis you have
- How much urine you pass

MOST COMMON BLOOD TESTS:

UREA This is a waste product of protein breakdown normally excreted by the kidney. High levels of urea in the blood can make you feel nauseated and unwell.

CREATININE This is a waste product from muscle activity and is normally excreted by the kidney.

POTASSIUM High levels of potassium can affect the heart. Dialysis will remove high levels of potassium but you will also need to discuss a low potassium diet with your dietician.

PHOSPHATE High levels of phosphate can make you feel itchy and can also affect your bones. Your dietician will be able to advise you on your diet and you may also be prescribed tablets to take with your meals to control your serum phosphate level.

CALCIUM This can also affect your bones, dialysis and medication will help this.

HAEMOGLOBIN Red blood cells contain haemoglobin. When your kidneys are damaged you are unable to produce enough red blood cells therefore your haemoglobin will fall (anaemia). You may feel tired and lethargic. A regular injection of erythropoietin will prevent you getting anaemic. Your red blood cells carry iron so it is important to monitor iron levels and iron store levels. If your store level is low you may need IV iron, which we will show you how to self administer when on dialysis.

Transplant, Urology and Nephrology Directorate

IMPORTANT CONTACT NUMBERS:

Home haemodialysis direct line (24 hr cover) 01 8528363

Email Homedialysis@beaumont.ie

St. Martins room 2 01 8093341

01 8092757

St Peters Dialysis 01 8092723

PD TEAM 01 8528152

(Peritoneal Dialysis) 01 8093146

Pharmacy 01 8093000

Bleep 749

BAXTER FREEPHONE 1800644644

OUT of HOURS Technical support 087 9080846

Ms. Mary T Murphy 01 8092727

(Patient care co-ordinator) Bleep 754

Ms. Eileen McBrearty 01-8092727

(Patient care co-ordinator) Bleep 336

Ms. Margaret Hanna 01- 8093000

(Renal Nurse Counsellor) Bleep 334

Transplant, Urology and Nephrology Directorate

Beaumont Hospital Home Haemodialysis

Name:

Target Weight

START OF HHD:						
Date						
Start time						
Time						
UF Goal						
Pre BP						
Pre Pulse						
Pre Weight						
Weight Gain						
Pump Speed						
Arterial pressure						
Venous pressure						
MIDDLE SECTION:						
<i>Time</i>						
<i>BP</i>						
<i>Pulse</i>						
<i>Pump speed</i>						
<i>Venous Pressure</i>						
<i>Arterial Pressure</i>						
END OF HD:						
Post BP						
Post pulse						
Post Weight						
Vol.Dialysed						
Chlorine Test						

Transplant, Urology and Nephrology Directorate

Appendix 7



Home Haemodialysis Competency Booklet.

Name:

Hospital Number:

Dialysis Unit:

Transplant, Urology and Nephrology Directorate

Introduction

This booklet has been developed as a self-care education/training guide to assist you to learn how to safely and competently participate in your own haemodialysis care. Initially you will be taught how to undertake some of the simple tasks involved in dialysis. As your confidence increases you may wish to learn more about the whole process of dialysis.

Specialist haemodialysis nurses will do the teaching. This booklet will record your progress and will act as a guide as to what comes next. Yourself and your nurse should sign the competency section when you both feel that a level of competency has been achieved according to the definitions given.

Transplant, Urology and Nephrology Directorate

Example Page

Preparing for dialysis

<i>Competency</i>	Date 02.03.09	Date 04.03.09	Date 06.03.09	Date 08.03.09	Date 10.03.09
<i>Weight</i>	<i>O</i> (JB)	<i>P</i> (JB)	<i>P</i> (JB)	<i>P</i> (JB)	<i>C</i> (JB)
<i>Blood Pressure</i>	<i>O</i> (JB)	<i>P</i> (JB)	<i>P</i> (JB)	<i>P</i> (JB)	<i>C</i> (JB)
<i>Pulse</i>	<i>O</i> (JB)	<i>P</i> (JB)	<i>P</i> (JB)	<i>P</i> (JB)	

