Renal replacement therapy

Consultation on draft guideline - Stakeholder comments table
09/04/18 to 21/05/18

Comments forms with attachments such as research articles, letters or leaflets cannot be accepted.

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Astellas Pharma	General	General	General	Thank you for the invitation to participate in the guideline development for renal replacement therapy. After reviewing associated materials, I would like to inform you that we would not be commenting in this consultation as the draft guidelines contains no issues of interest for our members.	Thank you for your comments.
Baxter Healthcare Ltd.	Evidence Review B	39	9	The economic analysis does not include PD as an alternative as it assumes that people have already made the decision that they do not want to do PD. One of the key model assumptions is that people cannot switch to PD once they have started on HD/HDF. However, in practice, there is a proportion of patients that will move from HD to PD. Indeed, the Renal Association Clinical Practice Guidelines (2017) state in their introduction "Peritoneal dialysis (PD) …is an important part of an integrated service for renal replacement therapy that is frequently selected by patients as their preferred initial mode of therapy and is a therapeutic option for patients wishing or needing to swap from HD and after renal transplant failure. Although PD is not considered as an alternative in the economic analysis, can this possibility for patients to move from HD to PD be highlighted to reflect clinical practice and patient choice?	Thank you for your comment. The paragraph explaining the model structure in this chapter has been updated to match the full technical report where the fact that patients can switch to PD is acknowledged, and the rationale for excluding this from the model is explained. The possibility of switching from HD to PD is discussed in evidence report C sequencing.
Baxter	Evidence	42	7	It is noted that reference costs were from 2015/16 and these	Thank you for your comment. This typo has been corrected.

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Healthcare Ltd.	Review B			were updated to 2017/18. However, the costs presented in Table 28 (page 44, line 24-25) are from 2016/17. This may need clarification.	
Baxter Healthcare Ltd.	Evidence Review B	42	25	Table 28 is based on NHS reference costs 2016-17. It is well known and widely reported that these costs are fundamentally flawed and misrepresent the costs in the UK. This is mainly driven by the huge variation in reporting of therapies between one treatment centre and another. Please see our comment below.	Thank you for your comment. The committee highlighted the concerns regarding the NHS reference costs for dialysis during development and this was investigated and discussed in detail. These considerations are documented in Chapter B. We also explored whether there were other options to obtain more accurate cost estimates including consulting with representatives of the clinical reference group and it was agreed there was no better option at this time. No better up to date information has been provided at consultation. The unit cost section in Chapter B has been edited to ensure the concerns and uncertainties regarding the NHS reference cost data are clear and some additional considerations have been added based on stakeholder's comments. The committee took into account uncertainties in costs and cost effectiveness when making recommendations and this is described in Section 1.10 The committee's discussion of the evidence. This has also been edited to ensure uncertainties are clear.
Baxter Healthcare Ltd.	Evidence Review B	44	10	Figure 2 highlights that there could be some potential errors and variability between Trusts in the reporting of Reference Costs. Costs for in-centre HD/HDF are more centred around the mean which indicates less variation compared to costs for PD, CAPD, APD and Assisted APD which show a lot more variation (costs spread out with numerous outliers and many values below the mean). Considering this, the reference costs for the PD modality may not be an accurate reflection of the true costs of providing this service.	Thank you for your comment. The committee highlighted the concerns regarding the NHS reference costs for dialysis during development and this was investigated and discussed in detail. These considerations are documented in Chapter B. We also explored whether there were other options to obtain more accurate cost estimates including consulting with representatives of the clinical reference group and it was agreed there was no better option at this time. No better up to date information has been provided at consultation. The unit cost section in Chapter B has been edited to ensure the concerns and uncertainties regarding the NHS reference cost data are clear and some additional considerations have been added to Chapter B based on stakeholder's comments. This includes more discussion about the organisation level data and variation. Note however that variation between trusts does not necessary indicate a problem with data reporting. It could indicate genuine variability in costs e.g. due to local factors such as volume or geography. The committee took into account

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					uncertainties in costs and cost effectiveness when making recommendations and this is described in Section 1.10 The committee's discussion of the evidence. This has also been edited to ensure uncertainties are clear.
Baxter Healthcare Ltd.	Evidence Review B	44	24	The unit costs presented in the Draft Guidelines show that the cost of PD (APD, CAPD and assisted APD) exceeds the cost of in-centre HD. These costs have been derived from Reference Costs which do not indicate the true cost of providing renal services and have several limitations. Limitations include variations in the reporting of reference costs by Trusts due to the inconsistent cost allocation practices, variability in the counting and coding of renal clinical activity and the complexities of the cost structures, which include a high proportion of fixed or semi-fixed cost that are not easily attributable to individual activities or patients. Although the GDG has excluded the publication by Baboolal (2008) due to there being no usable outcomes, the top down costing methodology used in the publication may provide a more accurate reflection of the cost of dialysis. As stated in the General Comments section, considering the overwhelming body of evidence globally, we would strongly urge NICE to acknowledge that PD is a more cost-effective therapy than HD	Thank you for your comment. The committee highlighted the concerns regarding the NHS reference costs for dialysis during development and this was investigated and discussed in detail. These considerations are documented in Chapter B. We also explored whether there were other options to obtain more accurate cost estimates including consulting with representatives of the clinical reference group and it was agreed there was no better option at this time. No better up to date information has been provided at consultation. The unit cost section in Chapter B has been edited to ensure the concerns and uncertainties regarding the NHS reference cost data are clear and some additional considerations have been added to Chapter B based on stakeholder's comments. The committee took into account uncertainties in costs and cost effectiveness when making recommendations and this is described in Section 1.10 The committee's discussion of the evidence. This has also been edited to ensure uncertainties are clear. Regarding Baboolal 2008, exclusion based on no usable outcomes was for the clinical evidence review. It was excluded from the economic evidence review because it considered dialysis costs alone from over 10 year ago and so was considered superseded by current NHS reference costs. NICE methodology is to use current NHS reference costs where available. The discrepancy between Baboolal and current costs was considered, however while having some concerns about NHS reference cost data, the committee agreed this was the best estimate of up to date UK costs available. Explicit discussion of this has been added to Chapter B. We have now analysed the average costs of PD and in-centre HD over time in the NHS reference costs and this suggests that they are likely to be in approximate agreement with Baboolal at the time it was published (i.e. supporting a substantial cost

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					difference between PD and HD in favour of PD). However reference costs for PD have increased over time while reference costs for in-centre HD have remained constant. Given this, the committee consider that it may be that the cost of PD has in fact increased relative to HD. However, the NHS reference costs do not provide any information about why this might be. The additional analysis of dialysis costs over time has been added to this section. Given potentially similar costs (acknowledging some uncertainty) and similar outcomes at a population level (acknowledging that individual patients may get greater quality of life benefits with one than the other depending on patient preferences and individual experiences) the committee agreed that there is insufficient evidence to conclude one option is more effective or cost effective than another and patient preferences and clinical considerations should drive decisions about which to use.
Baxter Healthcare Ltd.	Evidence review B	65	46	The recommendations for research do not include cost comparison of assisted PD although in the evidence review it is stated that "Given the lack of clinical evidence, the higher costs than other dialysis options, and the potential for a substantial resource impact if recommended it was felt that a recommendation could not be made relating to assisted PD." The reference cost exercise hugely under-reported the use of assisted PD with only one renal unit submitting data. In addition, there is a wide body of evidence to support the use of this therapy (please see comment 11). Would the committee please rescind this statement?	Thank you for your comment. The NHS reference costs 2016/17 had data submissions from 39 centres (not 1) for assisted PD. In addition the committee agreed that it is widely acceptedthat assisted PD would be higher cost than PD due to the staffing requirement for providing the assistance. The systematic review of effectiveness data undertaken for the guideline did not identify any studies that met the protocol for this review question. The committee acknowledge that assisted PD is used in the UK currently and consider it to be of value in some circumstances but were unable to make a recommendation that may increase its use without evidence to support a benefit to patients in the context of potentially higher costs. We have revised this paragraph to clarify the committee's views.
Baxter Healthcare Ltd.	General	General	General	Baxter would like to thank NICE for the opportunity to respond to these draft guidelines. We are concerned to see that this new guidance has changed so much from previous NICE publications (TA48, QS5, CG125,	Thank you for your comment. This guidance updates TA48 and CG125. Evidence report B, Modalities of RRT presents the evidence and committee's discussion. In accordance with our methods only RCTs and studies that adjusted for the confounders specified by the committee were included. This is accordance with the current NICE methods

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				CG125 costing report and QS72) without any significant evidence to support these changes. In particular, the evidence base which recommended PD as the preferred first treatment for many groups of patients has now been rejected. We cannot find any evidence that would suggest the guidance provided in CG125 is no longer valid. On the contrary, in the comments below, we refer to substantial evidence supporting the use of PD as a first treatment for its clinical and quality-of-life benefits to patients, and because it is more cost-effective than in-centre HD. We are also concerned that the evidence base which has been considered to recommend HDF above HD is no more robust than the evidence rejected to support widespread use of home dialysis therapies. Please could NICE reconsider these guidelines in their entirety in the context of all previous guidelines and national clinically evidenced initiatives such as Kidney Quality Improvement Partnership (KQuIP).	(https://www.nice.org.uk/Media/Default/About/what-we-do/our-programmes/developing-NICE-guidelines-the-manual.pdf). The evidence base therefore does differ to that of TA48 and CG125. Overall, there were no clinically important differences reported for HD vs PD or home therapies versus in-centre. The committee made a consensus based recommendation for PD to be offered as a first choice treatment modality for children 2 years old or younger. This is in accordance with current practice and due toconcerns about technical difficulties of haemodialysis in very young children. Very limited evidence that showed no difference was found for people with residual renal function and no evidence was found for people with comorbidities. The guideline committee felt that in the absence of evidence they could not make consensus based recommendations for these groups because current practice is so variable. Evidence of clinically important differences were reported for HDF compared to HD but not for HD vs PD or home HD versus in-centre HD. The committee noted that there are other considerations in recommending home or in-centre dialysis. Based on their experience, the committee noted that some people gained a benefit to their quality of life and ability to continue with their usual daily activities when performing dialysis at home. However the committee also noted that for some people who are unable to manage their own dialysis at home or who are particularly concerned about potential adverse effects of dialysis, dialysis at home may have additional risks.
Baxter Healthcare Ltd.	General	General	General	**Which areas will have the biggest impact on practice and be challenging to implement? Please say for whom and why.** The recommendation to offer HDF for all patients is likely to have a significant impact on clinical practice. Data from the 3 studies included in the evidence review (CONTRAST, Turkish HDF study and ESHOL) when pooled, demonstrate a survival benefit in the study populations. However, these study data	Thank you for your comment. The committee considered the role of convection volume and this is discussed in the discussion section of the review. More information has been added to this section on volume. In brief the committee agree that people are more likely to see a greater benefit of HDF over HD at higher convection volumes but that the evidence is not strong enough to support definitive thresholds at which the benefit does or does not exist. **However, following consultation this recommendation has been weakened from an 'Offer' to a 'Consider' recommendation** Overall, there were no clinically important differences reported for HD vs PD or home therapies versus in-centre. The

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				also indicate that a convective volume greater than 23 litres per treatment is required to convey survival advantage. To achieve this, blood flow rates greater than 350mls/min over a 4-hour dialysis period are required as a minimum. There is evidence to say most patients are unable to achieve such high blood flow rates, and we would estimate that with an increasing aging cohort of patients in addition to those who have diabetes and vascular access challenges, this will continue to be a challenge for the vast majority of patients. With the future projected growth in renal dialysis and pressure on hospital infrastructure and staffing, the capital and staff required for a sustained growth in in-centre (and satellite) dialysis does not exist. This will make these guidelines challenging to implement. The policy for care closer at home clearly set out in the 5 Year Forward View and the current national focus on increasing the number of patients having a home-based dialysis therapy further support the need for home dialysis to be made available for this growing population.	committee made a consensus based recommendation The committee have made recommendations that all people should be offered the choice of home or in centre RRT. The committee agree home treatment should be an option for people if possible but do not feel there are grounds to strongly direct people towards home treatment if this is not their decision.
Baxter Healthcare Ltd.	General	General	General	**Would implementation of any of the draft recommendations have significant cost implications?** Not considering PD as a first therapy, as recommended for the specific patient groups outlined in NICE CG125 (2011), will have a significant cost impact. There is overwhelming evidence from the UK and around the world that PD is more cost effective than in-centre HD, including examples of where a PD first policy has led to significant cost savings. Liu et al 2013. Peritoneal Dialysis International. Vol. 36 P406-420	The committee considered that current practice is to offer a choice of PD and HD and given this is what is recommended this is not expected to change practice or have a substantial resource impact to the NHS. Although they acknowledge that uptake of different modalities varies considerably between centres. While we accept that the literature has largely reported that PD has been lower cost than HD, most recent UK reference cost data suggests that PD and HD are now much more similar in cost with cost having increased year on year for PD whilst HD costs have remained constant. Discussion of this issue and this analysis of costs over time has been added to Chapter B. Previous cost effectiveness analyses in this area are generally based on observational effectiveness data that did not meet the minimum adjustment criteria agreed for the guideline review. They have therefore not been included in the guideline. They

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				Liu et al 2015. Nephrol Dial Transplant 30: 1726–1734 Karopardi et al 2013. Nephrology Dial Transplantation. 28 (10): 2553-69. Karopardi et al "found that the cost of HD was between 1.25 and 2.35 times the cost of PD in 22 countries (17 developed and 5 developing)." Additionally, out of 20 developed countries researched, HD is significantly more expensive than PD in 85% / 17 countries (including UK, Canada, Italy, France, Spain); similar costs for 10% / 2 countries; and cheaper in only 1 developed country. Several NICE publications are in alignment that PD is more cost-effective than HD, including NICE CG125. NICE CG125, regarded HD as the most expensive form of dialysis and concluded that increasing the use of PD would be a cost effective and cost saving policy for the NHS. Recommending HDF over HD for all patients will have significant cost impact as HDF is associated with higher costs and an ICER of £59,633 per QALY. There would also be a significant resource impact due to the need for some centres to purchase new or additional HDF capable dialysis machines, purchase and annual maintenance of specialised water treatment systems, training of nurses and the requirement for larger dialysers.	are also not based on current UK costs. We agree implementation of HDF could have a substantial resource impact to the NHS in England as stated in the consultation version of the guideline. However, following consultation this recommendation has been weakened from an 'Offer' to a 'Consider' recommendation. Unlike for stronger recommendations stating that interventions should be adopted, it is not possible to make a judgement about the potential resource impact to the NHS of recommendations regarding interventions that could be used, as uptake is too difficult to predict.
Baxter Healthcare Ltd.	General	General	General	**What would help users overcome any challenges? (For example, existing practical resources or national initiatives, or examples of good practice.)** The draft guidelines as they are currently set out do not reflect the three KQuIP priority projects focus on improving access to kidney transplantation, improving access to home dialysis for	Thank you for your comment. The guideline committee consider that these guidelines do reflect the KQUIP priority projects. There are recommendations to offer pre-emptive transplant as a first line option, home therapies are offered alongside other treatment options with the person and the carer given the option to choose in the context of shared decision making. Dialysis at home is supported by these recommendations as it is implicit in offering such a choice that home dialysis facilities would need to be readily available. The

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				suitable patients and developing best practice for permanent dialysis vascular access. Users would be able to overcome implementation challenges by clear NICE guidance that reflects these initiatives. In addition, there are other ongoing National initiatives that aim to support and reduce variation in clinical practice such as NHS Right Care Scenario "The Variation between Sub-Optimal and Optimal pathways; Abdul's story Progressive Chronic Kidney Disease" (January 2018) and the soon to be launched Get It Right First Time Nephrology Programme (GIRFT) which have been produced by the renal community for the renal community to improve people's health and add value. These initiatives advocate best practice with regards to home based dialysis therapies and transplantation, in line with previous NICE guidance.	best option for established permanent dialysis vascular access was outside of the scope of this guideline. We do however make recommendations on planning dialysis access formation. The guideline committee were aware of the National initiatives you suggest.
Baxter Healthcare Ltd.	General	General	General	**We would like feedback on whether the term dialysis via vascular access is acceptable as an umbrella term to refer to both HD and HDF.** Whilst the term may be acceptable as a catch all for HD and HDF, it fails to distinguish between permanent and temporary vascular access and may cause confusion. Clinically, it is important to distinguish between temporary and permanent vascular access as it has been demonstrated that permanent access is superior and has fewer complications. Please see additional comment relating to this (Comment number 13)	Thank you for your comment. To avoid confusion we have changed from 'vascular access' to HD/HDF'
Baxter Healthcare Ltd.	Short Guideline	3	5	We do not agree with the recommendation to "Consider starting dialysis at an estimated glomerular filtration rate (eGFR) of around 5 to 7 ml/min/1.73 m^2, or earlier if indicated by the impact of symptoms of uraemia on daily living, biochemical measures or uncontrollable fluid overload." This	Thank you for your comment. The recommendations reflect the findings of the IDEAL study in that people started dialysis due to symptoms or when their eGFR reach 5-7 ml/min/1.73m^2. The eGFR at which the majority of people start dialysis is therefore going to be higher than that used in the IDEAL study or in the recommendation. We have edited the recommendation to make it clear that eGFR should be used in the absence of symptoms. This recommendation should be considered in conjunction with

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				does not reflect current practice – the latest Renal Registry Report (2016) states that "The mean eGFR at the start of RRT was 8.5ml/min/ 1.73 m^2 similar to the previous five years." A significant finding of the IDEAL study, used in the evidence review, is that 75.9% of the patients randomized to late start were started earlier because it was not clinically possible to delay the start. Please would NICE consider revising this guidance with the recommendation to start dialysis at an eGFR of 8.5 ml/min/1.73 m^2, or earlier if indicated by the impact of symptoms of uraemia on daily living, biochemical measures or uncontrollable fluid overload." It is also important to add that the requirement to start RRT urgently, which is more likely to occur if patients present with symptoms before their eGFR has reached the target range, may result in patients starting dialysis with temporary vascular access which is associated with an increased risk of infection. In 2011, NHS England implemented a Best Practice Tariff to promote and incentivise the use of permanent vascular access at 80%. Currently, the draft RRT guidelines do not support this recognised clinical practice.	the one of when to start the assessment for RRT or conservative management. Combined these recommendations should limit the number of people who start dialysis in an unplanned way. We have also made recommendations on when to create vascular access (to also avoid unplanned starts). Technical aspects of access formation were outside of the scope of this guideline.
Baxter Healthcare Ltd.	Short Guideline	5	14	We agree that people (and their family members or carers, as appropriate) should be offered regular opportunities to review decisions regarding RRT modality and discuss any concerns or changes in their preferences. Would the committee be able to recommend a minimum frequency that these reviews should take place? This could perhaps be scheduled at each clinic review.	Thank you for your comment. When to discuss choices, preferences and concerns should be tailored to the individual and would be influenced by a number of factors.
Baxter Healthcare Ltd.	Short Guideline	6	12	The shift away from previous NICE Guideline (CG125) which previously recommended PD as the first choice for many	Thank you for your comment. This guidance updates CG125. Evidence report B, Modalities of RRT presents the evidence and committee's discussion. In accordance with our methods

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				groups rather than purely for children under 2 years is a concern. There is no new evidence which supports a change to the guidance. However, we have identified the following recently published evidence which supports the use of PD as a first modality from a clinical perspective. Kumar, V. A. et al. Kidney Int 2014. 86; 5; 1016-22 Tang. et al. Blood Purif 2016; 42:170–176 Table 1 in the following publication supports the use of PD as a strategy to preserve residual renal function Nongnuch et al Clin Kidney J. 2015 Apr;8(2):202-11 In addition to the clinical benefits of PD to patients highlighted here, please refer to comment 3, where we have shared the significant body of evidence in support of PD as a more cost-effective therapy than HD. These recent data reinforce conclusions about the clinical and economic advantages of PD that were supported in previous studies already reviewed by NICE. We therefore urge NICE to consider peritoneal dialysis as the first choice of treatment modality for: - children 2 years old or younger - people with residual renal function - adults without significant associated comorbidities as previously recommended in CG125.	only RCTs and studies that adjusted for the confounders specified by the committee were included. This is inaccordance with NICE methods . The evidence base therefore does differ to that of CG125. Overall, there were no clinically important differences reported for HD vs PD and home therapies versus in-centre. The committee made a consensus based recommendation for PD to be offered as a first choice treatment modality for children 2 years old or younger. This is in accordance with current practiceand due to concerns about technical difficulties of haemodialysis in very young children. Evidence showed no difference for people with residual renal function and no evidence was found for people with comorbidities because current practice is so variable. The guideline committee felt that in the absence of evidence they could not make consensus based recommendations for these groups. The evidence you reference did not meet the protocol for this review.
Baxter Healthcare Ltd.	Short Guideline	6	14	The draft guidelines state that all people opting for PD should be offered a choice of CAPD or APD if this is medically	Thank you for your comment. The reference you identified did not meet the criteria for inclusion in the evidence review. Given the lack of clinical evidence, the higher costs than other dialysis options, and the potential for a substantial resource impact if

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				appropriate. It is stated by the committee that there was no difference between the two modalities. However, the EAPOS study (Brown et al. 2003 J Am Soc Nephrol 14: 2948–2957) and Johnson et al. Nephrol Dial Transplant. 2010; 25:1973-1979 highlight the benefits of APD in patients with high (fast) transport membranes. APD also facilitates use of PD in frail elderly patients who require assistance to perform the therapy (please see next comment 11). We agree that patients should be offered a choice between the two sub therapies, and suggest NICE includes the importance of prescription management and availability of home assistance when selecting dialysis modality.	recommended it was felt that a recommendation could not be made relating to assisted PD. Assisted PD is discussed as an option for people who have chosen home therapies in evidence report B, Modalities of RRT.
Baxter Healthcare Ltd.	Short Guideline	6	14	We are concerned that assisted PD has been omitted from the available Peritoneal Dialysis therapy options. Many patients utilise this treatment as a temporary measure when they first start their therapy at home. This can be to help with the transition to self-care, to provide support to nervous patients, or to enable patients to go home before training has been fully completed. Assisted PD is flexible and can be used daily, or just a few times a week, with frequency of assistance being reduced as the patient gains more confidence with the therapy. In some cases, it is used as a permanent measure. Assisted PD is a nationally recognised therapy option by NHS Improvement and NHS England and has an associated HRG. The following publications demonstrate the widespread use and value of assisted PD well;	Thank you for your comment. Given the lack of clinical evidence, the higher costs than other dialysis options, and the potential for a substantial resource impact if recommended it was felt that a recommendation could not be made relating to assisted PD. The publications you reference did not meet the protocol for the relevant reviews because of their study design (a review, a cross-sectional study, a cohort study without adequate adjustment for key confounders identified by the committee). Assisted PD is discussed as an option for people who have chosen home therapies in evidence report B, Modalities of RRT.

