



University Hospitals Coventry & Warwickshire NHS Trust

Clinical Guideline (full)

80:20 Haemodialysis Clinical Guidelines In Renal Services
 STARTING HAEMODIALYSIS IN END STAGE KIDNEY DISEASE
 BLOOD PRESSURE AND FLUID BALANCE IN HAEMODIALYSIS
 ADEQUACY OF HAEMODIALYSIS
 MANAGEMENT OF MINERAL BONE DISEASE

E-Library Reference

CG 1823

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Approving forum (QIPS or equivalent):

Renal Services Protocol and Guideline Approval Group

Specialty Clinical Guideline Lead:

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Department(s) / Primary Speciality:

Renal - Haemodialysis

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Target Audience:

All Healthcare professionals working within Renal Services

Superseded UHCW Clinical Guideline(s): (if applicable)

N/A

UHCW Associated Records:

Keywords:

HAEMODIALYSIS, MINERAL BONE DISEASE

Clinical Operating Procedures relating to this guidance (please list)

N/A

Summary version available

Guideline clinical content

Clinical Guidelines assist in decision-making; they do not replace clinical judgement. Regardless of the strength of evidence, it remains the responsibility of the clinician to interpret the application of the clinical guidance to local circumstances and the needs and wishes of the individual patient. Where variations of any kind do occur, it is important to document the variations and the reason for them in the patient's health record. If in doubt, seek senior advice.

Introduction

(Why this Trust-wide Clinical Guideline is necessary. Include reference to any relevant national guidelines, statutory requirements or other recommendations Identify the risk(s) the guideline will address.)

An 80:20 guideline refers to the standard of care that is expected to be given to the larger population of renal patients (80%). There will be a smaller group of patients who will not fit in this category and will require alternative medical interventions as deemed appropriate by the Renal Medical Team (20%). The 80:20 approach does not cover every eventuality, however, it provides basic guidance for junior doctors and renal nurses to make clinical decisions in the majority of cases.

The Basics

Consideration of the Patient

- Be welcoming to patients and relatives arriving/waiting on Ward 50 and respect confidentiality.
- Give all patients clear, unbiased and evidence-based information and make recommendations, so that they can make an informed decision based on your facts and their personal needs.

Working in a team

- The purpose of the 80:20 guidelines is to improve our management of end-stage kidney disease locally by encouraging consistent decision-making, within an agreed framework.
- Consistent, auditable treatment by all members of the renal team should improve standards of care and should help patients to understand how we reach the recommendations that we make.
- All members of the multi-disciplinary team may make decisions about the treatment of a patient.

Professional Practice

- All professionals in the team have a strict obligation to:
 1. Make a careful clinical assessment based on **ALL** the relevant information..
 2. To document in the clinical record all your findings, decisions, actions and reasoning
 3. To communicate to the patient and to colleagues
 4. To ensure that your clinical decisions and recommendations are effectively handed over to other relevant person/s.

Clinical Assessment

- Time and staffing constraints frequently require clinical assessment and decisions to be based on observations made by colleagues – BE CAUTIOUS and document carefully.

- Diagnosis based on laboratory results alone should always be based on a trend of several results OR on a repeat of an unexpected result. Isolated results should rarely lead to a change in treatment without corroboration from an associated clinical change or laboratory confirmation.
- When making/confirming a diagnosis, try to get your head around the concepts of investigations with positive predictive value ('rules in') or negative predictive value ('rules out').

Treatment – Documentation, Communication, Action

- Initial treatment recommendations should usually follow 80/20 guidelines – if they don't, you should document clearly the reasons for your decisions in accordance with GMC/NMC guidelines for record keeping.

Ethical considerations

- Engage all patients with capacity in informed discussion about available treatment options.
- Please note that this goes further than simply 'offering choice' and often can only be done over a period of time or several discussions.
- Remember that a patient's capacity may be contingent on the nature of intervention proposed.
- Please think carefully when the treatment of one patient or group of patients affects, directly or indirectly, the treatment of another patient or group of patients already under our care.