Key O = Observed P = Practiced C = Competent
D = Discussed U = Understands

In our opinion a level of competency had been achieved in this section

Nurse Signature

Print Name

Date

J.Bloggs (JB)

Joe Bloggs

10.03.09

Patient Signature

Print Name

Date

Transplant, Urology and Nephrology Directorate

Functions of the kidney and principles of dialysis

Preparing for dialysis

Preparing the dialysis machine

Programming the dialysis machine

Caring for your fistula

Caring for your Central Venous Catheter (CVC)

Starting dialysis

Stopping dialysis with a fistula

Stopping dialysis with a Central Venous Catheter (CVC)

After dialysis

Problem Solving

Administration of I.V. medication

Centrifuge Competency Form

Transplant, Urology and Nephrology Directorate

1. Functions of the kidney and principles of dialysis

<i>Topic</i>	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:
<i>Normal kidney function</i>												
<i>What happens when kidneys fail</i>												
<i>Principles of haemodialysis</i>												

In our opinion an adequate level of understanding had been achieved in this section

Nurse Signature

Print Name

Date

Patient Signature

Print Name

Date

Transplant, Urology and Nephrology Directorate

1. Discussion should include

Normal kidney function

- Filtering the blood to remove excess waste and water
- Producing the hormone erythropoietin to prevent anaemia
- Keeping the bones strong by balancing calcium and phosphate
- Keeping acid and alkaline levels balanced in the blood
- Controlling blood pressure

What happens when the kidneys fail?

- There is no cure, so kidney function needs to be replaced by dialysis or transplantation
- Dialysis is not as effective as working kidneys but enables many people to live a long and full life

Principles of haemodialysis

- Explain the blood circuit briefly mentioning heparin to stop the blood from clotting and the air detector to prevent air in blood. (These will be elaborated on later)
- Show/explain the water inlet and waste outlet
- Show/explain the dialyser (artificial kidney); bloodlines and blood pump, bicarbonate cartridge/dialysis fluid
- Blood is cleaned in the dialyser; blood flows through the semi-permeable membrane, with the dialysate flowing around the outside. The dialysate contains small amounts of substances normally present in the blood, the membrane has tiny hole so that the excess fluid and wastes can be removed. At no point do blood and dialysate come into contact with each other

Transplant, Urology and Nephrology Directorate

2. Preparing for dialysis

<i>Competency</i>	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:
<i>Weight</i>										
<i>Blood Pressure</i>										
<i>Pulse</i>										

Key *O = Observed* *P = Practiced* *C = Competent*

In our opinion a level of competency had been achieved in this section

Nurse Signature

Print Name

Date

Patient Signature

Print Name

Date

Transplant, Urology and Nephrology Directorate

2. Competency definitions

Weight: and	able to accurately weigh him/herself unaided to be aware of target weight
Blood pressure:	able to accurately record B/P unaided and to be aware of his/her normal B/P Aware of causes of high and low B/P Can recognise signs of fluid overload and dehydration Able to monitor B/P during dialysis as required and be aware of causes of low B/P
Pulse:	able to accurately record pulse and be aware of his/her normal pulse

Transplant, Urology and Nephrology Directorate

3. Preparing the dialysis machine

Competency	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:
<i>Start machine</i>										
<i>Switch on reverse osmosis unit</i>										
<i>Auto heat disinfect</i>										
<i>Collect equipment</i>										
<i>Collect concentrate</i>										
<i>Attach dialyser</i>										
<i>Attach arterial and venous blood lines</i>										
<i>Prime blood circuit</i>										
<i>Attach Bicart</i>										
<i>Attach dialyser fluid tubes(couplings) to dialyser</i>										