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				Iyasere et al. Clin J Am Soc Nephrol 11: 2015. doi: 10.2215/CJN.01050115 Bevilacqua et al. Perit Dial Int 2017; 37(3):307–313 Béchade Peritoneal Dialysis International, 2015; Vol. 35, pp. 663–666 Bechade noted "In the present review, we describe the programs for assisted peritoneal dialysis (PD) in France and Denmark, respectively. In both nations, assisted PD is totally publicly funded, and the cost of assisted PD is comparable to the cost of in-centre HD." The Renal Association Clinical Practice Guidelines (PD in Adults and Children June 2017 (1.1.4)) which are accredited by NICE recommend that assisted PD should be available to patients wishing to have home dialysis treatment but are unable to perform self-care PD, including as a temporary measure where a patient who is, or will become, independent is unable to perform PD alone (1c). As there is an increasing frail elderly population that may benefit from some assistance now being accepted for RRT, would the committee consider adding this important option to the available recommendations?	
Baxter Healthcare Ltd.	Short Guideline	6	18	We agree with the committee that the available study data communicates a survival benefit of HDF over HD. However, we have concerns over how this data is translated to the recommendation to offer HDF rather than HD. The only difference between HDF and HD is the greater clearance by HDF of uremic toxins, in particular, of	Thank you for your comment. The committee considered the role of convection volume and this is discussed in the discussion section of the review. More information has been added to this section on volume. In brief the committee agree that people are more likely to see a greater benefit of HDF over HD at higher convection volumes but that the evidence is not strong enough to support definitive thresholds at which the benefit does or does not exist.

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				conventional middle molecules, those molecules between 15 kDa and 24.9kDa. Other treatment characteristics that used to be assigned to HDF - synthetic membrane, ultrapure dialysis fluid, cooling of blood, different sodium transport – are achievable by HD. The clinical relevance of larger middle molecules, those > 25kDa, was recently reviewed by Wolley et al (Clin J Am Soc Nephrol 2018; 13(5):805-814) The RCT study data on HDF versus HD does not apply to the general HD population. The study data indicates that a convective volume greater than 23 litres per session is required to convey survival advantage. A recent study from the UK showed an average convective volume of 17 litres per session (Davenport A. Artif Org 2016;40:1121-1127). To achieve a convective volume of 23 litres per session, blood flow rates greater than 350 mls/min, access by a native AV fistula rather than by catheter or graft, and a large membrane surface area are required. (Marcelli D et al. Int J Artif Org 2015;38:244-50). Only 50% of HDF patients in European centres received an infusion volume >20 litres per session (corresponding to a convective volume >22 L). In the UK, that percentage was even lower (Locatelli F et al. Nephrol Dial Transplant 2018;33:683-689). In this observational study the authors found no evidence of a survival benefit of HDF, whether analysing by patient or by facility. Recent innovations in membrane technology address the difference between HDF and HD, the removal of larger middle	Based on the feedback during the consultation process the committee have agreed to weaken the recommendation for HDF in centre from a strong offer recommendation to a weaker consider recommendation. The committee agree that there is some uncertainty in the evidence, but overall consider that it is strong enough to support a consider recommendation to use HDF over HD when done in centre.

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				molecules (>25 kDa) while maintaining albumin at safe levels (Ronco C and Clark WR, Nat Rev Nephrol. 2018 May 5. doi: 10.1038/s41581-018-0002-x). Controlled clinical performance comparisons show that use of such membranes resulted in effective removal of both conventional and larger middle molecules, at least equivalent to that achieved by HDF but using standard HD equipment with normal blood flow rate (Kirsch AH et al. Nephrol Dial Transplant. 2017;32:165-172). Would the committee consider revising the guideline to remove the recommendation for HDF above HD?	
Baxter Healthcare Ltd.	Short Guideline	6	21	Previous NICE publications have recommended the use, where possible, of permanent dialysis access (either via PD catheter or fistula). The recently published NICE RRT Quality Standard (QS72 2014) Statement 4 says "Adults with established kidney failure who are starting planned dialysis have a functioning arteriovenous fistula or peritoneal dialysis catheter." This was repeated in the CKD Quality Standards (QS5) which were updated in 2017 in Quality Statement 13 "People with established kidney failure start dialysis with a functioning arteriovenous fistula or peritoneal dialysis catheter in situ." The rationale for recommending the use of permanent vascular access was stated as being driven by NHS Indicators for Quality Improvement (IQI) LT28: Rate of MRSA bacteraemia in patients in established renal failure by renal centre, per 100 prevalent patients. In addition to the quality standard a Best Practice Tariff (BPT)	Thank you for your comment. Technical aspects of access formation were outside of the scope of this guideline.

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				has been in operation in England for >5years to promote the use of permanent over temporary vascular access. Rates of MRSA amongst renal patients have reduced dramatically since the implementation of the BPT and the RRT quality standards. This guidance is further supported by the current KQuIP "MAGIC" programme which aims to improve promote and improve permanent vascular access (arteriovenous fistula or graft) Would the committee consider reinstating this recommendation to prevent an increase in infections?	
Baxter Healthcare Ltd.	Short Guideline	11	1	We agree with the statement that information should be given to patients about how treatment will affect their lifestyle. In particular, the statement that recommends talking to patients about how much time and travel their treatment or training will involve. In the RRT Quality Standards 2014, Statement 6 states that "Adults using transport services to attend for dialysis are collected from home within 30 minutes of the allotted time and collected to return home within 30 minutes of finishing dialysis." Would the committee consider including this standard as a guideline for patients to be aware of before making their choice of treatment?	Thank you for your comment. The committee acknowledge that time to collect people for dialysis is very important but this was not the focus of the evidence review and we are therefore unable to make any recommendations on it.
Baxter Healthcare Ltd.	Short Guideline	11	6	The statement "Discuss with people which treatment options are available to them and explain why any options are inappropriate or not advised" We fully support the concept of shared decision making which	Thank you for your comment. We have edited this recommendation to 'may be inappropriate'. The purpose of this statement it to ensure that all of the forms of RRT or conservative management are discussed and reasons given if any are not suitable. It does not support the restriction of options to the individuals.

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				we assume is the intent of this statement. We are concerned that the wording of this statement allows clinicians to rule out therapies based on their own bias. We suggest rewording this statement. A prospective evaluation of renal replacement therapy modality eligibility published in 2009 by Mendelssohn et al. (Nephrol Dial Transplant (2009) 24: 555–561) concluded that "Overall eligibility for HD was 94.6%, for PD was 78% and for transplant 53%." This study did not consider the use of assisted therapies to enable more patients to have their therapy at home. It is therefore likely that almost all patients would be suitable for either PD or HD with very few being excluded from an informed choice.	
Baxter Healthcare Ltd.	Short Guideline	12	7	The guideline appears to recommend the formation of a fistula 6 months before the start of dialysis. There is a lack of evidence to support this early intervention. In fact, creating vascular access before a proper informed decision making process has been completed may prevent or deter patients from starting PD as a first therapy and experiencing the benefits that this therapy offers. Would the guideline committee consider reducing this time frame to a maximum of 3 months prior to anticipated start of dialysis, as suggested in the evidence (page 22 line12 of the draft guidance)?	Thank you for your comment. The recommendation is supported by the evidence which is presented in evidence report D planning for RRT. The recommendations in support of shared decision making and also the recommendation to start assessment for RRT or conservative management a year in advance on when it may be required should ensure that where possible people start on their preferred choice. Overall the evidence suggested that the minimum desired time from vascular access creation to initiation of dialysis would be 3-6 months. In the experience of the guideline committee a time frame of six months is required to allow for the possibility of failure and for further interventions to be carried out.
Baxter Healthcare Ltd.	Short Guideline	15	12	The rationale for later start dialysis is explained in the draft guideline in the following statement "… there was evidence that starting at an eGFR of 5 to 7 ml/min per 1.73 m2 was cost saving compared with an earlier start." Although a later start to dialysis may save initial dialysis costs,	This statement is based on the results of a published economic evaluation alongside the RCT used to inform the review of effectiveness comparing an earlier and a later initiation strategy. This study had follow-up up to 8 years with a median of 4.1 years in each arm. It incorporated various costs components including dialysis, transportation for dialysis, hospital admissions, non-admitted hospital treatment, out-of-hospital visits to physicians and other health professionals, investigations, pharmaceuticals. This statement has therefore not been amended.

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				the overall costs per patient may well increase as a result of the requirement for hospitalisation, symptom control or the need for urgent start dialysis. This is highlighted in the NHS Right Care Scenario where the cost difference between the sub-optimal and optimal pathway is driven by the difference in acute care costs. Given the likely negative impact on clinical outcomes from a late start (described in our comment 13 below) along with the potential for increased costs, we would strongly urge NICE to rescind this statement.	
Baxter Healthcare Ltd.	Short Guideline	19	24	We are concerned that the following recommendation may deter patients from being offered home haemodialysis. "There was no evidence to suggest clear differences between home and in-centre (hospital or satellite unit) dialysis via vascular access. Dialysis costs were lower at home, although home dialysis is not suitable for many people." There is no evidence to support the statement that many people are not suitable for home haemodialysis, and this is reflected in the huge variation of uptake of home dialysis both in the UK and globally. As the UK BASIC-HHD study (Jayant et al. Nephron 2017;136:62-74.) concluded "*Centre"* effect accounts for variation in home HD prevalence between renal units after accounting for sociodemographic parameters and co-morbidities. Unit practices and attitudes to home HD are likely to have a dominating impact on home HD prevalence rates…" So, arguing that many people are not suitable for home haemodialysis may well increase non-medical barriers in low adoption renal units.	Thank you for your comment. We have deleted the text 'although home dialysis is not suitable for many people'. The studies you reference did not meet the protocol for the relevant reviews and so have not been added.

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				There is also growing evidence to suggest that the use of intermittent HD, with a regular 2-day gap is associated with increased morbidity and mortality. Foley RN, Gilbertson DT, Murray T, Collins AJ 2011 N Engl J Med 365: 1099- 1107. Fotheringham et al. Kidney International. 2015 doi:10.1038/ki.2015.141 Rhee et al. Kidney Int. 2015 Sep; 88(3): 442–444. When haemodialysis is performed at home, there is much greater flexibility for patients to do more frequent treatments therefore avoiding the 2-day gap. Please could the guidelines development group consider reviewing this evidence?	
Baxter Healthcare Ltd.	Short Guideline	20	8	There is additional evidence comparing dialysis via vascular access and PD access as an initial therapy for people who start dialysis in an unplanned way. There is evidence to support PD being a more cost-effective alternative, with fewer complications, for unplanned patients compared to HD using temporary vascular access. Jin et al. 2016 PLoS One 11; 11; e0166181 Povlsen et al Nephrol Dial Transplant (2006) 21 [Suppl 2]: ii56–ii59 Povlsen et al Perit Dial Int 2015; 35(6):622–624 The Renal Association Clinical Practice Guidelines (PD in Adults and Children June 2017 (2.1 Preparation for PD)) which are accredited by NICE recommend "Fast track education and urgent PD catheter insertion with acute start of PD should be	Thank you for your comment. Unfortunately none of the studies you highlight meet the protocol for this review or the threshold for the quality of evidence required for the committee to make recommendations in this area. The committee made research recommendations to address this point.

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				available, and be offered to suitable patients urgently starting on RRT who wish to avoid temporary haemodialysis, with the associated negative aspects of temporary vascular access and disruption to their lives. (1C)." This is more likely to occur through the use of percutaneous rather than surgical catheter insertion technique. We would recommend NICE recognises that PD is a clinically and cost effective therapy for patients who have an unplanned start on dialysis.	
Baxter Healthcare Ltd.	Short Guideline	20	19	We do not agree with the statement that there is no evidence to recommend any particular sequence of RRT modality. PD has consistently been shown to be the most cost-effective dialysis modality in numerous global publications (see comment 3) and should be considered as the first option for certain groups of patients as previously recommended in NICE CG125.	Thank you for your comment. Very limited evidence was found for transplant after PD versus transplant after HD. No clinically important differences were reported. The committee were therefore unable to make any recommendations. The committee has made a research recommendation on 'What is the clinical and cost effectiveness of haemodialysis/haemodiafiltration before PD versus PD before haemodialysis/haemodiafiltration?' The review of the evidence for the guideline did not come to the conclusion that PD was necessarily more effective or cost-effective than other options and the committee agreed patients should be able to choose between options. The evidence considered and the committee's interpretation are outlined in full in Chapter B.
Baxter Healthcare Ltd.	Short Guideline	20	25	The statement that any additional costs of greater utilisation of HDF may be partly offset by reduced use of erythropoietin stimulating agent (ESA) does not take into consideration the reduced doses required by patient having PD compared to HD as evidenced by the latest Renal Registry Report and additional publication detailed below Ford et al. UK Renal Registry Report 2016 Nephron 2017;137(suppl1):165–188 Duong, et al: Am J Nephrol. 2012, 35: 198-208.	Thank you for your comment. This statement relates to the recommendation for HDF over HD in people who have chosen dialysis via vascular access. Therefore consideration of ESA use in PD patient is not a relevant consideration here.

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Beat Kidney Stones	General	General	General	this Charity is going to comment on the Renal Ureteric Stone: Assessment & Management consultation.	Thank you for your comment.
Betsi Cadwaladr University Health Board	Short Guideline	General	General	I feel the umbrella term vascular access is confusing as it implies purely access using the vasculature I feel the term simply access would be more appropriate	Thank you for your comment. We have amended this to HD/HDF.
Betsi Cadwaladr University Health Board	Short Guideline	6	2	I am concerned that this recommendation excludes the placing of peritoneal catheters using the Moncrieff method , where catheters can be inserted a number of months before they are required for dialysis	Thank you for your comment. These recommendations are only intended to cover access created in a single operation and do not cover which alternative types of access are appropriate (which are outside of the scope of this guideline). Text to this effect has been added to the discussion section of the relevant evidence review.
British Association of Critical Care Nurses	Short Guideline	General	General	The BACCN welcome this guideline We have nil else to add	Thank you for your comment.
British Dietetic Association - Renal Nutrition Group	General	General	General	General comments; several responders noted that NICE stated lack of evidence in many areas of the guidelines. Did NICE look to see who was providing usual care in many of the RCTs they reviewed – it was probably dietitians. When writing guidelines for best practice NICE need to consider audits such as the one done by the RNG Outcome group as this is what shows how best practice is most effectively applied - not research. The RNG outcomes group showed a high % achieved desired outcomes - biochemical, nutritional and behavioural change measures.	Thank you for your comment. The specific healthcare professionals involved in the RCTs reviewed varied. The recommendations reflect current practice in terms of who should carry out assessments. A full discussion of the evidence is in evidence report I Diet and fluids. The committee recognised the importance of areas of research like the RNG's outcome group, however in order to make specific, strong recommendations for consistent practice across the NHS – relatively high thresholds for quality of evidence (in terms of its specificity) are required, these are typically either RCTs or at least non-randomised cohort studies that adequately adjust for potential key confounders.
British Dietetic Association - Renal Nutrition Group	Short Guideline	2	11	Instead of diet and fluid can we change the title to Nutrition and Fluid	Thank you for your comment. We have used the term diet to be consistent with the NICE guideline on Chronic kidney disease (stage 4 or 5): management of hyperphosphataemia (CG157).
British Dietetic Association - Renal Nutrition	Short Guideline	3	7	Next to 'biochemical measures' add (**such as Hyperkalaemia**)	Thank you for your comment. We are unable to include all of the relevant examples in the recommendation but we have added your suggestion to the committees discussion of the evidence in evidence report A starting RRT

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British Dietetic Association - Renal Nutrition Group	Short Guideline	4	10	Next to clinical preparation add (**including nutritional assessment**). A general comment was also made which is applicable to this point; Is it possible to refer to CG182 (sections 1.4.3 to 1.4.8 and also CG157 NICE guidelines about education pre dialysis including dietary approach? I think early education prior initiation of RRT is important for patients. So when a patient starts RRT he/she will not be overwhelmed with dietary information (Na, fluid, K, Ph !!) and will be aware of at least some of the dietary modification that he/she will need to follow. The Renal Nutrition Group would be happy to conduct a survey of its members to correctly ascertain the current level of input and support to this group of patients.	Thank you for your comment. Dietary assessment is covered under the heading 'Diet and fluids'. We now cross refer to CG182 in evidence report F how to assess. Thank you for offering to conduct a survey but this is not required in order for the guideline committee to make the recommendations.
British Dietetic Association - Renal Nutrition Group	Short Guideline	5	6	Should it be specified that as well as discussions with the medical/ MDT team, visits to other patients, and units should be organised to ensure an informed choice?	Thank you for your comment. We now refer to this in the committee's discussion of the evidence in evidence report K Information and support.
British Dietetic Association - Renal Nutrition Group	Short Guideline	6	6	BMI above 30kg/m^2 (**kg/m^2** missing). Should this statement mention encouraging people to lose weight or to have a dietetic referral?	Thank you for your suggestion. This recommendation has been edited. We have added your suggestion to the committee's discussion of the evidence report B, Modalities of RRT.
British Dietetic Association - Renal Nutrition Group	Short Guideline	7	18	One responder said: in our unit we stop PD after 5 years and our rate of EPS is down to zero since we changed practice. I note that NICE said there was no evidence to suggest that modality should be changed to prevent EPS	Thank you for your comment. In the experience of the committee there is no need to switch from PD after a specific period of time. No evidence was identified on this topic.
British Dietetic Association - Renal Nutrition Group	Short Guideline	8	5-6	Please can we add **taste changes/poor appetite** (I think there a lot of evidence to support this)	Thank you for your comment. We have added your suggestions to the table.
British Dietetic Association - Renal Nutrition Group	Short Guideline	9	5	Change title to **Nutrition and Fluids**	Thank you for your comment. The focus of the evidence review was dietary management and the term 'diet' was used in the studies included in the evidence review.