Summary

(Summarise the main points of the guidance. Use flow diagrams where appropriate and limit to a single side of A4)

Definitions

(List and define terms / abbreviations / acronyms used in the document. If there are none, write NONE)

GMC – General Medical Council – governing body – registers doctors to practise in the United Kingdom

NMC – Nursing & Midwifery Council – Governing Body

RRT – Renal Replacement Therapy

HD – Haemodialysis

IHD – Ischaemic Heart Disease

Guideline details

(This is the main body of the guideline containing the detailed requirements, which will support implementation and decision-making. Use subheadings as required)

Starting Haemodialysis (HD) for End Stage Kidney Disease (ESKD)

All patients should be advised during pre-dialysis education/preparation that they will require 12hrs dialysis/week to be achieved within 1-2 weeks of starting treatment with HD. (Mactier et al 2009). The patient's first dialysis will be 2 hours, then the second dialysis will be 3 hours, all subsequent haemodialysis treatments will be 4 hours in duration.

First dialysis for CKD patients should be minimal weight loss and low pump speed to avoid fall in BP and/or disequilibrium syndrome. Occasionally, when a new patient has pulmonary oedema, sequential UF followed by no-weight loss dialysis may be needed for the first dialysis.

Acute patients can usually be treated with faster pump speeds from the outset.

Patients should generally start RRT if eGFR <7.5 ml/min, even if asymptomatic, with due allowance either way for unreliability of eGFR. Clinical indications for starting HD, when e-GFR >7.5 ml/min, include shortness of breath, anorexia, itching, tiredness, salt/water retention, inability to control metabolic derangement with medication (eg hyperphosphataemia, hypocalcaemia, hyperkalaemia, acidosis, anaemia etc). Clinical judgement, secondary effects such as hyperphosphataemia, hyperparathyroidism, acidosis and prognosis on RRT is more important than e-GFR, which is an unreliable indicator in individual patients.

All chronic patients will be assigned to a team and included in HDQA from the outset.

Note that patients with a new fistula should have a target weight 500ml over their normal baseline for approx 6 - 8 weeks, (pending the commencement of needling), after which it should be cautiously reduced to baseline target weight (which may have changed, of course) – document on Proton and remember to do this. Please be aware of patient compliance to fluid gains and the possibility of the patient becoming hypertensive due to additional fluid.

When patients start dialysis, drugs should be reviewed and adjusted: eg stop Sodium Bicarbonate/Furosemide/Alpha Blockers/ Direct Vasodilators. (Do not stop Calcium Channel Blockers/Beta blockers/ACE/ARB). Increase ESA dosage to RRT dose (usually doubled) & write up IV Iron as per anaemia guideline. Note that patients must NOT be routinely advised to omit antihypertensive drugs on dialysis days – if intra-dialytic hypotension is a problem, advise them to take tablets in the evening instead.

Patient will be advised to limit dietary salt and daily fluid intake to achieve a maximum weight gain of no more than 1.5 kg mid-week, 2 kg at weekend. (This should be less in patients with residual urine output). Patients should be aware that residual renal function is important to improve outcomes and is likely to be lost if fluid balance is not carefully controlled. Members of the dietetic team will advise, and this may be reinforced by nursing and medical staff.

Blood flow on haemodialysis will progressively be increased to maximum tolerated. Note that patients should NOT be set an arbitrary blood flow limit; the flow rate is limited only by venous/arterial pressure, symptoms on haemodialysis and recirculation.

All staff should be aware that patients often gain flesh weight in the first few months of RRT, and should have their target weight adjusted upward. Note that patients who have a low post-dialysis BP and large inter-dialytic weight gain are likely to have been set too low a target weight.

Preservation of residual renal function is important, so:

All patients should have a formal, documented medical assessment by an experienced middle grade doctor to include fluid status during week 2- 3 on HD. Advice about inter-dialytic weight gain will be repeated. 24-hour urine for urinary volume, urea, creatinine, sodium, potassium should be measured during week 4 on HD, and a documented medical assessment around week 6.

Blood Pressure & Fluid Balance in HD

Patients depend on ALL staff to monitor and adjust target weight regularly
Preservation of renal function is critical for patient well-being and survival.
Daily Home haemodialysis may be useful for patients with fluid balance problems.

General guidance

Maximum inter-dialytic weight gain: 1.5 kg mid-week and 2 kg at the weekend.

- Dietary salt restriction, as well as fluid restriction, is a key means of achieving this. (Holt & Goldsmi 2010)
- Patients with a good urine output should be able to achieve much smaller inter-dialytic weight gain
- Diuretics should only be used if there is a significant documented increase in urine volume.
- Antihypertensive drugs should be taken every day – it is usually simplest to take them sometime after dialysis, for example before going to bed. Once daily drugs, including Doxazosin, should be given once a day and not in divided doses. Be aware of cautions and side-effects in BNF.