Key O = Observed P = Practiced C = Competent

In our opinion a level of competency had been achieved in this section

Nurse Signature

Print Name

Date

Patient Signature

Print Name

Date

Transplant, Urology and Nephrology Directorate

3. Competency definitions

Start machine:	able to switch on machine; programme
Selection of auto heat: understands	auto heat prior to treatment and the reason for doing this
Collect equipment:	aware of what equipment is needed and where to locate it
Connect concentrate:	aware of correct concentrate () and be able to connect safely and securely
Attach dialyser and securely	aware of correct dialyser () and be able to connect safely and securely
Attach arterial and venous blood lines	able to attach lines correctly and securely
Prime blood circuit	understands the reason for priming blood circuit prior to dialysis; able to do this correctly and raise levels in the chambers understands the route of the arterial and venous blood lines and the functions of compartments on the route
Attach bicart	able to attach safely and securely
Attach dialysis fluid tubes (couplings) to dialyser:	able to attach lines correctly and securely

Transplant, Urology and Nephrology Directorate

4. Programming the dialysis machine

<i>Competency</i>	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:
<i>Dialysis time</i>										
<i>Fluid loss/ultrafiltration</i>										
<i>Display panel: -treatment overview -display and setting</i>										

Key O = Observed P = Practiced C = Competent

In our opinion a level of competency had been achieved in this section

Nurse Signature

Print Name

Date

Patient Signature

Print Name

Date

Transplant, Urology and Nephrology Directorate

4. Competency definitions

Dialysis time: time	able to programme in correct dialysis
Fluid loss/ Ultrafiltration weight volume: ultrafiltration	understands concept of target/dry weight understands relevance of pre dialysis and B/P understands how to calculate (UF) volume able to programme correct UF volume
Display panel: set in	understands the display panel and able to the treatment buttons on the display panel each group
set display panel in	understands the display panel and able to the treatment buttons on the each group
alarms/	understands and able to correct any attentions in each group of buttons ▪ hygiene and therapy buttons ▪ treatment overview ▪ standby ▪ display and setting

Transplant, Urology and Nephrology Directorate

5. Caring for your fistula

<i>Competency</i>	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:
<i>Hand hygiene</i>										
<i>Prepare 'put on pack'</i>										
<i>Check fistula</i>										
<i>Clean fistula</i>										
<i>Assessing needle sites</i>										
<i>Apply local anaesthetic</i>										
<i>Insert needles</i>										
<i>Apply tapes</i>										
<i>Flush needles with saline</i>										

Key O = Observed P = Practiced C = Competent

In our opinion a level of competency had been achieved in this section

Nurse Signature

Print Name

Date

Patient Signature

Print Name

Date

Transplant, Urology and Nephrology Directorate

5. Competency definitions

Hand hygiene:	able to clean hands according to unit protocol
Prepare 'put on pack':	able to collect and set out correctly and hygienically
Check fistula:	able to clean fistula according to hospital protocol; understands importance of this in reducing infection risk
Assess needling sites:	understands how to assess best sites for insertion of needles (according to hospital protocol)
Apply local anaesthetic:	able to apply local anaesthetic according to unit protocol
Insert needles:	able to insert arterial and venous needles safely according to unit protocol
Apply tapes:	able to apply tapes to needles safely and securely according to unit protocol
Flush needles with Saline:	able to flush needles with saline and understand the reasons for doing this

Transplant, Urology and Nephrology Directorate

6. Caring for your Central Venous Catheter (CVC)

<i>Competency</i>	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:
<i>Is familiar with unit guidelines for commencing dialysis with CVC</i>										
<i>Collect and prepare 'put on' pack and disposables</i>										
<i>Assess catheter exit site</i>										
<i>Remove old dressing and redress CVC site if required</i>										
<i>Use tego connectors and aspirate heparin locks</i>										
<i>Assess patency of CVC</i>										
<i>Take blood samples if required</i>										