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British Dietetic Association - Renal Nutrition Group	Short Guideline	9	6	Offer full dietary assessment by a specialist renal dietitian to people starting dialysis or conservative management. Should this say "Offer full dietary assessment by a specialist renal dietitian to people starting RRT (as this includes both dialysis and Transplant as the guidelines are for RRT) or conservative management? Also the term "offer" suggests that this is optional and should be changed to "provide". (The choice of words can make a huge difference to services provisions when discussing service provision with CCG). N.B the guidelines 5.2 from NHS England : https://www.england.nhs.uk/commissioning/spec-services/npc-crg/group-a/a06/ state that the patients nutritional status should be assessed and the best qualified person to do this is the dietitian	Thank you for your comment. Given the lack of evidence as well as the potential for resource impact these recommendations were based around current practice. It was considered current practice for dietary advice to be given after transplantation although who provided this advice varied and may not be a specialist renal dietician. In the absence of evidence and the potential resource impact a recommendation on the assessment of people on conservative management could not be made. The term 'offer' is used to convey they people have the choice as to whether to participate and is consistent with NICE terminology.
British Dietetic Association - Renal Nutrition Group	Short Guideline	9	8	add : **Assessment of nutritional status including weight history**, **lifestyle, medications and any other medical conditions.** **diabetes management**, change sodium to salt, **add fibre** and next to micronutrients in brackets add (**vitamins and minerals**).	Thank you for your comment. We have added weight history, vitamins and minerals to the recommendation. We have added the other suggestions to the committee's discussion of the evidence. Sodium is the correct term.
British Dietetic Association - Renal Nutrition Group	Short Guideline	9	17	Add 'to biochemical measures indicate' – **or body composition measures (weight gain or unintentional weight loss or indication from body composition monitoring eg Bioimpedance)** There is no information of how often patient should be seen although NICE state that there was no evidence there are guidelines for best practice. The EBPG clearly state a minimum of every 6 months if patients are stable. Also in addition to this guide we have standards from NHS England: I think these standards should be mentioned here.	Thank you for your comment. We have added body composition measures to the recommendation and the examples to the committee's discussion of the evidence in evidence report I diet and fluids. In the absence of evidence and the potential resource impact the guideline committee were unable to specify the frequency of re-assessment. In addition, the committee based the frequency of re-assessment around a change in circumstances or an event

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British Dietetic Association - Renal Nutrition Group	Short Guideline	9	23	After 'Provide individualised information add' **taking into account any other therapeutic diet that they require as well as their nutritional status and biochemistry** Another comment was that the following should be added **For those patients who show a consistent trend in unintentional loss of flesh weight, abnormal electrolyte levels or problems with fluid balance; an opportunity to discuss these problems with a renal dietitian should be offered.** The Outcomes document which was written by the RNG shows evidence of the efficacy of reviewing patients by a renal dietitian – it is being put forward for publication	Thank you for your comment. We have added the additional text suggested to the committee's discussion of the evidence in evidence report I diet and fluids.
British Dietetic Association - Renal Nutrition Group	Short Guideline	24	17	change specialist dietitian to specialist renal dietitian	Thank you for your comment. Where appropriate we refer to specialist renal dietician.
British Dietetic Association - Renal Nutrition Group	Short Guideline	24	20	I disagree with this statement : 'They also considered it current practice for dietary advice to be given after transplantation although who provided this advice varied and may not be a specialist renal dietician ' a renal dietitian is needed to tailor relaxation of previous dietary restriction and in my experience patient post-transplant need support with this . I understand the evidence was too limited as described clearly in the text. Most transplant patients will be seen immediately post-transplant while in hospital by a dietitian so this would not result in additional resources as stated in lines 26 – 31. Later follow up of transplant patients post discharge may be variable depending on resources; the Renal Nutrition Group would be happy to conduct a survey of its members to correctly ascertain the current level of input and support to this group of patients. Also dietitian is missing a 't'	Thank you for your comment. The statement reflects the experience of the guideline committee and the survey on dietetic staffing in UK renal units undertaken by the Renal Nutrition Specialist Group. Thank you for offering to conduct a survey but this is not required. We have made the suggested edit.
British Dietetic	Short	25	9	The statement is not clear. 'There is no evidence about low	Thank you for your comment. No evidence was identified that

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Association - Renal Nutrition Group	Guideline			protein diet', can you confirm in what context? Are taking about RRT? Transplant? I think this need clarification	matched the review protocol criteria on low protein diet. Full details can be found in evidence report on diet and fluids (chapter I).
British Dietetic Association - Renal Nutrition Group	Short Guideline	25	13	Add after 'biochemical measures', **or body composition measures indicate**	Thank you for your comment. We have made the suggested edit.
British HIV Association	General	General	General	Prior to treatment all patients should have an HIV test	Thank you for your comment. The topic you suggest was outside of the scope of this guideline
British HIV Association	General	General	General	Careful attention must be paid to potential drug interactions with antiretrovirals	Thank you for your comment. The topic you suggest was outside of the scope of this guideline
British Renal Society	Evidence Review B	1	General	Table 29. There are various ways of delivering HDF which need to be taken into account in outcome comparisons. Earlier studies used off-line HDF rather than on-line HDF (which makes higher dose/ volume HDF possible, but requires production of sterile substitution fluid in each renal unit). Fluid can also be replaced before the filter (pre-dilution) or after the filter (post-dilution). The exclusion criteria do not mention these. It is also now widely believed that the dose/ volume of HDF is critically important, with clinical benefits predominantly seen in patients achieving high-volume HDF. This does not appear to have been considered by the NICE group.	Thank you for your comment. The committee noted the exact method of delivery of intervention for each study but did not consider these to be inclusion/exclusion criteria. Modern machines make sterile substitution fluid on line within the machine using "normal" dialysis water, so no changes need to be made to water treatment in whole dialysis units. The committee considered the role of convection volume and this is discussed in the committee's discussion of the evidence in evidence report B, Modalities of RRT. More information has been added to this section on volume. In brief the committee agree that people are more likely to see a greater benefit of HDF over HD at higher convection volumes but that the evidence is not strong enough to support definitive thresholds at which the benefit does or does not exist.
British Renal Society	Short Guideline	3	5	We agree with the recommendation to initiate dialysis only at GFR 5-7ml/min if there are no other indications and accept that there is good evidence to support this. However, few patients remain well at GFR 5-7ml/min. The recommendation should therefore be framed to acknowledge this. Moreover we are concerned that if people base the timing of preparation for dialysis on the assumption that it will be initiated only when the GFR reaches 5-7ml/min, there will be a lot more unplanned starts. We therefore propose that this recommendation should be balanced with a recommendation that preparation for dialysis should be planned so that people with ESKD are ready to start dialysis once the GFR falls below 10ml/min if this is	Thank you for your comment. The recommendation is clear that people can start dialysis either due to symptoms irrespective of eGFR or due to eGFR. This recommendation should be considered in conjunction with the one of when to start the assessment for RRT or conservative management.

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				required. Dialysis should be started when patients develop symptoms attributable to kidney failure. This usually occurs at an eGFR less than 10 ml/min/1.73 m^2. Initiation should be strongly considered at an eGFR of 5-7 ml/min/1.73 m^2 even in the absence of symptoms.	
British Renal Society	Short Guideline	4	8	To reflect clinical practice counsellor/psychotherapist should be added and we recommend changing this to: Offer assessment by a clinical psychologist clinical practice counsellor, or psychiatrist There needs to be emphasis on the importance of provision of psychological services from all aspects otherwise access to such services will not improve if not strongly recommended There should be something here about mental capacity to make decisions and for those with dementia or Alzheimer's a best interest meeting should be recommended.	Thank you for your comment. As part of the initial assessment for RRT members of the MDT other than psychologists may assess for psychosocial issues and provide support as appropriate. The wording of the recommendation has been changed to reflect this. Further assessment by a clinical psychologist or psychiatrist is only indicated for those people who are considering transplant where complex risk factors have been previously identified in order to plan appropriate support/psychological intervention. These issues are usually complex, and assessment should be carried out a specially trained mental health professional. We now refer to the Mental Capacity Act (2005) in the committee's discussion of the evidence in evidence report B, Modalities of RRT and in evidence report G indicating for switching or stopping RRT or conservative management
British Renal Society	Short Guideline	4	14	Consider assessment by psychologist and or psychiatrist will not enable units to drive forward the need for these services. It mentions neurocognitive issues but not other cognitive issues. There are observational studies on cognitive impairment and ways to monitor in dialysis populations perhaps this should be mentioned somewhere	Thank you for your comment. The evidence review question on this topic did not include monitoring of people who are on dialysis but the committee are aware of this important issue.
British Renal Society	Short Guideline	6	10	Offer a choice of peritoneal dialysis at home or dialysis via vascular access either in centre or at home This statement is too general and need qualification e.g. If circumstances permit offer a choice of peritoneal dialysis at home or haemodialysis either in centre or at home	Thank you for your comment. The committee discussed that it is important that all forms of renal replacement therapy and conservative management are discussed. The recommendations on information, education and support elaborate on this including the need to explain why any of the forms of renal replacement therapy or conservative management are not appropriate.
British Renal Society	Short Guideline	6	12	We would like to ask why the previous guideline CG125 not been mentioned or the same wording used for recommending PD ?	Thank you for your comment. This guidance updates CG125. Evidence report B, Modalities of RRT presents the evidence and committee's discussion. In accordance with our methods only RCTs and studies that adjusted for the confounders specified by the committee were included. This is inaccordance with NICE methods. The evidence base therefore does differ to

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					that of CG125. Overall, there were no clinically important differences reported for HD vs PD and home therapies versus in-centre. The committee made a consensus based recommendation for PD to be offered as a first choice treatment modality for children 2 years old or younger. This is in accordance with current practice and due to for exampleconcerns about technical difficulties of haemodialysis in very young people. Evidence showed no difference for people with residual renal function and no evidence was found for people with comorbidities. The guideline committee felt that in the absence of evidence they could not make consensus based recommendations for these groups
British Renal Society	Short Guideline	6	17	The term "dialysis via vascular access" is not one that is in clinical use and could be misunderstood. The term "haemodialysis" is used universally to refer to dialysis that involves direct filtration of the blood and proposing a new term for this is counterproductive and will not be accepted by the renal community. We strongly recommend that this term should be removed from the guideline. We suggest changing to: Offer a choice of peritoneal dialysis at home or haemodialysis either in centre, satellite unit or at home	Thank you for your comment. To avoid confusion we have replaced the phrase vascular access with HD/HDF.
British Renal Society	Short Guideline	6	17	We strongly disagree with the recommendation to offer HDF in preference to HD. We do not agree that the current evidence supports the clinical effectiveness of HDF over HD or that there is any basis for concluding it is cost-effective. Most of the RCT evidence offered in support of this recommendation is not relevant to current practice. In current practice the predominant delivered form of in-centre HD is high-flux HD. In this form of treatment there is a substantial volume of internal HDF. Hence studies which compare HDF with low-flux HD are not relevant to current practice. In current practice the only economically viable form of HDF is on-line HDF. Many older studies provided substitution fluid from sterile bags – these studies are not relevant. Many of the studies and all but one of the systematic reviews conflate HDF (haemodiafiltration) and HF (haemofiltration) as "convective therapies". This lacks logic. Small solute removal by haemofiltration is inadequate such that the technique was abandoned decades ago as a standard	Thank you for your comment. The committee considered the exact interventions in the trials included in the review. They noted that while some studies did compare HDF with low flux HD, at least half did not and that a subgroup analysis found no impact in reducing heterogeneity by dividing the comparison along those lines. The committee also noted that all of the RCTs included in the review assessed on-line HDF. The committee agreed it was important to focus on HDF as opposed to HF or AFB and hence did not include studies looking at those interventions. The committee were aware that the review came to different conclusions from previous systematic reviews. This is not uncommon and reflects variations in systematic review protocols, terminology and decision making. Based on the feedback during the consultation process the committee have agreed to weaken the recommendation for HDF in centre from

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				treatment for patients with end-stage kidney disease, surviving only in continuous form for treatment of patients with AKI usually in critical care settings. Acetate-free biofiltration is also conflated with HDF but they are different treatments with different risk profiles. The only studies relevant to the choice of HDF and HD in current practice are those comparing on-line HDF and high-flux HD. Moreover, three systematic reviews and meta analyses on this topic have concluded that there was insufficient evidence to recommend the widespread adoption of HDF on the basis of the low quality of the evidence (Wang AY et al. Am J Kidney Dis. 2014 Jun;63(6):968-78; Nistor I et al. Cochrane Database Syst Rev. 2015 May 20;(5); Mostovaya IM et al. Semin Dial. 2014 Mar;27(2):119-27.) We feel that the recommendation to offer HDF in preference to HD would have a major impact on service provision and the evidence to support it is weak at best. There are several clinical trials ongoing (including one in the UK) to answer this question and we urge NICE to wait for this evidence rather than making an ill-judged recommendation that most clinicians will not support. If published this guidance would will imply superiority of HDF over HD and mean that currently funded RCTs in the UK and Europe, designed to generate the evidence we feel is still needed, may have to be terminated early. Indeed, we recommend that a question should be added to the research recommendations to prioritise the evaluation of HDF vs. HD. **Suggested revised recommendation:** Current evidence suggests that high-flux HD and on-line HDF both provide satisfactory renal replacement. Patients who experience significant problems with intradialytic hypotension may benefit from on-line HDF or high-flux HDF with cooled dialysate. There is some evidence that high-volume HDF may reduce mortality risk compared to high-flux HD. Further trials are in progress including H4RT in the UK. Offering suitable patients the opportunity to participate in this study should be strongly considered This recommendation suggests that HDF is only available as a choice if people have vascular access implying a fistula or graft. Again the term vascular access is open to interpretation	a strong offer recommendation to a weaker consider recommendation. The committee agree that there is some uncertainty in the evidence, but overall consider that it is strong enough to support a consider recommendation to use HDF over HD when done in centre. New cost effectiveness analysis was undertaken based on the estimates of effectiveness found in the clinical review and relevant current cost estimates. The committee agreed this supported the use of HDF as cost effective. Based on the feedback during the consultation process, the committee have moved away from the umbrella term you refer to and instead specify HD/HDF where appropriate. The committee have also reviewed the option of home HDF. The committee acknowledge that there are no trials of this option and that there may be greater concerns around water purity. However they also agree that conceptually there is no reason to expect that the benefits of in centre HDF would not be seen at home. The committee were aware of a number of centres currently offering home HDF. Taking all this together the committee chose to recommend either HD or HDF at home.

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				as and may suggest people who are only able to dialyse via a central venous would be excluded from having HDF. We have concerns of HDF being offered at home due to the quality of water. We are concerned that the guideline will recommend HDF for patients on home HD. Not only are the conclusions about the superiority of HDF unfounded, it also fails to recognise the additional risk patients on home HDF are at in terms of bacterial/ endotoxin and chemical contamination. We feel this recommendation is not safe.	
British Renal Society	Short Guideline	6	20	The impact evidence is again comparing different modalities and there are different needs for different age groups and the presence of co-morbidities so approaches to choice of dialysis needs to take this into account and consider supportive options to dialysis modality choice e.g. assisted APD. We suggest all types of PD should be included in this section	Thank you for your comment. Given the lack of clinical evidence, the higher costs than other dialysis options, and the potential for a substantial resource impact if recommended it was felt that a recommendation could not be made relating to assisted PD. Assisted PD is discussed as an option where home therapy is chosen in evidence report B, Modalities of RRT.
British Renal Society	Short Guideline	7	4	The recommendation states 'aim to create' We suggest include plan to create. The availability of vascular surgery is not uniform across the UK. (recent survey from the BRS Vascular Access group) a clearer recommendation would help to improve access to specialist vascular surgeons/elective surgery/ relieve pressure on beds/theatres etc. Should the recommendations more strongly support having an AVF as the "gold standard" and best practice? Offering patients choice to remain on a CVC for those who would benefit and are suitable for more definitive access is likely to cause confusion in practice.	Thank you for your comment. The word 'plan' was used to convey, for example, set date, identify surgeon, medical preparation etc. The recommendation is as clear as it can be given the available evidence and potential resource impact. Technical aspects of access formation were outside of the scope of this guideline.
British Renal Society	Short Guideline	7	13	Please include something in this section regarding patients who are no longer able to consent to treatment e.g. advancing dementia, and reassessing mental capacity.	Thank you for your comment. We now refer to the Mental Capacity Act in the committee's discussion of the evidence in evidence report G indicating for switching or stopping RRT or conservative management.
British Renal	Short	8	5	Suggest different order in psychological/behaviour section:	Thank you for your suggestions. The list is not meant to be

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Society	Guideline			Anxiety, Depression, Mood disturbances/fluctuation (add in phobia's, PTSD-trauma/adjust reactions; relationship issues), Body image concerns, sexual dysfunction	exhaustive and gives the main topics.
British Renal Society	Short Guideline	11	1	In the Information about how treatments may affect lifestyle section we suggest renaming to: Information about how treatments affect lifestyle - psychologically, physically and practically Plus within the table include The person or carer's ability to carry out and adjust treatment themselves Potential adverse effects, their severity management: physical, psychological and social Psychological readiness for transition Reviewing treatment decisions mental capacity Psychological education Ceasing treatment; planning for end of life care - practical and emotional How treatment may affect sexual function *and wellbeing*, fertility and family planning	Thank you for your comment. The table title reflects the main themes identified in the evidence. The content of the table also reflects what was reported in the evidence review.
British Renal Society	Short Guideline	11	3	Suggest rephrasing: Recognise the need for specialist renal Psychological support during the decision-making process regarding RRT or conservative management for the patient and their families/carers	Thank you for your comment. We have edited recommendation 1.2.2 to acknowledge psychological support.
British Renal Society	Short Guideline	13	2	There is little discussion about the role of the multidisciplinary team or dedicated multidisciplinary clinics in preparing people for RRT. We suggest changing to "Provide the person with the contact details of the healthcare professionals responsible for the various aspects of their kidney care" More emphasis needs to be placed on the value of the multi-disciplinary team	Thank you for your comment. No evidence was found on coordination care through MDTs. Due to the potential resource impact no recommendation could be made. The purpose of this recommendation was to ensure that people had the contact details of the person in overall charge of their renal care. This lead health professional is not responsible for coordinating care but should signpost to the most appropriate person to contact.
Cochrane Kidney and Transplant	Short Guideline	6	17	We are concerned that this recommendation (offer HDF rather than HD if in centre for people who opt for dialysis via vascular access) is not an appropriate response to the certainty of the evidence available. We agree with the Evidence review (Evidence review B; Table 9, page 17) generated for this recommendation that the evidence for haemodiafiltration versus high flux haemodialysis is VERY LOW for all key	Thank you for your comment. The committee agree that there are uncertainties in the evidence; however, on the balance of all available information, the committee view is that the available evidence is strong enough to recommend HDF over HD. Following stakeholder feedback, the committee have weakened the recommendation for HDF over HD in centre from a strong offer recommendation to a weaker consider recommendation.

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				clinical outcomes because of risk of bias in available studies, inconsistency, indirectness, and imprecision. This evidence summary is consistent with the available Cochrane review. There is very low certainty that HDF makes any difference to mortality, quality of life, symptoms, and well-being. Very low certainty evidence means that we cannot be sure whether haemodiafiltration is effective or safe when compared with high-flux haemodialysis. Additional research is likely to change our certainty in the evidence and may change the estimated benefits and harms. We strongly suggest that, in the presence of VERY LOW certainty evidence, that the NICE guideline does not include a recommendation that people opting for dialysis with vascular access be offered haemodiafiltration rather than high flux haemodialysis until there is HIGH or MODERATE certainty evidence from available randomised controlled trials.	As you will be aware, GRADE terminology bottoms out at very low quality quickly and not all very low quality outcomes are of equal uncertainty. It is worth noting that the HDF mortality finding is based on 9 RCTs with around 3000 participants in total. The impact of each downgrade was examined by the committee and it was noted that the downgrade for inconsistency was marginal (with an I^2 ~50%) and the downgrade for indirectness was appropriate (the population were not RRT naïve) but not likely to be extremely impactful. Additional research is always likely to reduce uncertainty, however judgements have to be made about at what level of evidence recommendations are appropriate.
Fresenius Medical Care Deutschland GmbH	Evidence review B	6	11	General comment: typo two times written they need.	Thank you for your comment. This has been amended.
Fresenius Medical Care Deutschland GmbH	Evidence review B	50	21	Question 2: Clinical important benefit was identified for HDF over HD on both mortality and hospitalisation. However, the hospitalisation is not used as a differentiating argument in the short version of the guidelines nor in the health economic analysis. We understand that for HDF the outcome was similar to HD, however when reviewing the evidence to distinguish between high volume and low volume HDF as previously commented there is a reduction in hospitalisation. We would like to ask the committee what would be the budget impact if hospitalisation would be considered when distinguishing between high volume and low volume HDF and what is the current reason for the exclusion of this argumentation, as the quality of the evidence seems to be a little bit higher in comparison to the mortality value claim.	Thank you for your comment. The statement you refer to regarding a clinical benefit in terms of hospitalisations is for the 'Adults aged over 70' population stratum only and is based on a single study. There was also data in the 'Adults aged 18-70' stratum section above this that suggested no difference in hospitalisation based on 3 studies. The discussion regarding the hospitalisation outcome with HDF has been revised to clarify the consideration of the hospitalisation evidence. Both comparisons are very low quality evidence but the committee agreed that given the more precise estimates in the adult population, it was not appropriate to put an emphasis on the finding in older adults in terms of decision making. Given this, hospitalisation was not incorporated into the cost effectiveness model or consideration of resource impact. Convection volume did not form part of the quantitative effectiveness analyses for the guideline; however, the committee considered the role of convection volume and this is discussed in the discussion section of the review. More information has been added to this section on volume. In brief

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					the committee agree that people may be more likely to see a greater mortality benefit of HDF over HD at higher convection volumes but that the evidence is not strong enough to support definitive thresholds at which the benefit does or does not exist. On this basis an additional analysis based on volume has not been added to the model; a discussion of the potential implications of this issue to the cost effectiveness analysis has however been added to the model report. No conclusions were drawn with regard to hospitalisation and volume: only a limited number of studies reported this outcome and none reported volume subgroup analyses for it.
Fresenius Medical Care Deutschland GmbH	Evidence review B	53	22	Question 1: As comment above (short guideline, p. 15, line 2) for us in the research recommendation for cost effectiveness comparing conservative management and RRT a clear patient population would need to be defined (what is meant with frail/older people) and also what exactly is considered as conservative management.	Thank you for your comment. The committee agree that it will be important for the researchers to define these terms of reference
Fresenius Medical Care Deutschland GmbH	Evidence review B	60	35	Question 2: This statement is for us contradictory to the statement on p.50 line 21-22 where hospitalisation is seen as a clinical benefit. We would like to ask the committee to clarify why hospitalisation has not been included in the analysis to differentiate between HDF and HD when there seems to be an evidence basis.	Thank you for your comment. This statement has been revised to clarify the consideration of the hospitalisation evidence. The statement you refer to on p50 where there is a clinical benefit in terms of hospitalisations is for the 'Adults aged over 70' population stratum only and is based on a single study. There was also data in the 'Adults aged 18-70' stratum section above this that suggested no difference in hospitalisation based on 3 studies. Both comparisons are very low quality evidence but the committee agreed that given the more precise estimates in the younger adult population, it was not appropriate to put an emphasis on the finding in older adults in terms of decision making. Given this, hospitalisation was not incorporated into the health economic model.
Fresenius Medical Care Deutschland GmbH	Evidence review B	66	7	General comment: In this sentence it states a Netherlands perspective I think this is the wrong term and should instead state the Dutch perspective.	Thank you for your comment. This has been amended throughout.
Fresenius Medical Care Deutschland GmbH	Evidence review B	66	14	General comment: In this sentence it states a Netherlands perspective I think this is the wrong term and should instead state the Dutch perspective.	Thank you for your comment. This has been amended throughout.