Routine fluid removal is a maximum of 10 ml/kg/hr during dialysis.

This will be recorded on Proton for audit purposes. If excessive weight gain, the patient will be advised to achieve proportionately less weight gain prior to the next dialysis.

If the patient becomes breathless/unwell after making a change, or if there is no improvement, refer Renal Registrar or Consultant.

Hypertension

If pre-dialysis BP > 140-160 /90 consider reducing TARGET WEIGHT unless symptomatic of low BP.

If raised BP persists despite optimum fluid balance (ca 30% of HD patients) drug treatment w be required:

- Amlodipine 5mg initially, increasing to 10 mg, is probably the safest/simplest
- Ramipril/Losartan also useful, especially if LV dysfunction or residual renal function
- Atenolol 25 mg after dialysis, especially if patient has IHD (this is the maximum licensed dose)
- Doxazosin may be useful if bladder outflow symptoms/BPH, but is 2nd line drug for hypertension
- Other drugs are 3rd/4th/5th line and require appropriate monitoring

START with low dose; increase gradually; think about side-effects eg ankle swelling on amlodipine

AVOID multiple vasodilator combinations (eg Amlodipine+Doxazosin+Hydralazine)

SUGGEST taking BP tablets every day, sometime after dialysis – eg in the evening.

AVOID asking patients to omit BP drugs before dialysis

PRESCRIBE once daily drugs, including Doxazosin, once daily (don't divide unnecessarily)

Hypotension

Episodic/occasional low BP on dialysis, usually in last hour of dialysis treatment:

- Stop fluid removal; consider bolus 0.9% Sodium Chloride, only if unwell (avoid gelofusine).
- Check running sheets – if post-dialysis BP is regularly $\leq 120/70$, increase target weight
- Consider reducing/withdrawing BP drugs if pre-dialysis BP $< 130/80$ mm/Hg
- Reduce inter-dialytic weight gain, so less fluid removal required during HD
- If one-off event, think about other causes; eg myocardial ischaemia, sepsis
- Always record an episode of hypotension in the HD running sheet on Proton.

If patient has symptoms of hypovolaemia or any one or more of the following:

- reduced thrill of fistula
- low BP during or after dialysis
- cramps
- postural hypotension
- dizziness
- nausea,
- excess interdialytic weight gain

The patient is **likely to need an increased target weight by 1 kg or more.**

If patient has chronically low BP, consider initially:

- Reduce inter-dialytic weight gain, by reducing daily salt and fluid intake
- Assess target weight and increase if appropriate. Do not increase target weight excessively if there is a cardiac cause of low BP
- Reduce blood pressure drugs: withdraw 2nd line drugs (Doxazosin, Hydralazine) first. Do not withdraw ACE-I/ARB if LV dysfunction
- Correct anaemia with IV iron + ESA (or transfusion), according to clinical guidelines

2nd/3rd/4th line options (ie 20% guidance after discussion.... Reassess after 6 weeks)

- Sequential ultrafiltration and isovolumic dialysis – BUT this takes longer
- Increased dialysate sodium and/or sodium profiling
 - A constant sodium concentration of 140 meq/L
 - Linear sodium ramping (155 to 140 meq/L)
 - Stepwise sodium ramping: 155 meq/L, 3 hrs and 140 meq/L, 1 hr
- Low temperature dialysis at 36.5°C initially, to minimum of 35°C
- Increased dialysate Calcium (1.75mM) – monitor Ca⁺⁺, PTH
- Midodrine (unlicensed) – 10 milligram 3 x times per day for chronic hypotension
10 milligram before HD for dialysis-induced hypotension
- Sertraline 50 – 100 milligram daily (anecdotal) for HD-related hypotension
- Eating during dialysis can worsen, but may be needed for nutritional reasons
- Non-pressor dose of vasopressin infusion

Common BP patterns - a guide for ALL staff, including nurses, to take action:
Patients with oedema should reduce weight by 0.5-1 kg/week, unless not tolerated.
Patients with big weight gain and low post-HD BP usually have too low a target weight.