Key O = Observed P = Practiced C = Competent

In our opinion a level of competency had been achieved in this section

Nurse Signature

Print Name

Date

Patient Signature

Print Name

Date

Transplant, Urology and Nephrology Directorate

6. Competency definitions

Unit guidelines:	fully understands the unit protocol for infection control, hand hygiene and commencing dialysis with a Central venous Catheter (CVC)
Prepare 'put correctly on' pack:	is able to locate packs and prepare and hygienically
Assess exit site:	is able to check the CVC and decide if dressing needs changed
Redress CVC: to in	is aware of signs of infection and action take. Understands the importance of this reducing risk of infection
Tego connectors:	is aware of the importance of using tego connectors as a safety measure
guidelines	Is aware of the importance of removing Heparin locks in according to unit
Assess patency: non-	is able to fully assess patency of the CVC And is aware of the unit protocol for a functioning CVC
Take blood samples:	is aware of the need for routine blood samples

Transplant, Urology and Nephrology Directorate

7. Starting dialysis

<i>Competency</i>										
<i>Attach arterial & venous lines to fistula needles/dialysis catheter</i>										
<i>Start blood pump</i>										
<i>Administer prescribed tinzaparin dose</i>										
<i>Increase blood pump to desired rate</i>										
<i>Check & record arterial & venous pressures</i>										
<i>Check: -time and UF volume - dialysate concentration</i>										

Key *O = Observed* *P = Practiced* *C = Competent*

In our opinion a level of competency had been achieved in this section

Nurse Signature

Print Name

Date

Patient Signature

Print Name

Date

Transplant, Urology and Nephrology Directorate

7. Competency definitions

Attach arterial and venous lines to access:	able to attach lines correctly, safely and securely
Start blood pump:	able to start blood pump safely at the Appropriate speed
Administer tinzaparin:	able to correctly, safely and securely administer tinzaparin according to unit protocol
Increase blood pump to desired rate: and	able to identify desired blood pump speed and understands how to do this while checking arterial and venous pressures arterial needle sites
Check arterial & venous pressures: catheter	can identify how to check pressures and understands the implications of this, e.g. needle positioning/flows in dialysis
Check: - blood light carrying - dialysate light - time and UF vol. - dialysate concentrate	can identify these checks on the machine and understands the importance of out these checks at this time able to record information as required

Transplant, Urology and Nephrology Directorate

8. Stopping dialysis with a fistula

Competency	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:
<i>Aware of completion of dialysis</i>										
<i>Connect saline to arterial line</i>										
<i>'Wash back'</i>										
<i>Disconnect Dialysis lines from fistula needles</i>										
<i>Remove needles, apply pressure, apply plasters</i>										

Key O = Observed P = Practiced C = Competent

In our opinion a level of competency had been achieved in this section

Nurse Signature

Print Name

Date

Patient Signature

Print Name

Date

Transplant, Urology and Nephrology Directorate

8. Competency definitions

Aware of completion of dialysis:	can identify completion time on machine
Connect saline to arterial line:	able to safely and securely connect kimal 'connector' to saline and saline to arterial line
'Wash back':	able to perform 'wash back' to ensure all blood is returned
Disconnect dialysis venous lines from fistula needles:	able to safely disconnect arterial and lines from fistula needles
Remove needles, apply pressure, apply plasters:	able to safely remove needles, apply moderate pressure, ensure bleeding has stopped and apply plasters

Transplant, Urology and Nephrology Directorate

9. Stopping dialysis with a Central Venous Catheter (CVC)

Competency	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:
<i>Aware of completion of dialysis time</i>										
<i>Perform 'wash back'</i>										
<i>Disconnect blood lines from CVC</i>										
<i>Flush and lock CVC</i>										