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Fresenius Medical Care Deutschland GmbH	Evidence review B	66	15	General comment: In this sentence it states a Netherlands perspective I think this is the wrong term and should instead state the Dutch perspective.	Thank you for your comment. This has been amended throughout.
Fresenius Medical Care Deutschland GmbH	Health Economic Analysis	5	31	Question 2: In the model a distinction is made between high-flux and low-flux HD, a similar analysis should be conducted comparing low-volume and high-volume HDF. As this would impact the mortality rate, EPO consumption and hospitalization rate more positively for high-volume HDF.	Thank you for your comment. Convection volume did not form part of the quantitative effectiveness analyses for the guideline; however, the committee considered the role of convection volume and this is included in the discussion section of the review. In brief the committee agree that people may be more likely to see a greater benefit of HDF over HD at higher convection volumes but that the evidence is not strong enough to support definitive thresholds at which the benefit does or does not exist. On this basis an additional analysis based on volume has not been added to the model; a discussion of the potential implications of this issue to the cost effectiveness analysis has however been added to the model report.
Fresenius Medical Care Deutschland GmbH	Health Economic Analysis	6	38	General comment: the question is what exactly the model wants to address, if the aim is to have a direct comparison of HD and HDF in terms of cost-effectiveness in an in-centre setting, the transplant number does not have to be taken into account at all. If a budget impact analysis is aimed for then not only the transplant should be taken into consideration, but also home treatments. In general, this model currently does not represent reality as most transplant patients will return to dialysis at some point in their life.	Thank you for your comment. The aim of the analysis is to assess the cost-effectiveness of HDF compared to HD in-centre. The transplant number has only a minor impact in these calculations but does impact the number of people on dialysis in the model over time and therefore the number available to obtain the mortality benefit from HDF in the longer term. A model will always be a simplification of reality to some extent. In developing the model we considered with input from clinical members of the committee the benefit of increasing complexity and data requirement in relation to the likely impact on conclusions. It was considered reasonable to exclude people returning to dialysis in the analysis. Although we accept this is a simplification of reality it is considered unlikely to impact conclusions regarding cost effectiveness.
Fresenius Medical Care Deutschland GmbH	Health Economic Analysis	19	7	General comment: We think there is a typo in the document where it is stated high flux HDF which we assume should say high flux HD	Thank you for your comment. This has been amended.
Fresenius Medical Care Deutschland GmbH	Health Economic Analysis	21	4	Question 2: The costs for the bloodline set for the Fresenius 5008 series have been overestimated. As the manufacturer we have a price of our bloodline set in the range of £4.50-5. We would therefore ask if this price can be adjusted in the analysis.	Thank you for your comment. We have checked the costs listed in the current NHS Supply Chain catalogue and these match those listed in the analysis report and so have not been changed as NICE methods require us to use national list prices where available. This will however not impact the analysis

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					results because the same bloodline is used for HDF and HD and so the cost difference is £0 either way.
Fresenius Medical Care Deutschland GmbH	Health Economic Analysis	23	5	Question 2: The amount of additional water that assumed to be consumed for a HDF session depends on the convection volume that is achieved. In line with our previous comment (p. 5, line 31-33) a differentiation should be made between low-volume (<21L per session) and high volume HDF (>21L per session). Therefore the 15L per session in terms of water consumption might be an underestimation of the real consumption that should be considered to be adjusted.	Thank you for your comment. The committee recognised that there is a range of convection volumes used in HDF. The committee furthermore recognised that the amount of extra water that would need to be generated for HDF compared to HD depends on the equipment used to deliver the treatment. In some systems the reduced dialysate flow rate required for optimal filter performance for HDF vs HD would equate to the water required to generate the replacement fluid and no additional water would be required. The committee thought that current high flux haemodialysis would deliver approximately 9L of convective treatment, and therefore 15L was selected as the additional fluid required to deliver replacement fluid for convective treatments where target convection volumes are higher than this. In addition the water costs are a relatively small element of the additional cost of HDF accounting for only £6.24 per year in the model. Sensitivity analyses attributing higher intervention costs to HDF did not change conclusions regarding cost effectiveness.
Fresenius Medical Care Deutschland GmbH	Health Economic Analysis	33-34	36	Question 2: The assumption of 15% for other costs besides dialysis and transportation are a rather low assumption, as the average patient population of dialysis is 65+, plus the methodology used on which this assumption is based is rather simplistic and not evidence-based. Therefore the study that mentions 30% of "other costs" is more realistic. Moreover, HDF has been shown to also reduce hospitalisation rates which are not mentioned here as a differentiator. Some studies that address this point are identified also in the systematic review, including Maduell 2013 and Ok 2013.	Thank you for your comment. This was discussed with the committee and it was agreed that a lower percentage was more appropriate for the overall dialysis population in the model of which more than half will be under 70 year of age when starting treatment based on UK renal registry data. Due to the uncertainty around this input it was varied through a wide range in sensitivity analyses (including 30%). This did not impact committee decision making regarding HDF. The discussion of the HDF hospitalisation evidence has been revised to clarify the committee interpretation. In the effectiveness review for the guideline a clinical benefit in terms of hospitalisations is for the 'Adults aged over 70' population stratum based on a single study. There was also data in the 'Adults aged 18-70' stratum that suggested no difference in hospitalisation based on 3 studies. Both comparisons are very low quality evidence but the committee agreed that given the

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					more precise estimates in the adult population, it was not appropriate to put an emphasis on the finding in older adults in terms of decision making. Given this, hospitalisation was not incorporated in to the health economic model.
Fresenius Medical Care Deutschland GmbH	Health Economic Analysis	34	27	General comment: We think there has been a typo in this line instead of ration it should be ratios.	Thank you – this has been amended.
Fresenius Medical Care Deutschland GmbH	Health Economic Analysis	35	37	Question 2: The ESA consumption could be even more reduced if a sub analysis would be done on convection volume achieved in the studies for HDF. As it is indicated by all studies included in the analysis Maduell 2013, Ok 2013 and Schiffl 2007 that higher convection volumes would lead to improved results. Achieving a target of 21L per session or higher would also result in a higher ESA reduction improving the cost-effectiveness and budget impact for the NHS.	Thank you for your comment. While this may be plausible there is no evidence from the included studies that reported ESA dose that this is the case (no analyses by volume are reported for ESA to assess this and the study with the biggest difference in ESA use had the lowest mean volume) and so this consideration has not been added.
Fresenius Medical Care Deutschland GmbH	Health Economic Analysis	47	20	General comment: The description of the threshold analysis should explicitly state that general costs associated with improved survival are included in this analysis as HDF on its own only adds 2.85 pounds per session in terms of costs excluding the EPO savings. This statement is misleading as it could be interpreted that 15 pounds per session are added to switch from HD to HDF. **Same applies for evidence review B, p. 41, line 20-25.**	Thank you for your comment. This has been added in both places.
Fresenius Medical Care Deutschland GmbH	Health Economic Analysis	52	1	General comment: In this sentence it states a Netherlands perspective I think this is the wrong term and should instead state the Dutch perspective.	Thank you for your comment. This has been amended throughout.
Fresenius Medical Care Deutschland GmbH	Health Economic Analysis	52	36	General comment: I think the reference Levesque 2016 should be 2015	Thank you. This has been amended.
Fresenius Medical Care Deutschland GmbH	Health Economic Analysis	52	42	General comment: I think the reference Levesque 2016 should be 2015	Thank you. This has been amended.
Fresenius	Short	Gene	General	General Comment: as we could not identify any guideline /	Thank you for your comment. Bone management was outside

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Medical Care Deutschland GmbH	Guideline	ral		recommendation on bone management, we were wondering if this topic would be addressed in a separate guideline or if this is something that should be added to this guideline.	of the scope of this guideline. NHS England decides on the topics for healthcare guidelines. We have highlighted this response with the NICE surveillance team
Fresenius Medical Care Deutschland GmbH	Short Guideline	Gene ral	General	Question 4: we would agree with the terminology dialysis via vascular access as an umbrella term to describe both haemodialysis and haemodiafiltration.	Thank you for your comment. To avoid confusion in response to other stakeholder comments we have changed the term 'vascular access' to 'HD/HDF'
Fresenius Medical Care Deutschland GmbH	Short Guideline	3	3	General comment: We are concerned that this guideline in its current wording puts too much emphasis on eGFR, and insufficient emphasis on symptoms, biochemistry and fluid overload, as well as nutritional status into account. Regarding declining nutritional status as an indicator for dialysis initiation. In IDEAL, three-quarters of the late start patients actually started with eGFR above 7 (mean CG-GFR 9.8 = eGFR 7.2), due to symptoms.	Thank you for your comment. We have now reversed it such that commencing based on symptoms is before starting on the basis of eGFR. The guideline committee confirmed that both reasons for starting dialysis should be given the same emphasis. We have edited the recommendation to make it clear that eGFR should be used in the absence of symptoms. Nutritional status was not given the same emphasis by the guideline committee but is now mentioned in evidence report A starting RRT.
Fresenius Medical Care Deutschland GmbH	Short Guideline	4	24	Question 3: This guideline should be clearer on which type of access is preferred as first access (fistula first, graft second, catheter third). This is in keeping with current renal access guidance on vascular access, which quotes evidence level 1A. (Murd 2008, Ravani 2013). Caveats may need to be included at the committee's discretion e.g. regarding frailer, more elderly patients who may do better with a graft (due to fewer interventions required). Therefore, the type of access should still be reviewed on a case by case basis, however a recommendation on the priority of type of access should be highlighted.	Thank you for your comment. Type of access is outside of the scope of this guideline but the guideline committee were aware of this important issue. We have highlighted this with the NICE surveillance team
Fresenius Medical Care Deutschland GmbH	Short Guideline	5	10	Question 3: It is difficult to assess these two accurately, and there is a risk that there will be variable interpretations of the guidance, leading to variations across the country in terms of algorithms used, leading to variation in quality of care; Can the committee make recommendations on methods for doing this?	Thank you for your comment. The methods used are outside of the scope of this guideline.
Fresenius Medical Care Deutschland GmbH	Short Guideline	6	18	Question 3: This guideline should be clearer on the definition of HDF. It should clearly differentiate between HD and HDF. Indeed, it could be argued that there is sufficient evidence currently to recommend high-volume HDF (>21L) over standard HDF, (three good recent studies - CONTRAST, Turkish OL-HDF Study, ESHOL; Also - Mostovaya meta-analysis 2014, Peters pooled analysis of 4 studies 2016,	Thank you for your comment. The committee considered the role of convection volume and this is discussed in the committee's discussion of the evidence in evidence report B, Modalities of RRT. More information has been added to this section on volume. In brief the committee agree that people are more likely to see a greater benefit of HDF over HD at higher convection volumes but that the evidence is not strong enough

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				Davenport HDF pooling project Kidney Int 2016) Not making this distinction seriously risks diluting the message regarding differentiating between HD and HDF. The benefits appear to be from reduced cardiovascular morbidity/mortality. E.g., stroke reduction in ESHOL, LV function in CONTRAST, significantly better stability of intradialytic blood pressure (ESHOL).	to support definitive thresholds at which the benefit does or does not exist.
Fresenius Medical Care Deutschland GmbH	Short Guideline	7	2	Question 3: This too short a time period between open surgical procedure and initiation of PD, and can lead to leaks. Ranganathan 2017 in PDI reported higher rates of leak in patients starting at 1 and 2 weeks compared to 4 weeks (admittedly a study with flaws, and terminated early). Even in their own review they quote a RR of 2.96) I would ask the committee to review this. It will also depend on the opinion of the surgeon. I would also ask the committee to consider the optimum timing for percutaneous insertion of catheters (physician operator), and peritoneoscopic technique.	Thank you for your comment. The evidence in the review also showed a clinically important harm of creating access at 1 week vs either 2 weeks or 4 weeks from use in terms of leaks and infections. The recommendations therefore specifies two weeks.
Fresenius Medical Care Deutschland GmbH	Short Guideline	8	6	Question 3: Loss of appetite is a frequent complaint among patients with advancing CKD; I would ask the committee to consider including this specifically in the list.	Thank you for your comment. We have added your suggestions to the table.
Fresenius Medical Care Deutschland GmbH	Short Guideline	10	5	Question 3: I would ask the committee to consider whether there is sufficient evidence on health or economic grounds to recommend a home based therapy in the first instance over in-centre, or should they all be presented on the same level. This is stated in their 2015 Quality standard [QS72] "All adults should be encouraged to carry out home-based dialysis if possible". This is contradictory to the findings in this guideline where no preference is recommended.	Thank you for your comment. The committee discussed that there was no evidence in this review of any clinically important differences but noted that there are other considerations in recommending home or in-centre dialysis. Based on their experience, the committee noted that some people gained a benefit to their quality of life and ability to continue with their usual daily activities when performing dialysis at home. However, the committee also noted that for some people who are unable to manage their own dialysis at home or who are particularly concerned about potential adverse effects of dialysis at home, it may be an additional risk. There was uncertainty in the current cost of dialysis in England due to concerns about the NHS reference cost data. However, the committee agreed that it was likely that home HD may be lower cost but there was uncertainty as the cost differences between PD and HD.
Fresenius Medical Care	Short Guideline	10	8	Question 3: Next to the information that a Chronic Kidney Patient should receive on the different RRT modalities, in our	Thank you for your comment. We cross refer to the NICE guideline on Chronic kidney disease in adults: assessment and

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Deutschland GmbH				opinion they should also receive information on renal disease/kidney failure itself, especially to also explain why next to the therapy other lifestyle adjustments will need to be made by the patient.	management (CG182) on information and education. This contains recommendations on giving information on renal disease/kidney failure.
Fresenius Medical Care Deutschland GmbH	Short Guideline	11	1	Question 3: Next to benefits of adherence to treatment regimens, we would think it would be worth adding a sentence to address the benefits of adherence to the medication plan. As this is a problem in many patients throughout CKD phases (incl. transplant).	Thank you for your comment. The use of the term 'treatment' includes medication.
Fresenius Medical Care Deutschland GmbH	Short Guideline	13	1	Question 1: Taking into account NICE guideline on multimorbidity (NICE guideline [NG56] 2016) and on patient experience (Clinical guideline [CG138] 2012) We would ask the committee to consider whether it is pertinent in this setting to recommend that providers consider setting up integrated models of care?	Thank you for your comment. No evidence was found on how care should be coordinated. The committee has made a research recommendation on keyworkers.
Fresenius Medical Care Deutschland GmbH	Short Guideline	13	1	General Comment: The level of clinical supervision afforded to patients on dialysis is perhaps one of the greatest areas of risk to patients, clinicians and healthcare providers alike. There are, by observation, significant variations in practice across the country in the level of clinical supervision provided, how it is provided, who it is provided by and the scope. Patients on dialysis are becoming increasingly complex, with increasing multimorbidity. There should be more in the way of guidance to inform service design and delivery with regard to numbers of staff required. For example, there is a recommendation from 2002 that there should be 1 consultant nephrologist per 100 RRT patients. The NHS England Specialised Service Specifications refer to "regular senior medical reviews," "provider shall have sufficient clinical and support staff," "access to a multi-professional renal team for regular review and also for ad-hoc input into their care," and a "monthly MultiDisciplinary Team (MDT) review." However, the specifications stop short of defining what "regular" and "sufficient" mean. Thus, there can be considerable differences in the interpretation. This can, in many instances lead to situations where a gap in service provision develops, between primary and secondary care.	Thank you for your comment. Clinical supervision and staffing levels are outside of the scope of this guideline.

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				While individual providers will need to develop their own bespoke models of care to suit local needs, I would urge the committee to consider providing some clarity on the matters above. In particular, the composition of the MDT, the frequency of remote reviews, face-to-face reviews, and clinical assessments undertaken.	
Fresenius Medical Care Deutschland GmbH	Short Guideline	14	17	General comment: we understand that at the moment there is no evidence available on the benefits for care coordination (see also page 27, line 6-14), however as we see such initiatives rising it would be worth making a research recommendation what the cost-effectiveness would be for these patients to integrate a care coordinator, or perhaps even better a care manager. These professionals could support a patient to be guided through the CKD and RRT pathway.	Thank you for your comment. The committee has made a research recommendation 'What is the clinical and cost effectiveness of having keyworkers present in the context of renal replacement therapy (RRT)?'
Fresenius Medical Care Deutschland GmbH	Short Guideline	15	2	General comment: We are not entirely sure what is meant with the definition of frail/older people and also what exactly entails conservative management. We would like to ask the committee for a clarification in patient population definition and the treatment that would be provided under conservative management.	Thank you for your comment. The population will be further defined by the researchers. Conservative management is described in Evidence report B, Modalities of RRT.
Fresenius Medical Care Deutschland GmbH	Short Guideline	18	21	Question 1: Here we would like to ask the committee for a clarification and specification of no differentiation in the benefits of RRT and conservative management. What were the specific considerations, e.g. is this patient group specific (younger, healthier individuals are better off doing RRT rather than conservative management). It would be very helpful to have clarity in the guideline on this topic.	Thank you for your comment. The recommendations support patient choice when deciding on whether to opt for RRT or conservative management. The benefits and disadvantages vary from individual to individual and it is not possible to make general statements.
Fresenius Medical Care Deutschland GmbH	Short Guideline	19	29	Question 3: We would like to ask the committee for a clear definition of high volume and low volume HDF (see also comment earlier, p. 6, line 18-20). There is a clear attention also from a UK data generation on this topic considering the H4RT trial currently ongoing that specifically reviews this differentiation. The definition of high volume HDF in this trial is set to 21L per session and should also be included in the RRT guideline. Additionally the guidelines should be updated according to the findings of this trial.	Thank you for your comment. We have not made a recommendation regarding volume of HDF and so it is outside of the remit of the guideline to define what would be considered high or low volume HDF. The guideline will be reviewed for update as per standard NICE processes.
Fresenius Medical Care Deutschland	Short Guideline	20	23	Question 2: For the ESA savings in HDF we would also make a distinction between low volume and high volume HDF in terms of the evidence analysis. There is a clear higher benefit	Thank you for your comment. While this may be plausible there is no evidence from the included studies that reported ESA dose that this is the case (no analyses by volume are reported

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GmbH				for patients on high volume HDF in comparison to lower convection volumes that could be of greater benefit for the budget impact of the health system.	for ESA to assess this and the study with the biggest difference in ESA use had the lowest mean volume) and so this consideration has not been added.
Fresenius Medical Care Deutschland GmbH	Short Guideline	24	15	Question 3: Some recent publications including Zocalli 2017, Hecking 2018 (v recently published), and Tabinor 2017. Indicate that chronic fluid overload leads to worse outcomes. Would the committee recommend *consideration* of assessment of overhydration as a tool to combat chronic overhydration (by bioimpedance measurement), or at the very least, encourage participation in trials seeking to answer this clinical question? There is already a current ongoing trial to assess the impact of fluid overload in the so-called BISTRO trial, this should be considered or at least once the results of this trial are available the guideline should be updated with clear recommendations accordingly.	Thank you for your comment. The impact of fluid overload on outcomes was outside of the scope of the guideline.
Fresenius Medical Care Deutschland GmbH	Short Guideline	25	20	Question 1: We are concerned that due to lack of published data on the effect of frequency of reviews on outcomes, there is considerable variation in practice across the country. We welcome the committee's decision to make a research recommendation. We would ask the committee to make a recommendation at the very least on minimum frequency of reviews and broad guidance on what should be reviewed (I appreciate this is referring to monthly QA/MDTs but is an important issue in the UK). While this may have a significant manpower impact on many Trusts, it is of course possible to be innovative around solutions (which can be decided at local level) e.g. use of specialist nurses to cover several units, working in partnership with other (private) providers.	Thank you for your comment. In the absence of evidence and given the potential resource impact the committee were unable to make a recommendation on frequency of reviews or what specifically should be included.
Fresenius Medical Care Deutschland GmbH	Short Guideline	28	25	General comment: the proportion of patient choosing conservative care is up to 40% for a matter of our own interest and understanding we would like to know where this figure comes from/is based on. Also referring back to the earlier comment (page 15, line 2) what exactly can be defined as conservative management in this context.	Thank you for your comment. The figure comes from Hussain, J. A., Mooney, A. & Russon, L. (2013) Comparison of survival analysis and palliative care involvement in patients aged over 70 years choosing conservative management or renal replacement therapy in advanced chronic kidney disease, *Palliative medicine.* 27, 829-39. A description of conservative management is on p29 3-7.
Kidney Care UK	Short Guideline	General	General	Medicines optimisation: As well as a high level of co-morbidity, kidney patients have to take a wide range of medicines at different times of the day and in different and often changing combinations which they will need advice and support with. We	Thank you for your comment. Medicines optimisation was outside of the scope of this guideline. There is an existing NICE guideline (Medicines Optimisation (NG5)). We know cross refer to this guideline in evidence report K information, education and