	High Post-BP	Low Post BP (or low BP on dialysis)
High Pre-BP	Progressively Reduce TARGET WEIGHT by 0.5 – 1 kg/week	Reduce salt and fluid intake ALTERNATIVELY CONSIDER increased TARGET WEIGHT + BP drugs
Low Pre-BP	Nobody knows!	Reduce/stop BP drugs. MAY need increased TARGET WEIGHT, but be cautious, especially if poor LV function.

Adequacy of Haemodialysis

Residual Renal Function is very important for patients well-being and survival: Advice and treatment given to patients must be directed to preserving it

- Any patient starting dialysis on a neckline will need immediate referral to access clinic.
- The great majority of patients benefit from 12 hours dialysis treatment per week. This is particularly important if there is no residual renal function.
- Document 24-hour urine for volume, U&E, creatinine in all patients 4 weeks after starting dialysis, and repeat 6 monthly for those patients passing urine.
- Repeat 24-hr urine 3 monthly in all patients on less than 3X4 hour HD sessions (Mactier et al 2009)
- Remember URR only refers to the day on which it is measured – poorer dialysis treatment on other days does not show in adequacy results. Please repeat URR if the result seems wrong or out of keeping for that patient.
- Increase dialysis dose using the following measures in chronological order:
 1. Increase dialysis time to 3X4hrs per week and/or
 2. Increase blood flow rate to maximum tolerated. This could be up to 500 ml/min for a fistula. Up to 350 ml/min for a neckline – Do NOT reduce blood flow rate for arbitrary reasons such as ‘heart disease’
 3. Standard dialysate flow rate is 700 ml/min.
 4. Check recirculation at faster blood flow rates: ? re-position needles.
 5. Use appropriate size dialyser; increase size only after other parameters have been optimised.

Access

Renal association guidelines recommend

All patients with end stage kidney disease who commence haemodialysis or are on long term haemodialysis should dialyse with arteriovenous fistula as first choice, an arteriovenous

60% of all incident patients with established end Stage kidney disease commencing planned haemodialysis should receive dialysis via a functioning arteriovenous fistula (AVF) or arteriovenous graft (AVG).

80 % of all prevalent long term dialysis patients should receive treatment via definitive access, AVF, AVG (or Tenckhoff catheter if patients chosen modality is peritoneal dialysis).

Patients who are known to renal prior to commencing dialysis (peritoneal or haemodialysis) should have received education which should assist them making their modality choice. Then seen at an access clinic to assess and prepare the patient with their access prior to them commencing renal replacement therapy. This assessment process and preparation should prevent whenever possible the patient having to have a vascular catheter.

All patients at CKD 4 should be educated in regards to the preservation of their veins.

Fistula first is recommended for patients who chose haemodialysis as their treatment of choice.

Any patient starting dialysis on a neckline will need referral to access clinic for assessment.

There are some patients who may refuse to have a AVF/AVG or some patients who are unable to have a AVF/AVG, these patients should be seen by their renal consultant and vascular surgeon so all risks and benefits can be formally discussed and documented.

Consider scan and referral to Access Clinic for following indications:

- Poor blood flow rate for any reason
- Clotty fistula
- High venous pressure
- High recirculation.

Exception Reporting

- Note that the current dialysis regime and access of all patients must be recorded on Proton. If patients are prescribed less than 4 hours dialysis, the reason should be recorded on proton as follows:
 - Patient choice (against medical advice)
 - Clinical decision – Palliative phase of treatment
 - Residual function
 - Capacity in unit
- Be aware dialysis 'down-time', during recirculation (time lost whilst not dialysing) – patients with intra-dialytic hypotension or other reasons for slowing blood flow rates may get

significantly less than their prescribed dialysis dose – document on Proton.

Nexadia Programme

Nexadia monitor is a structured electronic data management and monitoring system which enables accurate real time data collection, storage and retrieval of individual dialysis treatments. This system enables automation of many processes during Haemodialysis treatment:

- Automatic transfer of the patient's weight from the scales to Nexadia.
- Transfer of the electronic prescription stored on proton and transmitted to the Braun machine via Nexadia
- Calculation of the required current daily ultrafiltration parameters.
- Warnings via a traffic light system if incorrect or intolerable UF calculation results have been recorded.
- Overview presentation of all treatments in progress
- Real time data of all treatment parameters for example, vital signs, venous/arterial pressures, Transmembrane pressures, accumulative UF rates/volumes, blood flows, substitutional rates/volumes/blood flow ratios, accumulative anticoagulation volumes, accumulative blood volume processed, phase volumes, reinfusion rates/Accumulative arterial bolus volume.
- Transmission of HD events and medication administered.
- Transmission of treatment data to proton at the end of each dialysis treatment.
- Data archiving and long term evaluation of treatments and trends.