Key *O = Observed* *P = Practiced* *C = Competent*

In our opinion a level of competency had been achieved in this section

Nurse Signature

Print Name

Date

Patient Signature

Print Name

Date

Transplant, Urology and Nephrology Directorate

9. Competency definitions

Aware of completion of dialysis:	is fully aware of the need to complete dialysis treatment and can identify completion time on the machine
Perform 'wash back':	is aware of the procedure for performing 'wash back'
Disconnect blood lines:	is able to safely disconnect arterial and venous blood lines from CVC
Flush and lock and CVC: able	is able to flush lines to maintain patency is fully aware of locking guidelines and to identify appropriate solution

Transplant, Urology and Nephrology Directorate

10. After dialysis

Competency	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:
Record weight, B/P, Pulse, Litres Processed										
Remove couplings										
Selection of Disinfection										
Strip machine and dispose of equipment										
Clean equipment and machine										

Key O = Observed P = Practiced C = Competent

In our opinion a level of competency had been achieved in this section

Nurse Signature

Print Name

Date

Patient Signature

Print Name

Date

Transplant, Urology and Nephrology Directorate

10. Competency definitions

Record weight, B/P, pulse, litres Processed:	able to accurately record weight and B/P and pulse unaided and to understand the significance of these readings
Remove Couplings:	able to understand that the dialysis couplings to the machine initiates the disinfection process
Selection of disinfection:	able to disinfect the machine as per unit protocol
Strip machine and dispose of all equipment:	able to strip down machine, remove lines etc and understand how to safely dispose of all equipment including sharps
Clean equipment machine and machine:	able to clean equipment, table and as per unit protocol to prevent infection

Transplant, Urology and Nephrology Directorate

11. Problem Solving

Competency	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:
<i>Aware of different alarms: -attention button -continuous alarm -intermittent alarm</i>										
<i>Hypotension (low B/P) on dialysis -causes -symptoms -actions</i>										
<i>Air detector alarm -causes -actions</i>										
<i>Venous pressure alarm -causes -actions</i>										
<i>Arterial pressure alarm -causes -actions</i>										
<i>TMP alarm</i>										

Transplant, Urology and Nephrology Directorate

<i>-causes -actions</i>										
<i>Temperature -causes -actions</i>										
<i>Conductivity alarm -causes -actions</i>										
<i>Blood leak -causes -actions</i>										
<i>Water failure -causes -actions</i>										
<i>Power failure -causes -actions</i>										
<i>Clotted needle, circuit, dialyser -causes -actions</i>										
<i>'Blown needle' -causes -actions</i>										
<i>Prolonged bleeding from fistula -causes</i>										

Transplant, Urology and Nephrology Directorate

<i>-actions</i>										
<i>Able to take blood samples -pre -post</i>										
<i>Technical Alarms -causes -actions</i>										

In our opinion an adequate level of understanding had been achieved in this section

Nurse Signature

Print Name

Date

Patient Signature

Print Name

Date

11. Competency definitions

Alarms:

- attention button (hand symbol)

this alerts you to a problem

- continuous alarm

this alerts you to a problem that you need to rectify

- intermittent alarm

this is a prompt rather than an alarm

Hypotension (low B/P) on dialysis:

Causes:

- removing too much fluid causing B/P to drop

Symptoms:

- feeling faint, dizzy, nauseous, hot

Actions:

- Press “minimum uf “ key to stop fluid removal
- check B/P
- give saline until feeling better
- re-assess target weight

Air detector alarm

This is a potentially serious alarm as air in the blood can be dangerous

Common causes:

- blood lines not connected securely
- Dialyser not primed correctly

Actions:

- check blood lines for evidence of air bubbles
- if no visible air re-set air detector
- check all connections are secure
- if air is visible you may need to ‘re-circulate’ (you may need help to do this)
-

Transplant, Urology and Nephrology Directorate

Arterial & Venous pressure alarms

Common causes:

- needle needs re-positioning
- blood line occluded (blocked/kinked)
- clotting
- fistula/catheter problem

Actions:

- reduce blood pump speed
- check needles and re-position if necessary
- check for occlusion in blood lines
- check lines and dialyser for signs of clotting
- rectify problem and slowly increase blood pump