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				recommend that the absence of reference to pharmacists, polypharmacy guidance or medicines optimisation recommendations should be addressed.	support.
Kidney Care UK	Short Guideline	General	General	Dialysis via vascular access is not a commonly used term: patients do not use it and we suggest you do not adopt it. The term haemodialysis is used, whether via HDF or HD.	Thank you for your comment. To avoid confusion we have replaced the phrase vascular access with HD/HDF
Kidney Care UK	Short Guideline	3	2	1.1 The section is entitled 'Indicators for starting RRT but describes only dialysis and not transplantation, which is not mentioned until 1.2. 1.1. only makes recommendations for starting dialysis and should either be renamed or have transplant included.	Thank you for your comment. We have edited this and now it reads 'Indicators for starting dialysis'.
Kidney Care UK	Short Guideline	3	5	1.1.2 We are concerned that this recommendation will lead to people not being ready to start the dialysis they need in good time. Data from the UK Renal Registry supports the contention that most people will start dialysis sooner than this. There are many patients who are symptomatic and need dialysis at an egfr of 16 or 17. Commissioners could well use the recommendation not to commission dialysis until this very low egfr is reached which will have serious consequences for patients who need it. According to the UK Renal Registry, 4 of the 21 people who commence RRT every day will be unplanned. The numbers of unplanned starts has reduced in recent years but in a cash-strapped NHS a recommendation like this stands to have a negative impact on kidney patients. There is no balancing recommendation here for when to transplant; typically if someone has a living donor they would be transplanted well ahead of an egfr of 5-7.	Thank you for your comment. The recommendation is clear that people should start dialysis earlier if they have symptoms irrespective of eGFR. A level of eGFR is specified only for those people who do not experience symptoms. We have edited the recommendation to make it clear that eGFR should be used in the absence of symptoms. Due to the lack of evidence and potential resource impact no recommendation could be made for transplantation
Kidney Care UK	Short Guideline	4	4	1.2.1 While the recommendation to start assessment for RRT at least 1 year ahead is welcome the only indication the recommendations make is the 5-7 egfr for dialysis and a personalised approach should be recommended when trying to estimate a timeframe and support people with making choices, otherwise it will only be guesswork.	Thank you for your comment. The guideline committee were aware that it can be difficult to accurately predict when RRT may be required. In the experience of the committee the recommendation reflects current clinical practice. No evidence was found to challenge this position. The recommendation, in the context of shared decision making does not preclude a personalised approach.
Kidney Care UK	Short Guideline	4	14	1.2.3 "Consider assessment by a clinical psychologist or psychiatrist". We suggest that this statement is overly prescriptive and has cost implications as it omits other members of the multi-professional team who give support to people as they commence RRT. For example there are young	Thank you for your comment. As part of the initial assessment for RRT members of the MDT other than psychologists may assess for psychosocial issues and provide support as appropriate. The wording of the recommendation 1.2.2 has been changed to reflect this.

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				adult workers and social workers who provide some of this support. Kidney Care UK has funded a number of staff who support young adults in their choices and treatments at a particularly challenging time. 'Assessment where needed by the psychosocial team' would encourage and support this current good practice. This support is needed not just by people contemplating transplant but also those who are commencing dialysis or conservative management. Prescribing only either a clinical psychologist or psychiatrist may also introduce a delay in the work-up process towards transplantation, which may deter living donors.	Further assessment by a clinical psychologist or psychiatrist is only indicated for those people who are considering transplant where complex risk factors have been previously identified in order to plan appropriate support/psychological intervention. These issues are usually complex, and assessment should be carried out a specially trained mental health professional.
Kidney Care UK	Short Guideline	4	14	1.2.3 "Consider assessment by a clinical psychologist or psychiatrist". We suggest that this statement is overly prescriptive and has cost implications as it omits other members of the multi-professional team who give support to people as they commence RRT. For example there are young adult workers and social workers who provide some of this support. Kidney Care UK has funded a number of staff who support young adults in their choices and treatments at a particularly challenging time. 'Assessment where needed by the psychosocial team' would encourage and support this current good practice. This support is needed not just by people contemplating transplant but also those who are commencing dialysis or conservative management. Prescribing only either a clinical psychologist or psychiatrist may also introduce a delay in the work-up process towards transplantation, which may deter living donors.	Thank you for your comment. As part of the initial assessment for RRT members of the MDT other than psychologists may assess for psychosocial issues and provide support as appropriate. The wording of the recommendation has been changed to reflect this. Further assessment by a clinical psychologist or psychiatrist is only indicated for those people who are considering transplant where complex risk factors have been previously identified in order to plan appropriate support/psychological intervention. These issues are usually complex, and assessment should be carried out a specially trained mental health professional.
Kidney Care UK	Short Guideline	4	24	1.2.4 We are concerned that the ultrasound recommendation is overly leading about haemodialysis and should be qualified by "*For individuals who chose to prepare for HD/HDF….*". Alternatively it would be far better placed under 1.4, 'Planning dialysis access formation'.	Thank you for your comment. This recommendation has been moved to the section entitled 'planning dialysis access formation'.
Kidney Care UK	Short Guideline	5	4	1.3.1 We agree that a choice of therapies should be offered to people with failing kidneys. However for children with RRT we suggest that the comment at the bottom of the page about conservative management being a very rare option is moved up into the body of the document, so it is not missed, especially when reviewing online.	Thank you for your comment. We believe the footnote is clear and can be read online. This is also referred to in the committee's discussion of the evidence in evidence report B,Modalities of RRT
Kidney Care	Short	5	20	1.3.4 The discussion of whether transplantation is an option is	Thank you for your comment. The recommendations on

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UK	Guideline			part of the shared decision-making process and is good practice. If it is not an option for that patient at that time it still should be part of the discussion as with other options, such as home dialysis. The recent Patient Reported Experience survey produced by the UK Renal Registry in conjunction with Kidney Care UK shows that shared decision-making is rated lowest of all the measures. This is a survey validated by the University of Hertfordshire completed by 11,500 patients from all English and Welsh units bar one https://www.thinkkidneys.nhs.uk/ckd/wp-content/uploads/sites/4/2018/04/PREM-report-final-2.pdf The term 'shared decision-making' is only mentioned twice in the guidance, and more support and promotion for this patient-centred approach is needed.	choosing modalities of RRT or conservative management make it clear that all options should be discussed in the context of shared decision making. Shared decision making is fully discussed in evidence report B, Modalities of RRT and evidence report K on information, education and support.
Kidney Care UK	Short Guideline	6	6	1.3.7 We are concerned about the recommendation on people with a BMI above 30. There are patients with a BMI above 30 now who have received a transplant, and are doing far better that they would have done if they had remained on dialysis. We are also aware that there is geographical variation on the way a BMI is applied to people who are being considered for a transplant listing but that common practice is to transplant people with higher BMIs. We wonder why BMI has been picked out as opposed to other very important factors indicating the likelihood of a successful transplant such as cardiac health.	Thank you for your comment. The original intention of this recommendation was to discourage the practice of refusing transplantation for people solely based on people having a BMI greater than 30, a practice the committee agreed does still occur (although not commonly). Based on the comments we have received, we have altered the wording in an effort to make this clearer. BMI was prioritised by the committee as a subgroup that could explain any heterogeneity in the meta-analysis
Kidney Care UK	Short Guideline	6	10	1.3.8 Please can you give a greater emphasis to home therapies, in line with nationally agreed goals, through quality improvement programmes such as the Kidney Quality Improvement Partnership. For example 'Offer a choice of home therapies through peritoneal dialysis or haemodialysis or in centre through haemodialysis'. The guidance emphasises a personalised discussion and discussing these options, even if not suitable for that patient, as part of a shared decision-making process.	Thank you for your comment. The committee discussed that there was no evidence in this review of any clinically importance differences but noted that there are other considerations in recommending home or in-centre dialysis. Based on their experience, the committee noted that some people gained a benefit to their quality of life and ability to continue with their usual daily activities when performing dialysis at home. However the committee also noted that for some people who are unable to manage their own dialysis at home or who are particularly concerned about potential adverse effects of dialysis, dialysis at home may have additional risks. The recommendations on information, education and support elaborate on this including the need to explain why any of the forms of renal replacement therapy or conservative

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					management are not appropriate.
Kidney Care UK	Short Guideline	8	6	1.6.1 Care should be taken with the term 'cognitive impairment' and suggest a definition could be included in a glossary e.g. "Cognition is a collective label for our mental faculties, such as memory, attention and fluidity of thought, to name a few. Cognitive impairment is when these mental faculties are presenting below their expected level. It has been recognised for a number of years that kidney disease is associated with cognitive impairments. Although not all renal patients show such impairments, some may experience minor forgetfulness and/or confusion throughout their treatment. Experiences such as this are to be expected and medical staff are aware of such difficulties; currently, more research is being conducted to fully understand the nature of these cognitive impairments."	Thank you for your comment. We have added the term to the glossary.
Kidney Care UK	Short Guideline	12	4	1.8.5 Direct people to other sources of information and support (for example, online resources, pre-dialysis classes and peer support). There are national charities such as ourselves which offer a wide range of patient information, developed with patients and the Renal Association https://www.kidneycareuk.org/about-kidney-health/ advocacy, counselling and financial support https://www.kidneycareuk.org/get-support/ It would be helpful to patients for the guidelines to refer to such sources.	Thank you for your comment. NICE guidelines are unable to signpost to specific information resources.
Kidney Care UK	Short Guideline	12	6	1.8.6 "Remember that some decisions must be made months before RRT is needed (for example, a fistula is created at least 6 months before starting dialysis)". A similar comment would apply to transplantation and could be added here to give balance e.g. any person considering a pre-emptive kidney donation would be starting their workup 12 months before it is estimated the transplant will be needed.	Thank you for your comment. This is an example and it is not possible to list them all. The latter point is covered by the recommendation in the section on when to assess 'Start assessment for renal replacement therapy (RRT) or conservative management at least 1 year before therapy is likely to be needed, including for those with a failing transplant'.
Kidney Research UK	Short Guideline	General	General	Patient comment: Detailed information about the treatments, their effects on the patient and others, Good if done. Very few of those items listed were considered or even mentioned in my case, especially in 1994	Thank you for your comment.
Kidney Research UK	Short Guideline	General	General	For both clinical and research reasons, it is quite striking that there is no mention made of assisted Peritoneal Dialysis, despite the fact that it is widely available and utilised. On average, patients on dialysis are getting older with increasing frailty and comorbidity, and home dialysis is difficult to achieve	Thank you for your comment. Given the lack of clinical evidence, the higher costs than other dialysis options, and the potential for a substantial resource impact if recommended it was felt that a recommendation could not be made relating to assisted PD. In the committees discussion of the evidence in

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				for these patients, yet there is extensive observational data suggesting that home dialysis may provide significant mortality and quality of life benefits. Assisted PD is one of the most promising solutions to this, yet the data supporting this is mostly of very low quality leaving significant uncertainty about its role.	evidence report B, Assisted PD is discussed as an option where home therapy is chosen in the committee's discussion of the evidence in evidence report B, Modalities of RRT.
Kidney Research UK	Short Guideline	General	General	Financial modelling based on reference costs is generally thought to be inaccurate, due to difficulties in establishing the full treatment costs including, but by no means limited to the transport costs for in-centre HD patients, and allowing for the incremental model of dialysis prescription widely delivered to PD patients.	Thank you for your comment. The committee highlighted the concerns regarding the NHS reference costs for dialysis during development and this was investigated and discussed in detail. These considerations are documented in Chapter B. Transport costs have been estimated and added in to the cost of in-centre dialysis. We also explored whether there were other options to obtain more accurate cost estimates including consulting with representatives of the clinical reference group and it was agreed there was no better option at this time. No better up to date information has been provided by stakeholders at consultation. The unit cost section in Chapter B has been edited to ensure the concerns and uncertainties regarding the NHS reference cost data are clear and some additional considerations have been added to Chapter B based on stakeholders' comments. The committee took into account uncertainties in costs and cost effectiveness when making recommendations and this is described in Section 1.10 The committee's discussion of the evidence. This has also been edited to ensure uncertainties are clear.
Kidney Research UK	Short Guideline	General	General	There appears to be a discrepancy with NICE CG125 Peritoneal Dialysis, which says: Offer all people with stage 5 CKD a choice of peritoneal dialysis or haemodialysis, if appropriate, but consider peritoneal dialysis as the first choice of treatment modality for: children 2 years old or younger people with residual renal function adults without significant associated comorbidities.	Thank you for your comment. This guidance CG125. Evidence report B, Modalities of RRT presents the evidence and committee's discussion. In accordance with our methods only RCTs and studies that adjusted for the confounders specified by the committee were included. This is in accordance with NICE methods.. The evidence base therefore does differ to that of TA48 and CG125. Overall, there were no clinically important differences reported for HD vs PD and home therapies versus in-centre. The committee made a consensus based recommendation for PD to be offered as a first choice treatment modality for children 2 years old or younger in accordance with current practice and due toconcerns about technical difficulties of haemodialysis in very young children.

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					Very low quality evidence showed no difference for people with residual renal function and no evidence was found for people with comorbidities. The guideline committee felt that in the absence of evidence they could not make consensus based recommendations for these groups.
Kidney Research UK	Short Guideline	4	8	Patient comment: Involvement of everyone - family, etc - is good. I never had this in 1994 (my first transplant), no psychological assessment, no mention of preferences, no choices, not discussion with family. It was nothing to do with anyone, only me. In 2013 (my second transplant) there was a much longer time to prepare while on the transplant list, but in the end it was almost an emergency, so I had a hurried neck-line for a while. Eventually I was put on CAPD then later I chose APD. So no offers of pre-emptive treatment, especially a transplant, were made in either case	Thank you for your comment.
Kidney Research UK	Short Guideline	5	6	Where it mentions healthcare team, we also suggest Peer Educator/Peer Support	Thank you for your comment. The guideline committee confirmed that the decisions are made with the healthcare team. However, peer support can be an important source of information and support. This is covered in evidence report K on information and support.
Kidney Research UK	Short Guideline	6	6	We know from the ATTOM study data that around two thirds of UK renal transplant units have a BMI threshold for transplantation of 35 or greater (ref below), but the recommendations suggest this is not current UK practice. This would be a valuable area for future research, eg 1. What is the impact of higher BMI and related co-morbidities on post-transplant outcomes, and 2. What is the best management strategy for obese individuals approaching RRT Ref: Transplantation. 2017 Dec 5. doi: 10.1097/TP.0000000000002046. [Epub ahead of print] **Variation in Practice Patterns for Listing Patients for Renal Transplantation in the United Kingdom: a National Survey.** Pruthi R[1,2], Tonkin-Crine S[3], Calestani M[2], Leydon G[2], Eyles C[2], Oniscu GC[4], Tomson C[5], Bradley A[6], Forsythe JL[4], Bradley	Thank you for your comment. The original intention of this recommendation was to discourage the practice of refusing transplantation for people solely based on people having a BMI greater than 30, a practice the committee agreed does still occur (although not commonly). Based on the comments we have received, we have altered the wording in an effort to make this clearer. NICE can only make research recommendations in areas that it has attempted to answer with its own evidence review. While both of the areas you emphasise may be worthy of further research, they cannot be covered here.

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				C[7], Cairns J[8], Dudley C[3], Watson C[6], Draper H[9], Johnson R[10], Metcalfe W[4], Fogarty D[11,1], Ravanan R[12], Roderick PJ[2]; ATTOM Investigators.	
Kidney Research UK	Short Guideline	6	10	As in 18 above	Thank you for your comment. The committee discussed that there was no evidence in this review of any clinically importance differences but noted that there are other considerations in recommending home or in-centre dialysis. Based on their experience, the committee noted that some people gained a benefit to their quality of life and ability to continue with their usual daily activities when performing dialysis at home. However the committee also noted that for some people who are unable to manage their own dialysis at home or who are particularly concerned about potential adverse effects of dialysis, dialysis at home may have additional risks. The committee concluded that people should be offered a choice according to individual needs and circumstances, rather than promote one option over another.
Kidney Research UK	Short Guideline	6	17	We are concerned with this draft NICE recommendation. We do not believe that current evidence supports a recommendation to offer HDF to all patients on in-centre HD. A NIHR funded trial (H4RT) supported by UKKRC and CSG and another large European study are underway to examine this question. Currently renal units offering HDF to their patients are being encouraged to participate in a research trial in the context of the NIHR HTA-funded H4RTcurrently evaluating the question. www.bristol.ac.uk/population-health-sciences/projects/h4rt-trial/ www.journalslibrary.nihr.ac.uk/programmes/hta/158052 Aside from concerns about the quality of the evidence supporting them, the impact of the current guidelines will potentially be to force the centres to terminate the trial as the patients will all be switched to HDF. We believe this issue has been discussed in more length in the Renal Association response to the guideline. We therefore urge the NICE drafting panel to await the outcome of the two large and well-designed RCTs that	Thank you for your comment. Based on the feedback during the consultation process the committee have agreed to weaken the recommendation for HDF in centre from a strong offer recommendation to a weaker consider recommendation. The committee agree that there is some uncertainty in the evidence, but overall consider that it is strong enough to support a consider recommendation to use HDF over HD when done in centre. The committee have reviewed the recommendations in light of the various comments on ongoing research. Overall the committee have taken into account what uncertainty there is in the current evidence base, what information may or may not be gained through further research and the implications of delaying recommendations until that research becomes available.

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				together, once reported, will provide the definitive evidence. The guidelines would then have the support of the national and international nephrology community and can in turn be used to commission safe and cost-effective services. In the meantime, the guidance should recommend that suitable patients are offered the opportunity to participate in this H4RT NIHR study to create robust evidence.	
Kidney Research UK	Short Guideline	7-14	9	There is a recommendation that switches in treatment modality are planned where possible, but little data to support how to achieve this. Anticipating the need to switch treatment modality must therefore be a research priority. Furthermore, this implicitly recognises that some patients are moved from their chosen modality onto a different modality. In the latest UK Renal Registry report, the rates of this varied between centres, from 31.6% at one year to 5.6%, demonstrating the impact of the problem as well as as further evidence supporting analysis from the Australia/New Zealand that centre-level practices have a significant impact upon this. Research into modifiable risks for switching dialysis modalities, as well as prognostic factors and a subsequent prognostic model is required.	Thank you for your comment. The committee made a research recommendation 'What is the clinical and cost effectiveness of strategies for switching RRT modality?'
Kidney Research UK	Short Guideline	8	5	Patient comment: List of symptoms is very full. But not everyone will recognise or report symptoms which could also be part of many other diseases	Thank you for your comment. The purpose of the recommendations is to initiate discussions regarding symptoms including those that have not previously been reported. There is also a recommendation to include the possibility that these symptoms may be due to non-renal conditions (1.1.4).
Kidney Research UK	Short Guideline	10	6	Suggest support informed patient choice through use of decision tools	Thank you for your comment. The committee has made a research recommendation on decision tools.
Kidney Research UK	Short Guideline	12	4	Where it refers to other sources of support, suggest add in option of Peer Education	Thank you for your comment. This is covered by the use of the term peer support: (1.8.5)
Kidney Research UK	Short Guideline	12	14	We welcome this statement	Thank you for your comment.
Kidney Research UK	Short Guideline	13	General	Suggest research into Peer Education and Peer Support to facilitate decision making for patients in partnership with HCP's and family members	Thank you for your comment. The focus of the evidence review for this scope topic was how care should be coordinated. Recommendation 1.8.5 refers to peer support.
Kidney Research UK	Short Guideline	13	1	Patient comment; Co-ordinating care. It would be good to have named specialist or other relevant person to help the patient, to continue to advise outside the clinic by phone, for	Thank you for your comment. No evidence was found of the clinical and cost effectiveness of keyworkers. The committee has made a research recommendation.