All patients' starting haemodialysis will need to have an electronic dialysis prescription created on proton. It is the responsibility of the assigned consultant to ensure that the dialysis prescription is entered and kept up to date.

All patients starting haemodialysis must have one of the following status on proton to receive the dialysis prescription electronically to the Braun machine:

- i) HOS (Hospital Haemodialysis)
- ii) HVR (Hospital Haemodialysis with virus risk)
- iii) HOM (Home Haemodialysis b)
- iii) HAC (Hospital Acute Haemodialysis)

Nominated Senior Registered Nurses (band 7 and band 6) will have access to change prescribed target weights, Dialysis access, dialysate flows and dialyser size.

All Patients receiving haemodialysis at all UHCW units will be required to have a patient ID card created. This card will hold the patient's unique Nexadia identification number within the cards microchip and will be used to identify the patient on the scales and on the Braun machine. The ID card will display three forms of patient Identification:

Name
Hospital number
Photograph

Patient ID Cards will remain the property of UHCW renal services and will not be removed from site.

An Individual patient flow sheet will be used to validate the patient's current prescription and information relating to the previous three dialysis sessions. Flow sheets will be printed each week following HDQA to ensure changes made to the haemodialysis prescription have been captured.

Each unit will be responsible on a weekly basis for printing flow sheets.

In the event of network failure unit staff will need to return to the proton prescription and/or patient kardex for the current prescription. All dialysis parameters will need to be documented manually and manually entered onto proton at the end of the dialysis session.

Home Haemodialysis

The Home Haemodialysis Care Team will assess the options for patients who wish to dialyse at home either using a Braun or NxStage machine. The patient will need to have a fully working arteriovenous fistula or a functional vascular catheter.

The Home Haemodialysis Care Team is led by a Consultant who has overall responsibility for clinical outcomes. The team aims to be flexible to meet the needs of patients on haemodialysis at home whilst maintaining safety through a strong education, regular updates and monitoring through home visits and other means of communications such as telephone calls, texts and e-mail.

Our aim is to maintain patients safely in their own homes for as long as they wish, which may include up to the point of dying. Links are maintained with the Multidisciplinary Team to facilitate this. Patients are referred to the Home Haemodialysis Team by e-referral. They are seen in clinic by the Consultant and once approved, placed on a training list. When competency is reached they are allocated a Named Nurse from the team to look after them at home.

The Home Haemodialysis Team have a training room at Lucy Deane Dialysis Unit and are contactable by phone. The Team will visit patients at home, assist with training and education at Satellite Units and the Main Unit, attend clinical forum, patients forum, HDQA clinic and New Patient clinic as well as Infection Control Meetings and Health and Safety Meetings to ensure equity across the service

Management of CKD-Mineral Bone Disease (MBD)

All new haemodialysis patients must have dietary assessment and advice.

The calcium/phosphate/PTH status of patients on dialysis will be heavily influenced by the treatment that they received prior to dialysis....

- a. Most patients will have secondary hyperparathyroidism.
- b. Some with long-standing CKD may well come onto dialysis with autonomous (tertiary) hyperparathyroidism.
- c. Some will have low-turnover bone disease or have had a previous parathyroidectomy and will be at increased risk of hypercalcaemia and vascular calcification.

Common CKD-MBD patterns – initial treatment if PTH > 8 pmol/l - a guide for ALL staff:

	High phosphate	Low phosphate
High Calcium	<p>Reduce/stop Vitamin D analogue</p> <p>Use non-calcium-phosphate binder</p>	<p>Reduce/stop Phosphate binders (particularly calcium based)</p>
Low Calcium	<p>Use Calcium Acetate (with meals), for example Renacet/Phosex</p>	<p>Use Calcitriol or 1-alfacalcidol (Active vitamin D analogue)</p> <p>Reduce/stop phosphate binders (particularly non-calcium based)</p>

Important Notes:

1) Standard dialysate calcium is currently 1.25 mM.. Higher Ca⁺⁺ concentration (1.5 -1.75mM) may be used if patient has low serum calcium and high PTH, particularly if calcium-containing phosphate binders are not tolerated.