TMP alarm

Causes:

- high – the machine is removing too much fluid or the circuit is clotting
- low – the machine is removing too little fluid

Actions:

- check the TMP limits
- check the UF rate
- observe the circuit for clotting

Temperature alarm

Causes:

- machine problems

Actions:

- Call the technician

Conductivity alarm

Common causes:

- machine not picking up the correct amount of dialysis fluid/bicarbonate, often caused by loose connections

Action:

- check connections
- check dialysis fluid/bicarbonate containers are not low/empty

Transplant, Urology and Nephrology Directorate

Technical Alarms

Causes:

- machine problem.

Actions:

- call technician

Blood leak

Causes:

- ruptured membrane in dialyser

Actions:

- discontinue dialysis – do not ‘wash back’

Water failure

Causes:

- insufficient water supply to the machine

Actions:

- check water supply in on
- check water inlet tube for kinks
- call technician/discontinue dialysis

Power failure

Causes:

- power failure to your house
- power point turned off accidentally

Actions:

- check above causes
- turn off machine
- turn blood pump slowly by hand
- if power does not return, ‘wash back’ & discontinue dialysis
- observe venous line carefully for air as the air detector will not be active when the power is off

Clotted circuit, needle, dialyser

Causes:

- insufficient tinzaparin

Action:

- if clots are visible you may need to change the circuit, you will be taught how to do this

Transplant, Urology and Nephrology Directorate

'Blown needle'

Causes:

- recognised by arterial or venous pressure alarm, apin at needle site and signs of a small 'balloon' at needle site

Actions:

- you will need to re-circulate and insert a new needle

Prolonged bleeding from fistula:

Causes:

- too much tinzaparin used
- clotting/fistula problem

Actions:

- apply pressure until bleeding stops
- if still bleeding after 1 hour contact unit for advice
- may need reduction in tinzaparin dose

Able to take blood samples:

- understands when to take blood samples
- able to take blood samples safely and accurately

Transplant, Urology and Nephrology Directorate

12. Administration of I.V. medication

<i>Competency</i>	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:
<i>IV medication</i>										

Key O = Observed P = Practiced C = Competent

Competency definition

- able to safely administer I.V. medications as prescribed
- aware of action and side-effects of medications

If you feel unwell please ring unit for advice before dialysing

If you feel unwell during dialysis ring unit for advice and/or discontinue dialysis

In case of an emergency dial 999

In our opinion a level of competency had been achieved in this section

Nurse Signature

Print Name

Date

Patient Signature

Print Name

Date

Transplant, Urology and Nephrology Directorate

13 .Centrifuge Competency Form

<i>Competency</i>	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:
<i>Patient is able to open the centrifuge</i>										
<i>Insert blood tubes correctly</i>										
<i>The principles of the machine</i>										
<i>Start the centrifuge</i>										
<i>Patient aware when machine has stopped.</i>										
<i>Patient is able to clean the machine.</i>										
<i>Patient can problem solve- Open door manually.</i>										
<i>Patient been given the manual to read</i>										
<i>Patient knows when the machine needs a service by the machine runs.(5000)</i>										

O=Observed,U= understand, D =Demonstration, C=Competent

In our opinion an adequate level of understanding had been achieved in this section

Nurse Signature

Print Name

Date

Patient Signature

Print Name

Date

Transplant, Urology and Nephrology Directorate

Competency Definition

Patient is able to use the centrifuge safely .

Patient understands the reason for balance within the centrifuge.

Patient understands the levels in the gel tubes are all level.

Patient knows when to request a service on the centrifuge.

Original Training guide compiled by Home Haemodialysis Nurses
Victoria Coogan and Johanna McWilliams based at Beaumont Hospital,
July 2009

Updated September 2012

Transplant, Urology and Nephrology Directorate

Appendix 8

HOME HAEMODIALYSIS EVALUATION & REVIEW –

This form is for the review and evaluation of established HHD patients to ensure their skills and techniques are in accordance with agreed protocols approved during training.