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				example, late at night if problems arose. I had no such help, which caused me great anxiety a couple of times.	
Kidney Research UK	Short Guideline	13	20	For information - Research recommendation included in the UK Renal Research Strategy (UKKRS) page 15 – Dialysis – understanding and reducing cardiovascular ill-health and mortality and CKD – reducing cardiovascular risk'	Thank you for your comment.
Kidney Research UK	Short Guideline	14	2	For information - Research area referred to in the UKRRS page 15 Dialysis – reducing complications of peritoneal disease and Vascular access and dialysis techniques	Thank you for your comment.
Kidney Research UK	Short Guideline	14	12	For information - Partly covered in UKRRS page 15 – patient experience, quality of life and quality of care	Thank you for your comment.
Kidney Research UK	Short Guideline	15	12	Patient comment; Looking at these and knowing from my own Consultant, that he intercepts currently when eGFR is at 15, to allow time with the current NHS services to assess patients for transplant, get the dialysis team involved with Consultations and assessments with the patient and family to prepare for dialysis/transplant and further management. I agree with committee therefore that with symptomatic patients with progressive kidney failure where eGFR has not dropped to 7 mls, the Consultant and patient may need dialysis sooner. Interesting for research to continue on What is the optimum timing of listing for transplantation, as much impact on NHS cost and services.	Thank you for your comment.
Kidney Research UK	Short Guideline	19	7	As line above We know from the ATTOM study data that around two thirds of UK renal transplant units have a BMI threshold for transplantation of 35 or greater (ref below), but the recommendations suggest this is not current UK practice. This would be a valuable area for future research, eg 1. What is the impact of higher BMI and related co-morbidities on post-transplant outcomes, and 2. What is the best management strategy for obese individuals approaching RRT Ref: Transplantation. 2017 Dec 5. doi: 10.1097/TP.0000000000002046. [Epub ahead of print]	Thank you for your comment. The original intention of this recommendation was to discourage the practice of refusing transplantation for people solely based on people having a BMI greater than 30, a practice the committee agreed does still occur (although not commonly). Based on the comments we have received, we have altered the wording in an effort to make this clearer.

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				Variation in Practice Patterns for Listing Patients for Renal Transplantation in the United Kingdom: a National Survey. Pruthi R[1,2], Tonkin-Crine S[3], Calestani M[2], Leydon G[2], Eyles C[2], Oniscu GC[4], Tomson C[5], Bradley A[6], Forsythe JL[4], Bradley C[7], Cairns J[8], Dudley C[3], Watson C[6], Draper H[9], Johnson R[10], Metcalfe W[4], Fogarty D[11,1], Ravanan R[12], Roderick PJ[2]; ATTOM Investigators.	
Kidney Research UK	Short Guideline	19	24	1.3.1 to 1.3.11 "There was no evidence to suggest clear differences between home and in-centre (hospital or satellite unit) dialysis via vascular access. Dialysis costs were lower at home, although home dialysis is not suitable for many people." 1.3.8 Offer a choice of peritoneal dialysis at home or dialysis via vascular access either in centre or at home. *We feel that the recommendation around home dialysis should be strengthened. Patients should be offered as first choice a home therapy with in-centre haemodialysis for those who do not wish to consider or have contraindications.* This matches national aspirations and research findings of improved quality of life in line with current evidence, patient and clinical preferences and in concordance with previous NICE recommendations. The benefit of frequent home HD regimens and patients who report feeling well has been supported by studies (RCT FHN study) including cardiovascular benefit. There is extensive literature on the benefits of Home Haemodialysis (qualitative and biochemical parameters, adequacy is not mentioned) including cardiac outcomes (RCT, Culleton et al & FHN study) and supported by UK literature. Dialysis costs lower at home makes it a highly cost-effective treatment. There are large national Initiatives on growing home Haemodialysis supported by KQIP and Renal Association, UK. The key reason for low uptake is primarily organisational and not patient-related factors. This argues against the statement that home dialysis is	The committee discussed that there was no evidence in this review of any clinically importance differences but noted that there are other considerations in recommending home or in-centre dialysis. Based on their experience, the committee noted that some people gained a benefit to their quality of life and ability to continue with their usual daily activities when performing dialysis at home. However the committee also noted that for some people who are unable to manage their own dialysis at home or who are particularly concerned about potential adverse effects of dialysis, dialysis at home may have additional risks. The guideline committee has made a research recommendation on 'What is the clinical and cost effectiveness of home haemodiafiltration versus home haemodialysis, taking into account the impact of frequency?'

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				not suitable for many people, without any due consideration that other extrinsic barriers. This guidance draft circulated could have a detrimental impact on sustaining home programmes in NHS trusts, and would go against patient demand and preferences. We suggest research recommendation on establishing the benefit of home vs hospital haemodialysis? What is the clinical and cost effectiveness of frequent and extended home haemodialysis, considering the impact of frequency at home?	
Kidney Research UK	Short Guideline	20	12	Patient comment: re no evidence of difference between CAPD and APD.; not true, I did both and found many, not the least of them being free during one's daytimes and dialysing overnight	Thank you for your comment. There were no clinically important differences found in the studies. The committee recognise that there are differences between CAPD and APD and therefore people should be offered the choice.
Kidney Research UK	Short Guideline	29	Research general	There is no mention of the need for research on incremental dialysis, a particular area of major interest for haemodialysis. Dialysis provision is widely recognised as an expensive treatment, with a major impact on a patient's lifestyle. Treatment goals have widely focused on measures of 'dialysis adequacy', based on either mathematical modelling of small, water-soluble, molecule clearance leading to targets based on 'Kt/V', or on targets based on time and frequency with 4 hours of haemodialysis 3 times per week widely adopted. These targets, as they are currently implemented in most units, take no account of the patients residual renal function, nor of the patients individual priorities. Given this background, there is a pressing need to clarify the role of a gradual increase in haemodialysis as residual renal function declines, and how to tailor dialysis schedules to patient priorities. This has the potential to simultaneously improve quality of life and reduce treatment costs.	Thank you for your comment. Incremental dialysis was outside of the scope for this guideline.
Merck, Sharp and Dohme Ltd	General	Gene ral	General	MSD welcome the opportunity to comment on the Renal replacement Therapy guideline. We have found the guideline to be robust and have no comments to make on the draft.	Thank you for your comment.
NHSE, Specialised Commissionin	General	Gene ral	General	We welcome formalisation of practice within this area to aid consistency in patient-centred and evidence-based care. It is vital to recognise the diversity of patients commencing renal	Thank you for your comment. Based on the feedback during the consultation process the

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g, Renal Services CRG				replacement therapy and the need for an individualised approach by a highly skilled multi-professional team. We feel that these guidelines address some important areas to this regard. We do however have some concerns as addressed within this response, and feel that these need to be addressed to help ensure widespread uptake of their recommendations. This response is compiled from comments from all members of the Renal Services Clinical Reference Group. From a commissioning perspective there are key points that are discussed in more detail below. HDF/HD. There is currently no convincing evidence that HDF should be provided instead of HD in-centre. This would also have considerable cost implications and, we feel, far more than quoted within the draft guidance. There is little mention of encouraging home therapies uptake, either as peritoneal dialysis or home haemodialysis. Both of these therapies are probably cheaper than in-centre HD. In addition there is evidence of quality of life benefits, and for those who perform more frequent and prolonged haemodialysis, there is some evidence of prolonged life. We are concerned about stating that dialysis should be commenced at eGFR 5-7 ml/min/1.73m2. Although in theory this may suggest that costs could be saved, in reality, both in the IDEAL study and within UK data from UKRR, most patients will commence dialysis before this level because of symptoms. Aiming for a low eGFR is likely to lead to more patients starting dialysis in an unplanned manner, which is known to be associated with poorer outcomes and increased cost. There is no mention of eGFR in relation to when to perform pre-emptive transplantation, which is a disconnect with the statement about commencing dialysis. Transplantation is the best form of renal replacement therapy for those for whom it is a suitable option and this is no definitive statement to this effect. It is also a more cost effective form of RRT than	committee have agreed to weaken the recommendation for HDF in centre from a strong offer recommendation to a weakerconsider recommendation. The committee agree that the evidence is low quality, but overall consider that it is strong enough to support a considerrecommendation to use HDF over HD when done in centre. This weaker recommendation is likely to reduce the resource impact with uptake possibly being lower. The committee have made recommendations that all people should be offered the choice of home or in centre RRT. The committee discussed that there was no evidence in this review of any clinically important differences but noted that there are other considerations in recommending home or in-centre dialysis. Based on their experience, the committee noted that some people gained a benefit to their quality of life and ability to continue with their usual daily activities when performing dialysis at home. The committee agree home treatment should be an option for people if possible but do not feel there are grounds to strongly direct people towards home treatment if this is not their decision. Dialysis at home is supported by these recommendations as it is implicit in offering such a choice that home dialysis facilities would need to be readily available. However, the committee also noted that for some people who are unable to manage their own dialysis at home or who are particularly concerned about potential adverse effects of dialysis, dialysis at home may have additional risks. The committee noted that home HD may be cheaper than in-centre. The cost of PD however may now be similar to in-centre HD. There are some uncertainties regarding these costs. Issues relating to costs are discussed in more detail in point 5 below. The recommendation emphasises that eGFR should be used as the starting point for dialysis only in the absence of symptoms. However we have now reversed it such that commencing based on symptoms is before starting on the basis of eGFR. This recommendation should be considered in the context of the recommendation on starting assessment for RRT or conservative management at least 1 year before therapy is likely to be needed, including those with a failing transplant. In the experience of the guideline committee, when implemented, this should limit the number of 'unplanned starters'. Very limited evidence was found on when to perform

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				dialysis. Again, if not encouraged at a higher eGFR than 5-7ml/min/1.73m2, or not commented on, then opportunities for pre-emptive transplantation may be missed as symptomatic kidney failure necessitates dialysis. We have concerns around the costing model. We acknowledge that this is heavily caveated as it relies on the use of reference cost data. However, it is accepted by the renal community, and indeed by NHSI, that dialysis reference costs are not wholly accurate. Other sources of data would be available to ensure costing is more accurate. It is widely acknowledged that peritoneal dialysis is less expensive than in-centre HD (excluding assisted APD) and this is not reflected in reference costs and thus this analysis. Not all costs of dialysis are included within reference costs, and patient transport is a significant omission. An attempt to add in transportation costs to in-centre dialysis has been made, using data from London in 2010. This is almost certainly an underestimate of current costs within the majority of the country, but it is accepted that data is very difficult to obtain. There is an obvious flaw around the cost of home haemodialysis which is far too low. This presumably has arisen because of an assumption that sessional reference costs are weekly costs. This should be corrected. Although we would not advocate choosing a therapy based on cost, and appreciate that this is emphasised within the guidance, it is important to provide as accurate costing as possible. Care of patients approaching the need for, or receiving RRT, requires a skilled multiprofessional team. This is reflected within the NHS England specifications for care. Within this guidance there is considerable discussion round the role of the dietitian and that of those providing psychological support. We acknowledge the importance of these aspects of care for the renal patient, but feel that other members of the team also play vital roles in the care of patients. In particular we feel there should be mention of: Social work/welfare support officers; commencing RRT, particularly dialysis, may often be associated with a decline in	transplantation. The evidence that was reported gave contradictory results. Please see evidence report A starting RRT. The guideline committee were therefore unable to make a recommendation. They have made a research recommendation on this topic. The committee highlighted the concerns regarding the NHS reference costs for dialysis during development and this was investigated and discussed in detail. These considerations are documented in Chapter B. We also explored whether there were other options to obtain more accurate cost estimates including consulting with representatives of the clinical reference group and it was agreed there was no better option at this time. No better up to date information has been provided at consultation. The unit cost section in Chapter B has been edited to ensure the concerns and uncertainties regarding the NHS reference cost data are clear and some additional considerations have been added to Chapter B based on stakeholder's comments. The committee took into account uncertainties in costs and cost effectiveness when making recommendations and this is described in Section 1.10 The committee's discussion of the evidence. This has also been edited to ensure uncertainties are clear. While we accept that the published literature has largely reported that PD has been lower cost than HD, most recent UK cost data suggests that PD and HD are now much more similar in cost with cost having increased year on year for PD whilst HD costs have remained constant. Discussion of this issue and this new analysis of costs over time has been added to Chapter B. Note that the transport cost was from 2016/17 (not 2010) this has been clarified in the guideline. In addition a committee member has now provided an additional transport cost estimate that has been incorporated into calculation; this increases transport costs. We have again reconfirmed with NHSi that in-centre HD costs are per session but home HD costs are per week. As such, the costs for home dialysis have not been changed. However, we have added details about the concern that people may be erroneously submitting home dialysis costs that are per session rather than per week. We now refer to the multi-professional team in the committee's discussion of the evidence in evidence report K information,

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				ability to work. This can lead to significant financial implications that can be hard to address by the patient overwhelmed by transition to dialysis. Professionals within this team make a marked difference to patients' lives. Specialised medicines management in this group is vital. It is very disappointing that this receives no mention. Support is needed to ensure correct dosing and reduction of side effects associated with reducing renal function and then transfer to dialysis, addressing patient adherence to medication, which is known to be a very considerable problem in all patients receiving RRT, and addressing the complexities of immunosuppressant medication dosing and interaction in those receiving a transplant. We would like to suggest an additional section for this guideline *1.3 Medicines Optimisation*, (as set out below) as medicines optimisation cuts across the entire RRT patient pathway. ***1.3 Medicines Optimisation*** Chronic Kidney Disease is a long-term condition and as such regular medicines and/or other therapies are often required to treat symptoms and manage disease progression. Examples include epoetin and iron for anaemia, medicines to prevent bone disease and decrease cardiovascular risk and if transplanted, immunosuppressants and transplant co-medications. Medicines optimisation is defined as 'a person-centred approach to safe and effective medicines use', to ensure people obtain the best possible outcomes from their medicines. It is important to ensure a person is taking their medicines as intended as this can support the management of their long-term conditions, multimorbidities and polypharmacy.	education and support. We now refer to social workers and welfare support workers in evidence report K on information, education and support Medicines optimisation was outside of the scope of this guideline. It is covered in another NICE guideline (Medicines optimisation (NG5). We now cross refer to this guideline in evidence report K on information, education and support. The interface between primary and secondary care and the role of community care is discussed in evidence report M coordinating care. Very limited evidence was found on the clinical and cost effectiveness of different ways of coordinating care. Due to the potential resource impact of any recommendations the committee were unable to make any recommendations on how care should be coordinated The use of risk calculators to help predict speed of decline of kidney function was not highlighted at the stakeholder workshop or during the consultation for the scope as an area to include. We now refer to the Mental Capacity Act (2005) in the committee's discussion of the evidence in evidence report B, Modalities of RRT and in evidence report G indicating for switching or stopping RRT or conservative management.

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				Medicines optimisation applies to people who may or may not take their medicines effectively.[1] It has been estimated that between 30% and 50% of medicines prescribed for long-term conditions are not taken as intended.[2] Adherence is recognised as a significant modifiable factor that can affect treatment outcome in chronic disease management. Meta-analyses of all solid organ transplant types reported a 22.6% non-adherence rate to immunosuppressant therapy and with highest rates were observed for kidney transplants (36%)[3] . Numerous studies have analysed medicine adherence rates in CKD or maintenance dialysis and results are wide ranging depending on which medicine is investigated. For example hypertension management in CKD, ~30% of patients were considered to have poor adherence resulting to uncontrolled blood pressure.[4,5] Phosphate binding medicines non-adherence in maintenance dialysis patients varied from 17 to 74%.[6] The prevalence of self- reported non-adherent behaviour was 49% in a study of CKD patients and a pill burden of over 20 tablets increased the risk of non-adherence. Complex medicine regimens and pill burden were cited as a barrier to adherence.[7] Furthermore a Cochrane Systematic Review is currently underway to review interventions for improving medication adherence in solid organ transplant recipients, and the outcome of this review is awaited.[8]	

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				Medicines optimisation is especially important for persons with CKD as many medicines are renally excreted or are potentially nephrotoxic, with the risk of a more rapid decline in renal function or accumulation of drug/metabolite and associated adverse effects. Medicines doses should be tailored to the individual's renal function. Potential interactions with other medicines, especially for immunosuppressants, should be reviewed when initiating any new medicine. Medicine reconciliation and medicine review should be undertaken throughout; on admission to hospital, at each out-patient clinic visit, when a new medicine is commenced or there is a change in renal function. NICE Quality Standard 120 on Medicines Optimisation highlights shared decision making, as clinical outcomes and patient satisfaction are likely to be better when decisions about medicines are made jointly between the person taking the medicine and the prescriber.[9] Advice from a pharmacist with specialist renal knowledge should be sought to aid medicines optimisation. [1] 2015 Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes NICE guideline Published: 4 March 2015 nice.org.uk/guidance/ng5. https://www.nice.org.uk/guidance/ng5/resources/medicines-optimisation-the-safe-and-effective-use-of-medicines-to-enable-the-best-possible-outcomes-pdf-51041805253 [2] World Health Organization 2003. http://www.who.int/whr/2003/en/whr03_en.pdf [3] Dew MA, DiMartini AL, De Vito Dabbs A, Myaskovsky L, Steel L, Unruh M, et al. Rates and Risk factors for nonadherence to the medical regimen after adult solid organ transplantation. Transplantation 2007;83(7):858–73. [4] Schmitt KE, Edie CF, Laflam P, et al. Adherence to antihypertensive agents and blood pressure control in chronic	

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				kidney disease, Am J Nephrol , 2010; 32: 541-548 [5] Muntner P, Judd SE, Krousel-Wood M, et al. Low medication adherence and hypertension control among adults with CKD: data from the REGARDS (reasons for Geographic and Racial Differences in Stroke) study, Am J Kidney Disease 2010; 56: 447-457 [6] Karamanidou C, Clatworthy J, Weinman J, et al. A systematic review of the prevalence and determinants of nonadherence to phosphate binding medication in patients with end-stage renal disease, BMC Nephrology , 2008; 9: 2 [7]McKillop G, Joy J. Polypharmacy and non-adherence to prescribed medicines in CKD. BrJRM Winter 2013. Vol 18 (4); 9-11. [8] Mellon L, Doyle F, Hickey A, Ward KD, de Freitas DG, McCormick PA, O'Connell O, Conlon P. Interventions for improving medication adherence in solid organ transplant recipients. Cochrane Database of Systematic Reviews 2017, Issue 12. Art. No.: CD012854. http://cochranelibrary-wiley.com/doi/10.1002/14651858.CD012854/pdf [9] Medicines optimisation Quality standard Published: 24 March 2016 nice.org.uk/guidance/qs120. https://www.nice.org.uk/guidance/qs120/resources/medicines-optimisation-pdf-75545351857861 There is no mention of liaison with other community services where appropriate to ensure joined up care. This is of particular importance with the multimorbid but for many dialysis patients communication between renal and primary/community services (in both directions) is felt to be unsatisfactory. This would be of particular importance to those reaching end of life, whether receiving RRT or conservative care, where community support is vital. Although there are several mentions made of commencing preparation for RRT before it is required, there is no mention within the document as to how such a prediction will occur. We feel that the use of risk calculators should be encouraged to help predict speed of decline of kidney function (e.g. the	

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				Kidney Failure Risk Equation or KDIGO). This would allow discussion of RRT to occur with those for whom it is likely to be a significant risk rather than all those at a specific eGFR. In addition, it would help identify those more likely to progress at an above or below average rate, aiding appropriate timing of pre-emptive transplantation and access formation. There is little discussion around the further complexities that ensue when a patient is lacking capacity at commencement of RRT or where they lose capacity when already receiving RRT, prompting discussions around withdrawal. This is an increasingly prevalent issue and we feel merits further mention. This could obviously include discussion with carers and family, with IMCA involvement if needed. A balance has to be achieved between patient distress and safety with prolongation of life with RRT when approaching such best interest decisions.	
NHSE, Specialised Commissioning, Renal Services CRG	Short Guideline	3	5	We acknowledge research stating that there is no advantage to 'early start' dialysis. However the IDEAL study (Cooper et al; N Eng J Med 2010) demonstrated that the majority of patients developed symptoms attributable to end stage kidney disease at eGFRs above 5-7 ml/min/1.73 m2 and this is also the case within the UK (UKRR). We would suggest that statement 1.1.2 (Page 3, Line 5) is changed to reflect this more strongly e.g. 'In the absence of symptoms…consider starting dialysis at an estimated glomerular filtration rate (eGFR) of around 5 to 7 ml/min/1.73 m2…'. We do however acknowledge the importance of 1.1.4 (Page 3, Line 12) that not all symptoms are attributable to kidney failure and thus may not improve with commencement of dialysis. This should be discussed with the patient to aid shared decisions about dialysis commencement. We are concerned that if the only eGFR mentioned within this statement is 5-7 ml/min/1.73 m2 then earlier preparation is not encouraged. Given that the majority of patients will commence before this level, this could potentially lead to an increase in those starting in an unplanned manner.	Thank you for your comment. The recommendation as worded clearly reflects the starting point for dialysis, eGFR or symptoms. However, we have now reversed it such that commencing based on symptoms is before starting on the basis of eGFR. We have edited the recommendation to make it clear that eGFR should be used in the absence of symptoms. This recommendation should be considered in conjunction with the one of when to start the assessment for RRT or conservative management. Starting the assessment one year in advance of when RRT or conservative management is likely to be needed will limit the number of unplanned starts. We have reworded the title of this section to 'indicators for starting dialysis'. Due to limited evidence the committee were unable to make any recommendations on transplantation. There is a research recommendation on the timing of pre-emptive transplant.