2) Some patients treated with active Vitamin D analogues (1-alfacalcidol or calcitriol), starting dose 0.25mcg OD, increased at monthly intervals, respond surprisingly quickly, with rapid fall in PTH – *if the PTH < 8 pmol/l, Calcitriol/1-alfacalcidol should be reduced or stopped, unless patient has had a parathyroidectomy*

3) Where unable to increase Calcitriol/1-alfacalcidol due to hypercalcaemia risk, Paricalcitol (selective active vitamin D analogue) should be prescribed in replacement of Calcitriol/1-alfacalcidol (starting dose 1mcg OD)

4) Some patients with very high PTH levels (>85 pmol/l) AND high/normal calcium levels may be treated with Cinacalcet, using the appropriate protocol. Follow NICE guidelines and monitor for hypocalcaemia

Note there is a draft algorithm for subsequent management of CKD-MBD. (Steddon & Sharples 2011)

5) Haemodialysis patients will have their vitamin D levels (serum 25(OH)D) monitored and corrected as part of standard haemodialysis care. There are separate guidelines for this on the e-library (Vitamin D supplementation and haemodialysis patients).

Giving (and receiving) clinical advice – supplement to 80:20 guidelines

There may be several reasons why a patient does not fully adhere to the advice we give, or the treatment regimens we set.

To encourage concordance:

- Check the patient's understanding of treatment, and the impacts of non-concordance.
- Work collaboratively with the patient to set the treatment regimen, working towards the patient's abilities, understanding, and wishes.
- Agree on treatment goals and time-frame with the patient
- Encourage the patient's sense of how important concordance is.
- Assess a patient's confidence in their abilities to stay concordant
- Treatment regimens are designed around patients' preferences, in the context of medical advice and resource considerations.
- Simplify medication regimen where possible, and consider a patient's organisational skills, memory and reading abilities- consider a written or pictorial medication chart.
- Identify any potential barriers to concordance by asking the patient, e.g. "What might stop you from being able to stay on the dialysis machine for 4 hours?"
- Refer for further more specialist help if underlying psychological factors have been identified and are contributing to non-concordant behaviours, and the patient is prepared to address these.

Please take into consideration:

- The patient's beliefs about his/her illness (the cause, the treatment, the perceived short and long term impacts)
- Does the patient believe he/she is able to make changes or carry out the treatment? (Self-efficacy)
- Does the patient take responsibility for his/her health? (Health locus of control) and the patient's opinion about involvement in decision making: some patients prefer to take full responsibility, and want to negotiate their regime according to fluctuations in their health; whereas others prefer to let the team lead the decision-making. Ask the patient about their preference.
- Memory, organisational skills
- The patient's level of social support, cultural factors, and financial status, which may influence their ability to engage actively with treatment.
- Non-intentional e.g. practical difficulties in daily living; forgetting aspects of treatment regime or information provided.
- Psychological factors e.g. depression; impact of past or current psychological trauma; anxiety

Ethical framework:

- Difficult decisions/recommendations should take into account the probability of improving the patient's situation and the probability of causing harm.
- Due weight is then given to the patient's autonomy (choice), but this should be balanced by any adverse effect on other patients or carers.

End of clinical content
Guideline Governance
Implementation (If the guideline relates to a service, pathway or external agency, provide details and reference any associated clinical operating procedure (COP) or corporate business record (CBR))
E-Library
Training (Provide details of how any associated training is delivered, target audience, and if online training is available provide link. If training provided in Trust or Departmental induction, please specify to which staff groups.)
No additional training required
Patient Information (Reference any associated Patient information leaflets)
N/A

Audit & Monitoring (Detail how the implementation and effectiveness of the clinical guideline will be monitored)				
Aspect being monitored	Monitoring method	Responsible department(s)	Frequency	Group / committee receiving report & responsible for actions
Content of guidelines	Audit using Renal Dashboard to measure patient outcome of haemodialysis	Renal Services	3 monthly	Clinical Forum
End of Governance content				

Guideline References

CEBIS Evidence Summary

(, NICE Guidelines, and other National Guidance. Other national guidance may include those issued by speciality college, patient safety agency, monitoring agencies, or other external governing bodies)