PATIENT NAME:

HOSP NUMBER:

ADDRESS:

DATE OF BIRTH:

LENGTH OF TIME ON HHD:

NAME OF SUPPORT/BACKUP:

FACILITIES:

- State of cleanliness (room & machine)
- Organization of room, stores and supplies
- Does the current room layout constitute a hazard? Yes No
specify:
-

DIALYSIS MACHINE SKILLS:

- Machine set up (lining & priming)
- Safety measures (clamps and relevant sensors in place)
- Type of access: AVF AVG CVC
- General access technique (observe for safety & general practice)
- Observation of vascular access infection control measures
- Hand hygiene measures (technique and frequency of hand cleansing)
- Needle security (inc blood line safety)
- CVC management (dressing, blood line security)
- Machine Programming (appropriate UF value, UF rate etc)
- Dealing with problems & alarms (safe and appropriate responses)

ADMINISTRATION OF DRUGS/RESERVATION OF BLOOD SAMPLES:

- Drugs administered as per hospital guidelines Yes No
specify: Please
- Safe practice of blood sampling: Yes No
Please specify:

Transplant, Urology and Nephrology Directorate

RECORDING OF NOTES (INCLUDING PATIENT DOCUMENTATION):

- Recording of Dialysis Data (vital signs, dialysis variables, drug administration, etc)

GENERAL ORGANIZATION & PLANNING

- Attitude and focus of tasks in hand
- Planning for emergencies or unplanned problems
- Self assessment post dialysis

WASTE DISPOSAL

- Appropriate disposal of clinical/non-clinical waste and sharps

SUMMARY/COMMENT

- | | | | | |
|-----------------------------|-----|--------------------------|----|--------------------------|
| ▪ Report sent to consultant | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| ▪ Retraining required | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |

IF FURTHER TRAINING REQUIRED, PLEASE OUTLINE TRAINING NEEDS:

NURSE SIGNATURE:

DATE OF REVIEW:

Transplant, Urology and Nephrology Directorate

Appendix 9

Home Haemodialysis Treatment Parameters

attach addressograph

Patient Name _____

MRN no. _____

	Existing parameters	Home Haemo. parameters
Dialysis Hours		
No. of session per week		
Dry weight		
Dialyser		
Concentrate	K- , Ca- , Glu- Mg-	K- , Ca- , Glu- , Mg- .
Anticoagulation		
Signed		
Date		

	Renewed parameters	Renewed parameters
Dialysis Hours		
No. of session per week		
Dry weight		
Dialyser		
Concentrate	K- , Ca- , Glu- Mg-	K- , Ca- , Glu- , Mg- .
Anticoagulation		
Signed		
Date		

For reference see appendix A

Transplant, Urology and Nephrology Directorate

Appendix A

Dialyser choice

For Reference from Product insert:

Dialyser In house	Surface Area(msq)	KoA	U/F Coeff. (ml/hr/mg)	Sterilised
Polyflux 140H	1.4	977	52	Steam
Polyflux 170H	1.7	1123	65	Steam
Polyflux 210H	2.1	1451	78	steam

Dialyser For home haemo	Surface Area (msq)	KoA urea	U/f Coeff. (ml/hr/mg)	Sterilised
ZeniumXPH170	1.7	1614	74	Gamma irra
ZeniumXPH190	1.9	1771	76	Gamma irra
ZeniumXPH210	2.1	1976	82	Gamma irra

Diasol™ Concentrate choice

Selected Diasol™ product available from Baxter

Formula	K+	Ca++	Glu
7118	1	1.0	5.6
7117	1	1.5	11.1
7034	1	1.5	5.0
7041	2	1.25	5.6
7085	2	1.5	11.0
7018	2	1.5	5.6
7026	2	1.75	5.6
7081	3	1.25	5.6
7094	3	1.5	11.1