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				This section is entitled 'indicators for starting renal replacement therapy'. Transplantation is a renal replacement therapy and is not mentioned here. It is likely that pre-emptive transplantation, either as a live donor transplant, or as deceased donor listing, will be considered at an eGFR considerably higher than 5-7 ml/min/1.73 m2. We suggest that a recommendation is made that assessment for transplantation should occur in a timely fashion to allow listing or live donor transplantation of at an eGFR 10-15 ml/min/1.73 m2, adjusted appropriately for individual circumstances e.g. speed of progression of renal disease and patient symptoms. Use of calculators (such as https://www.odt.nhs.uk/transplantation/tools-policies-and-guidance/calculators/) may be of benefit to assess a patient's likelihood of receiving a DBD kidney transplant and thus discussion around live donation and dialysis.	
NHSE, Specialised Commissioning, Renal Services CRG	Short Guideline	4	4	See general comments. Estimating a year before commencement of requirement for dialysis or transplantation (which may well be at differing eGFRs) requires individualised risk calculation to allow appropriate individualised care.	Thank you for your comment. Risk calculation was not identified during the stakeholder workshop or as scoping consultation as an area to include. The guideline committee were aware that it can be difficult to accurately predict when RRT may be required. In the experience of the committee the recommendation reflects current clinical practice. No evidence was found to challenge this position.
NHSE, Specialised Commissioning, Renal Services CRG	Short Guideline	4	14	We have several concerns about 1.2.3 (Page 4, Line 14) The transition to commencement of renal replacement therapy is difficult for most patients and it is vital that an experienced multi-professional team, including trained peer supporters, are routinely available to all, with extra support offered as needed. This should include access to more formal psychological support from a professional experienced in supporting renal patients in such situations. We do not feel that specification of 'psychologist or psychiatrist' is necessary. Units have evolved different methods to provide psychological support and this may be very well provided by other members of the multi-professional team such as counsellors or social workers. We acknowledge where a specific behavioural change	Thank you for your comment. As part of the initial assessment for RRT members of the MDT other than psychologists may assess for psychosocial issues and provide support as appropriate. The wording of the recommendation 1.2.2 has been changed to reflect this. Further assessment by a clinical psychologist or psychiatrist is only indicated for those people who are considering transplant where complex risk factors have been previously identified in order to plan appropriate support/psychological intervention. These issues are usually complex, and assessment should be carried out a specially trained mental health professional. The recommendation 1.2.3 refers to transplant specifically. We agree psychological review may be appropriate for people choosing other forms of RRT This is covered by recommendation 1.2.2.

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				programme is offered by the psychologist or psychiatrist e.g. for medication adherence this may be of use in certain individuals It appears that 1.2.3 (Page4, Line 14) refers only to patients being considered for transplantation. For several groups mentioned review may also be appropriate for those considering dialysis We acknowledge that there may be very specific queries pertaining to either capacity to choose RRT, ability to cope with treatment demands of RRT in context of significant mental health issues or substance misuse, and appropriate holistic, cross-team management strategies in these context. In these situations review by a psychiatrist or psychologist with specific expertise in these areas may be of benefit.	We now refer to the Mental Capacity Act (2005) in the committee's discussion of the evidence in evidence report F, How to assess.
NHSE, Specialised Commissioning, Renal Services CRG	Short Guideline	4	24	This statement seems rather out of place in this section and would be better in the access section. We feel that the recommendation of ultrasound for all vascular access formation needs some contextualisation. Assessment for access needs to be performed by practitioners who are highly experienced in this area, and who are able to define the most appropriate form of vascular access for the patient. This may involve clinical assessment and other forms of radiological investigations including ultrasound (by operators skilled in vascular assessment) and for instance CT or angiography.	Thank you for your comment. This recommendation has been moved to the section entitled 'planning dialysis access formation'. The recommendations are made on the assumption that the person has the necessary competencies to put it into practice. We have edited the committee's discussion of the evidence to refer to CT and angiography.
NHSE, Specialised Commissioning, Renal Services CRG	Short Guideline	5	4	We acknowledge that there is a footnote clarifying that conservative management is very rarely offered in children and is less appropriate in younger, healthier adults. This probably needs more emphasis in the statement itself.	Thank you for your comment. We believe the footnote is clear and can be read online. This is also referred to in the committee's discussion of the evidence in evidence report B, Modalities of RRT
NHSE, Specialised Commissioning, Renal Services CRG	Short Guideline	5	6	Although commendable to offer discussion around different options of RRT in the context of factors mentioned, it must be recognised that it is extremely difficult to personalise such information from available data. USRDS data has been used in such predictive models but is not directly applicable to the UK	Thank you for your comment. We now highlight this issue in the committee's discussion of the evidence in evidence report B, Modalities of RRT.

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				population. Discussions and decisions around ,e.g. transplantation, must therefore be explained in the context of these uncertainties	
NHSE, Specialised Commissioning, Renal Services CRG	Short Guideline	5	20	See 1.3.2 (Page 5, Line 6) comment Although we accept the need to discuss transplantation with all likely to need RRT, for some patients, transplantation is unlikely ever to be an available option as likely benefits will be outweighed by likely risks. We do not accept the statement in supporting evidence that transplantation has a benefit across all ages as not corrected for comorbidity. Discussion should therefore be tailored appropriately to ensure this is recognised and discussion is then focussed on differing forms of RRT. We acknowledge that for many patients not suitable for transplantation, a discussion about this may be helpful to ensure they are aware of the reasons for non-listing and thus do encourage discussion with all.	Thank you for your comment. The committee agree that it is important to discuss the risks and benefits of transplantation with all people. The committee also agree that transplant may not be beneficial in some people, and that in general people who are older and more frail are less likely to see a benefit (although that does not mean they will not). The wording of the text you refer to has been amended to clarify its meaning. The recommendations on choosing modalities of RRT or conservative management make it clear that all options should be discussed in the context of shared decision making.
NHSE, Specialised Commissioning, Renal Services CRG	Short Guideline	6	1	Early identification of a potential live donor to enable work up for pre-emptive transplantation should be encouraged. We recognise that such conversations can be difficult and therefore support should be provided to patients to initiate discussion with potential live donors where this is required	Thank you for your comment. We have added the early identification of a living donor to the committee discussion of the evidence in evidence report B, Modalities of RRT.
NHSE, Specialised Commissioning, Renal Services CRG	Short Guideline	6	3	Pre-emptive transplantation is an important goal and we welcome the emphasis here. As in comments relating to 1.1.2 (Page 3, Line 5), further discussion about timing of assessment and transplantation would be welcomed.	Thank you for your comment. 'What is the most clinical and cost effective strategy for timing of pre-emptive transplantation?' is a key recommendation for research. There is also a research recommendation on the optimum timing of listing for transplantation.
NHSE, Specialised Commissioning, Renal Services CRG	Short Guideline	6	6	We have several concerns about this statement There is now very little evidence to suggest that BMI cut off for transplantation should be 30 with accumulating evidence to suggest significant benefit for those with a higher BMI. The best transplant for any patient is the one that they can receive with 12-18 months of starting RRT. Two systemic reviews (Hill et al NDT 2015;30:1403-11; Nicoletto et al. Transplantation 2014;98:167-76) suggest that delayed graft function rates are	Thank you for your comment. The studies you reference did not meet the protocol for this review either because they look purely at obesity as a predictor of outcomes for a population all having received a transplant or because they did not adjust for all key confounders. However the committee in general agree with the concept that in the majority of cases BMI alone should not be used to rule out transplant and that people with BMI >30 may well benefit from transplantation. The wording of the recommendation has been altered it to better convey the

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				somewhat higher if BMI>30 but that overall mortality and graft loss are not significantly different. However registry data (albeit from the US) does clearly demonstrate very significant survival advantages for obese patients with BMIs up to 40 (and above) [Gill et al. AJT 2013;13;2083-90]. Unless a patient contemplating RRT has the ability to lose weight relatively rapidly then they are far better off remaining obese and having a timely transplant than making a vain attempt to lose weight on dialysis. It should be added that there are no trials of prospective deliberate weight loss and transplantation outcomes. Most of the 23 units in the UK have recently relaxed their criteria to list selected patients with BMI 35-40. A UNOS study from the US (Cannon et al. Annals of Surgery 2013:257;978-984) showed that the relative risk of graft loss for BMI 35-40 was actually less that being diabetic or African American, groups who clearly merit transplantation. As a univariate variable obesity has a relatively minor effect of graft outcomes. We are also concerned that there are several other factors that might influence why a patient may be at more risk following transplantation rather than BMI. These include for instance cardiovascular disease, age, dialysis vintage, and diabetes. It seems beyond the scope of this guidance to discuss all of these factors individually and therefore odd to pick out BMI alone.	committee's intention. The guideline committee specified BMI as a subgroup in the meta-analysis. The subgroups were chosen on the basis of their ability to explain heterogeneity in the meta-analysis.
NHSE, Specialised Commissioning, Renal Services CRG	Short Guideline	6	10	We feel that the recommendation around home dialysis should be strengthened. Patients should be offered as first choice a home therapy with in-centre haemodialysis for those who do not wish to consider or have contraindications. This matches national aspirations and research findings of improved quality of life.	The committee discussed that there was no evidence in this review of any clinically importance differences but noted that there are other considerations in recommending home or in-centre dialysis. Based on their experience, the committee noted that some people gained a benefit to their quality of life and ability to continue with their usual daily activities when performing dialysis at home. However the committee also noted that for some people who are unable to manage their own dialysis at home or who are particularly concerned about potential adverse effects of dialysis, dialysis at home may have additional risks. The committee concluded that people should be offered a choice according to individual needs and

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					circumstances, rather than promote one option over another.
NHSE, Specialised Commissioning, Renal Services CRG	Short Guideline	6	14	And assisted APD in whom this may be appropriate.	Thank you for your comment. Given the lack of clinical evidence, the higher costs than other dialysis options, and the potential for a substantial resource impact if recommended it was felt that a recommendation could not be made relating to assisted PD. Assisted PD is discussed as an option for people who have chosen home therapies in evidence report B, Modalities of RRT.
NHSE, Specialised Commissioning, Renal Services CRG	Short Guideline	6	17	We have very considerable concerns about these statements. There is still considered to be clinical equipoise as to whether HDF prolongs life or reduces cardiovascular events (Nistor et al. Cochrane Database Syst Rev 2015). It is accepted that current trial data is too diverse including low flux HD along with high flux HD, pre and post dilution and differing substitution volumes, to be definitive about outcomes. On this background, NIHR (and IRAS) have recently approved a UK RCT comparing high flux HD and HDF. The data used for economic evaluation for this guideline is similarly flawed. This is particularly important as there are considerable resource implications associated with adoption for all, which we feel are underestimated in the economic analysis. We do not think that this statement should be included. If HDF in centre is recommended as treatment, then it makes no sense to not recommend at home also. We note that this statement is made in the context of discussion that patients at home usually dialyse more frequently and the fact that HDF is not routinely available as an option for home therapy. Some patients dialyse at home more frequently; the advantage of home haemodialysis is the ability for the patient to more easily tailor their dialysis prescription to enable goals. This may include more frequent or prolonged dialysis, which has been associated with improved patient outcomes. However, trial data is incomplete and there is no comparison of increased frequency or prolonged HD vs HDF. Moreover for some patients at home using dialysis technology with lower dialysate flow, increased weekly dialysis (compared to in-centre) is	Thank you for your comment. Based on the feedback during the consultation process the committee have agreed to weaken the recommendation for HDF in centre from a strong offer recommendation to a weaker consider recommendation. The committee agree that there is some uncertainty in the evidence, but overall consider that it is strong enough to support a considerrecommendation to use HDF over HD when done in centre. This is also likely to reduce the resource impact to the NHS and uptake is likely to be lower with this type of recommendation. We note that you consider resource implications to be underestimated. Cost implications of using HDF over HD were considered in detail and this is described in full in the modelling appendix. As specifics issues have not been identified no changes have been made relating to this. The committee considered the exact interventions in the trials included in the review. They noted that while some studies did compare HDF with low flux HD, at least half did not and that a subgroup analysis found no impact in reducing heterogeneity by dividing the comparison along those lines. The committee also noted that all of the RCTs included in the review assessed on-line HDF. The committee agreed it was important to focus on HDF as opposed to HF or AFB and hence did not include studies looking at those interventions. The committee have also reviewed the option of home HDF. The committee acknowledge that there are no trials of this option and that there may be greater concerns around water

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				required to meet minimum small molecular clearance. This is acceptable if performed in the context of appropriate discussion of dialysis goals but should not necessarily be interpreted as increased overall clearance of either small or middle molecules. There is no mention in this section of individual tailoring of dialysis regimes, whether HD or PD, to patients' goals and residual renal function. There has been evidence for some years that maintenance of residual renal function is important for survival in PD (CANUSA study. Bargman et al J Am Soc Nephrol 2001) and evidence is accumulating for the same phenomenon in HD. Incremental start of HD may be a method of preserving renal function (Vilar E et al. Nephrol Dial Transplant 2009) and may be important for both residual renal function preservation and improved quality of life. We understand that the scope may not extend to discussion in this much detail. However, the same argument could be made for the discussion of HDF vs HD and thus we feel that these areas should also be covered as they are very relevant for the commencement of dialysis therapies.	purity. However they also agree that conceptually there is no reason to expect that the benefits of in centre HDF would not be seen at home. The committee were aware of a number of centres currently offering home HDF. Taking all this together the committee chose to recommend either HD or HDF at home. Incremental dialysis was not identified as a priority area for inclusion in the scope at the stakeholder workshop or during the consultation on the scope. We have highlighted this topic with the NICE surveillance team.
NHSE, Specialised Commissioning, Renal Services CRG	Short Guideline	7	1	We feel that this statement needs alteration to 'at least 2 weeks' before the anticipated start of dialysis. To predict the need to start dialysis to this accuracy is simply not possible. Patients are more likely to perform PD if they are started directly onto PD with no 'emergency' HD. PD access should therefore be created in a time frame to ensure that PD can commence when RRT is required.	Thank you for your comment. The assessment for RRT will have taken place a year before it is likely to be required. This will ensure that the rate of decline of renal function for that individual is considered when timing the creating of dialysis access
NHSE, Specialised Commissioning, Renal Services CRG	Short Guideline	11	3	As with the comments in 1.2.3 (Page 4, Line 14) , we feel that psychological support can be offered by a wide variety of professionals within the renal team, as well as trained peer supporters.	Thank you for your comment. The purpose of this recommendation is to recognise that psychological support may be required and to discuss what might be available rather than who should provide it.
NHSE, Specialised Commissioning, Renal	Short Guideline	12	1	We feel that this should include copies of, or access to, all renal clinic letters along with access to appropriate blood test results, for instance via Patient View or other methods if required.	Thank you for your comment. We now refer to this in the committee discussion of the evidence in evidence report K information, education and support.

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Services CRG					
Polycystic Kidney Disease Charity	Short Guideline	12	11	1.8.7 – How will these discussions be monitored and evaluated?	Thank you for your comment. These discussion will be recorded in the medical notes, letters etc. They will be monitored in the same way as for any other discussion with a health or social care professional.
Polycystic Kidney Disease Charity	General	Gene ral	General	We welcome the new Guideline and its aim to deliver best and improved practice, in particular the emphasis on information, education and support	Thank you for your comment.
Polycystic Kidney Disease Charity	Short Guideline	Gene ral	General	'Dialysis via vascular access' is acceptable as an umbrella term to refer to both HD and HDF.	Thank you for your comment. To avoid confusion and in response to other stakeholder comments we have replaced the phrase vascular access with HD/HDF
Polycystic Kidney Disease Charity	Short Guideline	4	14	1.2.3 - How will psychological/psychiatric assessment be monitored and evaluated?	Thank you for your comment. Usual practice is that the assessment will be recorded in the person's notes and shared with thethem. Any actions will be followed up by the health and social care professionals concerned in the same way as for all assessments.
Polycystic Kidney Disease Charity	Short Guideline	5	4	1.3.1 – It is imperative that unit staff (doctors, nurse, surgeons) do not indicate a preference for a particular modality in the initial discussions with patients. Some patients have commented that there is sometimes a tendency to start with talking about dialysis rather than transplant first. Moreover the RRT choice should be correctly documented on letters and patients' records.	Thank you for your comment. We have discussed the importance of offering choice in the context of shared decision making in evidence report B, Modalities of RRT. We now refer to recording a person's preferences in their notes.
Polycystic Kidney Disease Charity	Short Guideline	9	6	1.7.1 – We welcome the inclusion of a specialist dietitian referral at this stage. We would like this to be offered to all pre-RRT patients, not just those about to start dialysis or conservative management. However, this recommendation will be challenging to implement because of the variation in level of dietary support available in renal units.	Thank you for your comment. Given the lack of evidence as well as the potential for resource impact these recommendations were based around current practice. It was considered current practice for dietary advice to be given after transplantation although who provided this advice varied and may not be a specialist renal dietician. In the absence of evidence and the potential resource impact a recommendation on the assessment of people on conservative management could not be made.
Polycystic Kidney Disease Charity	Short Guideline	9	23	1.7.4 – We welcome recognition of the need for individualised information, advice and ongoing support on dietary management. There is a widespread lack of reliable consistent information across the NHS on these topics. Some units offer poorly written fact sheets with limited content that doesn't	Thank you for your comment. The committee support the production of information that meets recognised standards but the production of this is outside of the remit of a NICE guideline.

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				cover the wide range of possible foods and drinks; others have more comprehensive fact sheets. There should be one agreed set of fact sheets, Information Standard accredited, developed and implemented by all. We recommend the production and publication of a nationally available resource – free to use by patients and healthcare professionals – on dietary management. This would save Trusts money having to create their own and would set a national standard that could be used in management and developing research outcomes.	
Polycystic Kidney Disease Charity	Short Guideline	10-12	5	1.8 – We welcome this section. However, as per our comment on 1.7.4, we would like to see consistency in the information provided. Each unit seems to have its own documents.	Thank you for your comment. NICE guidelines are unable to endorse or develop specific information resources.
Polycystic Kidney Disease Charity	Short Guideline	12	4	1.8.5 The Guideline directs people to 'other sources of information and support'. It should explicitly also state 'Direct people to patient support groups, either locally or nationally'. Moreover, we have noted that inappropriate links to unreliable websites have been provided to some patients by nurses. Unit staff also seem unaware of support groups and should be asked to mention these during appointments with patients and families.	Thank you for your comment. This is covered by the use of the term peer support (1.8.5) The committee support the provision of information in accordance with recognised standards but it unable to endorse any specific sources
Polycystic Kidney Disease Charity	Short Guideline	13		19 - Uncertain if this is the right section. After creation of the fistula, it is important that all healthcare professionals and patients are aware of the important of vein preservation. Whenever possible, multiple blood tests from veins where fistula might be place should be avoided to avoid trauma and improve chances of successful fistula.	Thank you for your comment. This recommendation has been moved to the section 'planning dialysis access formation'. Vein preservation was not the focus of the evidence review for this scope topic.
Polycystic Kidney Disease Charity	Short Guideline	14	General	We welcome all the research recommendations made by the committee.	Thank you for your comment.
RCPCH	General	General	General	Please note that the RCPCH have no comments to make on this consultation.	Thank you for your comment.
Renal	Evidence	57	5	In relation to the treatment effect, we are surprised that it was	Thank you for your comment. Whereas it is true that those new

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Association UK	Review B			the committee's consensus that "if anything, HDF would be expected to be more effective in naïve patients as they would not have been exposed to potential downsides of less "efficient" forms of dialysis." We believe that (if it works by removing middle-sized toxins) HDF is likely to be less effective in people new to dialysis, as they have residual renal function which will continue to provide them with middle molecule clearance for first 6-24 months of treatment.	to dialysis would have (relatively) preserved middle molecule clearance the committee considered that this would be diminishing in all patients at end stage and the initiation of HDF would clear these molecules with greater efficiency as the renal function declined. Furthermore, the committee considered that the benefits of HDF, were not necessarily completely confined to enhanced middle molecule clearance, and all dialysis patients may derive benefit from this.
Renal Association UK	Evidence Review B	57-58	41	We would like to challenge the statement "…there was evidence for all comparisons except for conservative management vs RRT, which was only available for age 75 years and older." Due to the inclusion criteria chosen the Committee has included only two papers in this area – Murtagh FE et al 2007 and Chandna SM et al 2011 – both of which looked at only 75+. The Committee seem to have purposively excluded the paper by Hussain et al 2013 (it is included in the excluded studies table) and overlooked the paper by Verberne 2016, both of which demonstrate that "the extent to which RRT reduces morality" is also "not clear" in the 70+ group. Both of these appear eligible for inclusion, in particular including multivariable adjustment in comparisons. We appreciate that an evidence bar has to be set somewhere, but by excluding lots of non-randomised studies that look at patients under 75 (included in the systematic review by Foote et al, 2016), the NICE conclusions fail to recognise that "the extent to which RRT reduces morality" is "not clear" in some groups under 75. While we recognise the contribution of age, experts in comprehensive conservative care not on the Committee feel that co-morbidity and fragility are at least as important as age and worry about the use of an age threshold. We wonder whether the Committee would consider reviewing	Thank you for your comment. The studies you reference did not meet the protocol minimum for adjustment criteria. However, the committee agree that age is not the sole indicator of likely benefit of RRT and that for some people under 75 yrs RRT may not definitively reduce mortality. The committee believes the current wording of the recommendations reflects this adequately. The committee have amended the wording of the committee's discussion of the evidence in evidence report B, Modalities of RRT to convey this more accurately.