Guideline Evidence Summary

Guideline: **CG1823 80:20 Haemodialysis Clinical Guidelines In Renal Services**

Version: CEBIS N^o: Review date: 31/3/2017

Lead author: Dr David Bennett-Jones Guidelines Lead:

Search conducted by: HP On: 20 April 2017

Guidance

Includes UK and International Guidelines, Consensus Statements, Quality Standards, Care Pathways and National Policies

National Institute for Health and Care Excellence (NICE)

Clinical Guideline CG182. Chronic kidney disease in adults: assessment and management. 2014, updated January 2015

<https://www.nice.org.uk/guidance/cg182>

NICE Pathways: Management of Stage 5 chronic kidney disease <https://pathways.nice.org.uk/pathways/chronic-kidney-disease#path=view%3A/pathways/chronic-kidney-disease/management-of-stage-5-chronic-kidney-disease.xml&content=view-index>

Quality Standard QS5. Chronic kidney disease in adults. Last updated November 2014

<https://www.nice.org.uk/guidance/qs5>

National Kidney Foundation

KDOQI Clinical Practice Guideline for Hemodialysis Adequacy 2015 update.

[http://www.ajkd.org/article/S0272-6386\(15\)01019-7/fulltext](http://www.ajkd.org/article/S0272-6386(15)01019-7/fulltext)

Canadian Society of Nephrology

Canadian Society of Nephrology 2014 clinical practice guideline for timing the initiation of chronic dialysis.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3903737/>

Evidence Summaries

Includes Critically Appraised Reviews, Systematic and other Reviews, Meta-analyses, Health Technology Assessments, Economic Evaluations and Horizon Scanning Intelligence.

Cochrane Systematic Reviews

Advance care planning for haemodialysis patients. July 2016.
<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD010737.pub2/full>

Authors' conclusions: We found sparse data that were assessed at suboptimal quality and therefore we were unable to formulate conclusions about whether advance care planning can influence numbers of hospital admissions and treatment required by people with ESKD, or if patients' advance care directives were followed at end-of-life. Further well designed and adequately powered RCTs are needed to better inform patient and clinical decision-making about advance care planning and advance directives among people with ESKD who are undergoing dialysis.

Dietary interventions for mineral and bone disorder in people with chronic kidney disease. September 2015
<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD010350.pub2/full>

Authors' conclusions: There was limited low quality evidence to indicate that dietary interventions (calcium-enriched bread or low phosphorus/protein intake) may positively affect CKD-MBD by increasing serum calcium, decreasing serum phosphorus, the calcium x phosphate product and FGF-23. Large and well-designed RCTs are needed to evaluate the effects of various interventions for people with CKD-MBD.

Haemodiafiltration, haemofiltration and haemodialysis for end-stage kidney disease. May 2015
<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD006258.pub2/full>

Authors' conclusions: Convective dialysis may reduce cardiovascular but not all-cause mortality and effects on nonfatal cardiovascular events and hospitalisation are inconclusive. However, any treatment benefits of convective dialysis on all patient outcomes including cardiovascular death are unreliable due to limitations in study methods and reporting. Future studies which assess treatment effects of convection dose on patient outcomes including mortality and cardiovascular events would be informative.

Medscape

Chronic Kidney Disease Treatment & Management. Updated 2 May 2017
<http://emedicine.medscape.com/article/238798-treatment>

Other Systematic Reviews

Urol J. 2016 Aug 25;13(4):2744-9.

Evaluation of dialysis adequacy in hemodialysis patients: A systematic review.
<http://www.urologyjournal.org/index.php/uj/article/view/3314/1169>

J Nephrol. 2016 Apr;29(2):153-161. doi: 10.1007/s40620-015-0243-8.

Stage 5-CKD under nephrology care: to dialyze or not to dialyze, that is the question.
<https://www.ncbi.nlm.nih.gov/pubmed/26584810>

Abstract: Appropriate timing of starting chronic dialysis in patients with advanced chronic kidney disease (CKD) under nephrology care still is undefined. We systematically reviewed the most recent studies that have compared outcomes of stage 5-CKD under conservative versus substitutive treatment. Eleven studies, most in elderly patients, were identified. Results indicate no advantage of dialysis over conservative management in terms of survival, hospitalization or quality of life. This information is integrated with a case report on a middle-aged CKD patient followed in our clinic who has remained for 15 years in stage 5 despite severe disease. The patient is a diabetic woman who underwent right nephrectomy in 1994 because of renal tuberculosis. In 1999, she commenced regular nephrology care in our clinic and, since 2000, when she was 53 years old, her estimated glomerular filtration rate (eGFR) has been ≤ 15 ml/min/1.73 m². Over the last decade, despite, several episodes of acute kidney injury and placement of permanent percutaneous nephrostomy in 2001, renal function has remained remarkably stable, though severely impaired (eGFR 7.7-5.6 ml/min/1.73 m²). Our systematic analysis of the literature and this case report highlight the need for further studies, not limited exclusively to elderly patients, to verify the efficacy of non-dialysis treatment in stage 5-CKD patients. Meanwhile, nephrologists may consider that their intervention can safely prolong for several years the dialysis-free condition in ESRD independently of age.

Am J Kidney Dis. 2015 Nov;66(5):823-36.

Timing of dialysis initiation, duration and frequency of hemodialysis sessions, and membrane flux: a systematic review for a KDOQI clinical practice guideline.

<https://www.ncbi.nlm.nih.gov/pubmed/26498415>

CONCLUSIONS: Limited data indicate that earlier dialysis therapy initiation and more frequent and longer hemodialysis did not improve clinical outcomes compared to conventional hemodialysis.

Other Trusts' Guidelines

Only guidelines available in the public domain.

Nottingham Renal and Transplant Unit

Guidelines for the Management of Chronic Kidney Disease Mineral Bone Disease in Adults. September 2015

<http://www.nuh.nhs.uk/handlers/downloads.ashx?id=60918>

UHCW Related Guidelines

COP 352 Dialysing a patient for the first time as a planned treatment for ongoing haemodialysis therapy V6. November 2016.

<http://webapps/eLibrary/filecon/download.aspx?Doc=115307&DocReturn=/elibrary/&VERI=jjcbcmf6>

COP 375 The administration of intravenous iron during haemodialysis. November 2016.

<http://webapps/eLibrary/filecon/download.aspx?Doc=115310&DocReturn=/elibrary/&VERI=m66qbgxm>

CG 1923 Vitamin D Supplementation in Haemodialysis Patients. September 2015.

<http://webapps/eLibrary/filecon/download.aspx?Doc=113583&DocReturn=/elibrary/&VERI=xfjmmmb8>

Some evidence may not be available in full text. If it is not, please [request a copy of the document](#) from the library. Just copy the link, then copy and paste the citation details into the e-mail. If you are not using Outlook, do the same into the e-mail request form (<http://tinyurl.com/getfromuhcw>).

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Sources of Evidence

Evidence has been obtained using these sources:

NICE Evidence

PubMed

TRIP Database

Cochrane Library

Google Advanced Search

Search Strategy

The following keywords were used in this search:

PubMed:

systematic[*sb*] AND (("kidney failure, chronic"[*MeSH Terms*] OR ("kidney"[*All Fields*] AND "failure"[*All Fields*] AND "chronic"[*All Fields*]) OR "chronic kidney failure"[*All Fields*] OR ("end"[*All Fields*] AND "stage"[*All Fields*] AND "renal"[*All Fields*] AND "disease"[*All Fields*]) OR "end stage renal disease"[*All Fields*]) AND ("haemodialysis"[*All Fields*] OR "renal dialysis"[*MeSH Terms*] OR ("renal"[*All Fields*] AND "dialysis"[*All Fields*]) OR "renal dialysis"[*All Fields*] OR "hemodialysis"[*All Fields*])) AND (("2014/01/01"[*PDAT*] : "3000/12/31"[*PDAT*]) AND "humans"[*MeSH Terms*])

end stage renal disease guidelines

dialysis adequacy
dialysis mineral
guideline dialysis "fluid balance" or "body composition"

The search was limited to items published since the approval date of the current UHCW document:

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References cited in guideline	Grade*

***Grade:- The references are graded through the CEBIS process according to the criteria outlined below.**

Grade of evidence	Based on
1	Systematic review or meta-analysis
2	Randomised controlled trial/s
3	Controlled study without randomisation (e.g. case controlled) or quasi-experimental study, such as a cohort study
4	Descriptive studies such as case series and reports.
5	Expert opinion, narrative review

Add any Appendices below

(Please use a "Page Break" before each appendix, and list each clearly in the section on the title page. Appendices may include a summary, a flowchart, a proforma, or other materials, but its purpose must be clearly identified)