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				the excluded studies again and whether the they could use that evidence, along with their experience, to re-consider whether the following statement might not apply to some groups of people under the age of 75: "From the evidence identified, it is not clear whether or to what extent RRT reduces mortality in frail, older people." **References:** Murtagh FE, Marsh JE, Donohoe P, Ekbal NJ, Sheerin NS, Harris FE. Dialysis or not? A comparative survival study of patients over 75 years with chronic kidney disease stage 5. Nephrology Dialysis Transplantation. 2007; 22(7):1955-62. Chandna SM, Da Silva-Gane M, Marshall C, Warwicker P, Greenwood RN, Farrington K. Survival of elderly patients with stage 5 CKD: comparison of conservative management and renal replacement therapy. Nephrology Dialysis Transplantation. 2011; 26(5):1608-14. Hussain JA, Mooney A, Russon L. Comparison of survival analysis and palliative care involvement in patients aged over 70 years choosing conservative management or renal replacement therapy in advanced chronic kidney disease. Palliative Medicine. 2013; 27(9):829-39. Verberne WR, Geers AB, Jellema WT, Vincent HH, van Delden JJ, Bos WJ. Comparative Survival among Older Adults with Advanced Kidney Disease Managed Conservatively Versus with Dialysis. Clin J Am Soc Nephrol. 2016 Apr 7;11(4):633-40. Foote C, Kotwal S, Gallagher M, Cass A, Brown M, Jardine M. Survival outcomes of supportive care versus dialysis therapies for elderly patients with end-stage kidney disease: A systematic review and meta-analysis. Nephrology (Carlton). 2016 Mar;21(3):241-53.	
Renal Association UK	Evidence Review B	106	General	Table 29. There are various ways of delivering HDF which need to be taken into account in outcome comparisons. Earlier studies used off-line HDF rather than on-line HDF (which makes higher dose/ volume HDF possible, but requires production of sterile substitution fluid in each renal unit). Fluid can also be	Thank you for your comment. The committee noted the exact method of delivery of intervention for each study but did not consider these to be inclusion/exclusion criteria. The committee considered the role of convection volume and this is discussed in the discussion section of the review. More

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				replaced before the filter (pre-dilution) or after the filter (post-dilution). The exclusion criteria do not mention these. It is also now widely believed that the dose/ volume of HDF is critically important, with clinical benefits predominantly seen in patients achieving high-volume HDF. This does not appear to have been considered by the NICE group.	information has been added to this section on volume. In brief the committee agree that people are more likely to see a greater benefit of HDF over HD at higher convection volumes but that the evidence is not strong enough to support definitive thresholds at which the benefit does or does not exist.
Renal Association UK	Evidence Review B	228	General	Fig 20 & 21: We are not sure why it was chosen to use fixed effects for these analyses. Fixed effect meta-analysis assumes all studies are estimating the same (common) treatment effect. Whereas random effect meta-analysis allows for some differences across studies in the true treatment effect due to differences in populations etc. We feel the latter is more appropriate for this analysis. When we reproduced the forest plots using a random effects model the effect was no longer statistically significant. When we re-ran the analyses (with random effects)*, we got the following RRs (95% CIs): HDF vs low-flux HD: 0.66 (0.32-1.38) HDF vs high-flux HD: 0.92 (0.61-1.39) HDF vs HD overall: 0.84 (0.64-1.10) The evidence in favour of HDF therefore relies on the use of fixed effect models, which we do not believe are the most appropriate in this situation. * This work was undertaken by Dr P Whiting, NIHR CLAHRC West, Bristol.	Thank you for your comment. Typically NICE methods are to use fixed effects meta-analyses unless there is considerable unexplained heterogeneity at which point random effects meta-analyses may be used. The committee re-discussed the evidence following consultation. They agreed that while there was some heterogeneity the case for using a random effects meta-analysis was borderline. Overall, in response to nstakeholder feedback the committee agreed to use a random effects model in the clinical evidence review. This has not affected the point estimate but has, predictably, widened the confidence intervals. The point estimate continues to show a clinically important benefit of HDF over HD and the confidence intervals still only cross one relative MID boundary and therefore the evidence is still downgraded just once for imprecision. Even using this more conservative model (potentially over-emphasising the uncertainty of the benefit of HDF), the committee's overall conclusions about the evidence are maintained. However, due to other concerns highlighted by stakeholders this recommendation has been changed to 'consider HDF'
Renal Association UK	Evidence Review B	271	General	Studies excluded: Two RCTs comparing HDF and HD were included in previous systematic reviews and meta analyses, but not included in this one or listed in the table of excluded studies. Ward RA, Schmidt B, Hullin J, Hillebrand GF, Samtleben W. A comparison of on-line hemodiafiltration and high-flux hemodialysis: a prospective clinical study. *J Am Soc Nephrol*	Thank you for your comment. Ward 2000 was included in the review. Locatelli 2010 was not identified in the review but does meet the criteria, thank you for highlighting this. The study has now been incorporated into the evidence review. This additional evidence was discussed with the committee but it did not substantially change the point estimate or the confidence intervals of the meta-analysis and therefore did not change the

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				2000; **11**(12): 2344-50. Locatelli F, Altieri P, Andrulli S, et al. Hemofiltration and hemodiafiltration reduce intradialytic hypotension in ESRD. *J Am Soc Nephrol* 2010; **21**(10): 1798-807. The reason that they were not picked up by the NICE search strategy is unclear.	recommendations.
Renal Association UK	Short Guideline	General	General	**General points about the guideline –** The Guideline Group are to be congratulated on their comprehensive approach to the report The section on coordination of care [1.9] (including scheduling appointments, giving people the details of the person responsible for their care and considering multi-morbidity) is very welcome. However, we believe that the Guideline group has missed opportunities in several areas. Prediction of CKD progression: Consideration of the rate of decline of renal function is relevant to the discussion around the preparation of dialysis access. Validated tools exist to predict decline and if adopted could improve many of the statements and care eg…access within 6 months of dialysis, timing of pre-emptive transplant listing and timing of Transplant, conservative care. However existing risk prediction equations require validation in the NHS and should therefore be the subject of a research recommendation. Choice of in-centre dialysis: We do not believe that the evidence is sufficient to recommend HDF preferentially over HD. Choice of a home therapy: There is a missed opportunity to promote home dialytic therapies given benefits in quality of life, impact on outcomes and evidence of cost-effectiveness. There appears to be very little reference to the benefits of frequent regimens at home and patient preferences and evidence around qualitative and cardiovascular benefits (2 RCTs – Culleton BF et al *JAMA* .1299-1291:(11)298;2007 .doi:10.1001 and FHN study N Engl J Med 2010; 363:2287-2300 DOI: 10.1056/NEJMoa1001593). The key reasons for low uptake are often extrinsic barriers and not patient related factors. This draft guidance it currently stands if circulated as i could have a	Thank you for your comment. The prediction of CKD progression was not identified at the stakeholder workshop or during the scope consultation as an area to include this guideline. Some evidence suggested that in-centre HDF was more effective than in-centre HD and was cost effective so the committee agreed, when dialysis via vascular access was in centre, that to recommend HDF rather than HD should be considered when dialysis was in centre. Based on the feedback during the consultation process the committee have agreed to weaken the recommendation for HDF in centre from a strong offer recommendation to a weaker consider recommendation. The committee agree that the evidence is low quality, but overall consider that it is strong enough to support a consider recommendation to use HDF over HD when done in centre. This weaker recommendation probably reduces the resource impact with uptake possibly being lower. The committee discussed that there was no evidence in this review of any clinically importance differences comparing home with in-centre dialysis but noted that there are other considerations in recommending either of these forms of dialysis. Based on their experience, the committee noted that some people gained a benefit to their quality of life and ability to continue with their usual daily activities when performing dialysis at home. Dialysis at home is supported by these recommendations as it is implicit in offering such a choice that home dialysis facilities would need to be readily available. However the committee also noted that for some people who are unable to manage their own dialysis at home or who are particularly concerned about potential adverse effects of

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				detrimental impact on sustaining home programmes in NHS trusts, and would go against patient demand and preferences. It also contradicts existing research and other initiatives such as KQUIP and previous NICE guidance. A research recommendation should be to establish the clinical and cost effectiveness of frequent and extended home haemodialysis, considering the impact of frequency at home. The use of peritoneal dialysis in unplanned start patients: this approach avoids the requirement for central venous catheters and is associated with increased uptake of PD. Data from the 18th Renal Registry Report, Multisite Dialysis Access audit, indicates PD is used half of renal units for at least some patients known to the service less than 90 days – this is more likely to occur through the use of percutaneous rather than surgical catheter insertion. The use of assisted peritoneal dialysis – this service is commonly offered in the UK and provides a significant contribution to PD in the UK. Young adult care: Stress the importance of a well organised young adult support clinic/service (including paediatric to adult care transition). The benefits are well described. Transplant outcomes remain inferior for 15-25 year olds Conservative care: the quality of this is variably delivered across Renal/community Units. Should there be more focus on this? Patient reported experience measures (PREMS): the UKRR has collected PREM data for the last 2 years, this information has potential to transform the quality of care. Should submission of such data to UKRR be recommended? **Communication** There is no recommendation in the report around patients having access to their medical records including a requirement for all letters about the patient being copied in to all their correspondence from the renal team. **MDT infrastructure**	dialysis, dialysis at home may have additional risks. The committee concluded that people should be offered a choice according to individual needs and circumstances, rather than promote one option over another. The guideline committee has made a research recommendation on 'What is the clinical and cost effectiveness of home haemodiafiltration versus home haemodialysis, taking into account the impact of frequency?' No evidence was found comparing HD with PD in people who start dialysis in an unplanned way. The guideline committee has made a research recommendation on 'What is the clinical and cost effectiveness of initial haemodialysis versus initial peritoneal dialysis (PD) for people who start dialysis in an unplanned way'? Given the lack of clinical evidence, the higher costs than other dialysis options, and the potential for a substantial resource impact if recommended it was felt that a recommendation could not be made relating to assisted PD. Assisted PD is discussed as an option where home therapy is chosen in evidence report B, Modalities of RRT In evidence report M coordinating care the committee confirmed that the recommendations were applicable to children and young people. They highlighted the importance of good communication and coordination of care when a young person is transitioning to adult services. We cross refer to NICE's guidance on Transition from children's to adults' services for young people using health or social care services (NG43). The guideline discusses what conservative management is in evidence report B, Modalities of RRT. We now refer to variation in how it is delivered. It is outside of the scope of this guideline to recommend submission of data to the UKRR. We now refer to copying people in on correspondence between

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				There is no specific recommendation around care being delivered within a specialist clinic with an MDT framework. **Financial modelling** Care should be taken on utilizing reference costs. It is highly likely that these are not accurate. There are no recommendations for biochemical, haematological, fluid or BP parameters for patients on dialysis. Some of the points are clearly trying to encompass adult and paediatric populations with comments such as 'developmental stage' and this can make some of the text less fluid than if just dealing with adult OR paediatric populations.	health and social care professionals in evidence report K information, education and support. No evidence was found on delivering care within a specialist clinic with an MDT framework. The guideline committee was therefore unable to recommend this. The committee highlighted the concerns regarding the NHS reference costs for dialysis during development and this was investigated and discussed in detail. These considerations are documented in Chapter B. We also explored whether there were other options to obtain more accurate cost estimates including consulting with representatives of the clinical reference group and it was agreed there was no better option at this time. No better up to date information has been provided at consultation. Some additional considerations have been added to Chapter B based on stakeholder's comments. The committee took into account uncertainties in costs and cost effectiveness when making recommendations and this is described in Section 1.10 The committee's discussion of the evidence. Biochemical, haematological, fluid and BP parameters for patients on dialysis were outside of the scope of this guideline We believe that the recommendations are clear where they refer to both adults and children. Separate recommendations would lead to a high level of repetition.
Renal Association UK	Short Guideline	General	General	As the guideline relates to an integrated programme of care for all people with End Stage Kidney Disease – renal replacement therapy as well as conservative care – we feel the title is misleading and excludes conservative care. Would the committee consider something like "end-stage kidney disease care" or "care for people with end-stage kidney disease"?	Thank you for your comment. The title of the guideline is Renal Replacement Therapy, including transplant and conservative management. The guideline committee did not support the use of the term 'end stage kidney disease'
Renal Association UK	Short Guideline	1	5	Terminology Terminology is very important and there are many names for conservative care.	Thank you for your comment. The guideline committee discussed that all care provided should be comprehensive. The term conservative management is used to clearly differentiate it

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				Kidney Disease Improving Global Outcomes, the global non-profit organization developing and implementing evidence-based clinical practice guidelines in kidney disease (www.kdigo.org), held a controversies meeting that considered this and recommended adoption of the term "comprehensive conservative care" (Murtagh et al, 2016). Adoption of this KDIGO terminology was a key recommendation of the International Society of Nephrology end-stage kidney disease summit on integrating care in Sharjah, UAE, in March 2018. (Report in preparation.) We would suggest the guideline adopts the internationally recommended terminology – comprehensive conservative care. **Reference** Murtagh FE, Burns A, Moranne O, Morton RL, Naicker S. Supportive Care: Comprehensive Conservative Care in End-Stage Kidney Disease. Clin J Am Soc Nephrol. 2016 Oct 7;11(10):1909-14.	from end of life care. In the experience of the guideline committee conservative management is widely understood and used by health professionals in the UK. CKMAPPS - UK-wide survey of conservative kidney management found that conservative management is the most widely used term - Okamoto, I., Tonkin-Crine, S., Rayner, H., Murtagh, F. E., Farrington, K., Caskey, F., Tomson, C., Loud, F., Greenwood, R., O'Donoghue, D. J. & Roderick, P. (2015) Conservative care for ESRD in the United Kingdom: a national survey, Clin J Am Soc Nephrol. 10, 120-6.
Renal Association UK	Short Guideline	3	5	he rate of GFR decline and dialysis start. responses to the GFR start recommendation are presented below. The main points of concern are for the y of the eGFR equation at low GFRs and that rate of renal function decline should be factored into the placement therapy preparation discussion. Concerns regarding the accuracy of the eGFR formula and Individualizing dialysis start The accuracy, precision and bias for eGFR when the GFR is <15 is significantly impaired. (http://cjasn.asnjournals.org/content/6/4/937.long) This is particularly true in sarcopenic older women in whom eGFR will significantly overestimate kidney function. Thus, although the timing of dialysis start bases its recommendations on findings from the IDEAL study, the conclusion should be qualified as a result of clinician judgement since in late start group of that study, the mean eGFR was actually 9.8ml/min and relatively	Thank you for your comment. The guideline committee used the level of eGFR that was aimed for in the IDEAL study as this is the lowest level at which it is believed safe to start dialysis. This also reflected current practice in the experience of the committee. We now refer to the importance of early assessment for RRT in order to ensure the person starts on the dialysis modality of their choice in the committee discussion of the evidence in evidence report . A starting RRT. The rate of decline of renal function should be factored into the decision as to when to start the assessment for renal function or conservative management (see evidence report E when to assess)

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				few managed to start with an eGFR between 5-7. Therefore we should avoid suggesting a specific range of eGFR at which RRT should start but rather focus on individualising starting dialysis for each patient according to clinical characteristics. The other finding from IDEAL is that patients choosing PD were less likely to receive their chosen treatment if they were allocated to the late start group, therefore a comment about timely preparation of PD tube insertion and awareness of this would be appropriate (see Johnson D et al 2012 below). be useful to consider consideration of rate of decline of renal function in planning RRT start, since those in whom deterioration of kidney function progresses more rapidly are at greater risk of unplanned/unprepared start, and less at risk of unnecessarily early start. In anticipation of this patients with stage 5 CKD should be in a position to start dialysis with an eGFR of <10 ml/min. **References:** N, Grams ME, Levey AS, et al. Multinational assessment of accuracy of equations for predicting risk of kidney failure: A meta-analysis. JAMA 2016;315:164-74. Couchoud CG, Beuscart JB, Aldigier JC, et al. Development of a risk stratification algorithm to improve patient-centered care and decision making for incident elderly patients with end-stage renal disease. Kidney Int 2015;88:1178-86. N, Katz R, De Boer IH, et al. Development and validation of a model to predict 5-year risk of death without ESRD among older adults with CKD. Clin J Am Soc Nephrol 2015;10:363-71. E, Polkinghorne KR, Khandakar Y, et al. Predicting 6-month mortality risk of patients commencing dialysis treatment for end-stage kidney disease. Nephrol Dial Transplant 2017;32:1558-1565. BA et al A randomised, controlled trial of early versus late initiation of dialysis. NEJM 2010;363:609-619 n D et al. Effect of timing of dialysis commencement on clinical outcomes of paitent with planned initiation of peritoneal dialysis in the IDEAL trial. Perit Dial Int 2012 ;32:595-604	
Renal	Short	4	11	Psychological support-focus on this is very welcome (and	Thank you for your comment. The focus on the evidence review

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Association UK	Guideline			should enable business cases for increased appointments to meeting this requirement). However, it would also be reasonable to include focus on other multi-professional team support including access coordinators, transplant coordinators, anaemia coordinators etc..	for this scope topic was psychological assessment. We have amended the committees discussion of the evidence in evidence report F how to assess to acknowledge the contribution of other member of the MDT.
Renal Association UK	Short Guideline	4	24	USS scanning pre Vascular Access - should this also include prior to placement of all AV access including AV grafts	Thank you for your comment. This recommendation has been moved to the section entitled 'planning dialysis access formation'.
Renal Association UK	Short Guideline	5	20	1.3.4 In many people who require RRT the benefits of transplantation will be outweighed by the risks. Accurate and supportive information and follow-up should be provided to individuals who are not felt to be fit for kidney transplantation. Many patients who are unfit ask if they can have a transplant. The likelihood is that more people would want an answer to this question but do not ask. Therefore it would represent good practice to discuss transplantation with all patients. The statement in the supporting evidence that transplantation offers a benefit across all ages is not corrected for age and comorbidity and contradicts the figures that show that only a subset of patients receiving dialysis are on the waiting list for transplantation despite being assessed for it. Time to equal risk and net survival benefit post transplantation rises with increasing age. In other words, the instantaneous risk of death increases markedly at the time of transplant and takes a longer to return to baseline in older and more highly co-morbid individuals. **Reference** Wolfe RA, Ashby VB, Milford EL, Ojo AO, Ettenger RE, Agodoa LY, et al. Comparison of mortality in all patients on dialysis, patients on dialysis awaiting transplantation, and recipients of a first cadaveric transplant. The New England journal of medicine. 1999 Dec 2;341(23):1725-30.	Thank you for your comment. The committee agree that transplant may not be beneficial in some people, and that in general people who are older and more frail are less likely to see a benefit (although that does not mean they will not). The recommendations on choosing modalities of RRT or conservative management make it clear that all options should be discussed in the context of shared decision making. The wording of the text you refer to has been amended to clarify its meaning. The specific study you reference did not meet the protocol for the relevant review as it did not adjust for all key confounders in its analysis.
Renal Association	Short Guideline	6	3	1.3.6 Pre-emptive Transplantation and listing. This is a clear need within the community with major unwarranted variation	Thank you for your comment. The recommendation makes it clear that a pre-emptive transplantation should be offered (if

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UK				between centres. Therefore, could the wording be strengthened to stress this is the gold standard treatment of choice for suitable patients wherever possible. Should it be worded as " …offer pre-emptive live donor transplant **and** deceased donor transplant listing". Many units list even when a LD may be available until donor availability is clear	appropriate). Thecommittee wanted to convey the benefits of pre-emptive transplantation and the current recommendations do not preclude someone being listed whilst the former option is being explored. We have edited the committee's discussion of the evidence in evidence report B,Modalities of RRT to refer to transplant listing even when a living donor may be an option.
Renal Association UK	Short Guideline	6	6	1.3.7 It is not clear why the BMI cut-off of 30 is used in this recommendation – since most units use higher BMI levels as part of eligibility criteria for transplantation and indeed the guideline itself suggests that there are benefits of transplantation at BMIs greater than 30	Thank you for your comment. The original intention of this recommendation was to discourage the practice of refusing transplantation for people solely based on people having a BMI greater than 30, a practice the committee agreed does still occur (although not commonly). Based on the comments we have received, we have altered the wording in an effort to make this clearer.
Renal Association UK	Short Guideline	6	10	1.3.8 This draft guideline misses the opportunity to recommend 'offering a **home therapy** as the preferred dialysis modality' – which is in line with existing documents that support greater use of treatment outside hospital (eg NHS 5 Year Forward View 2014), as well as evidence that people who take a greater role in their own health care have better outcomes (Kings Fund; Supporting people to manage their health. An introduction to patient activation, 2014). There is evidence that home dialysis is associated with better quality of life and outcomes (registry data), avoidance of harm (eg the potential to avoid the 22% increase in mortality associated with the 3 day inter-dialytic gap), as well as health economic benefits. There appears to be very little reference to the benefits of frequent regimens at home evidence around qualitative and cardiovascular benefits (2 RCTs - Culleton et al and FHN study). The key reason for low uptake are often extrinsic barriers and not patient related factors. Furthermore, the absence of such a recommendation is at variance with previous NICE guidance (CG125 & TA 48) and initiatives from KQuIP. In the same way as many patients will not be suitable for a transplant many will not be suitable for a home dialysis therapy – but the key point all patients should be given this opportunity where possible. Equally there is no recommendation that patients on dialysis (eg centre based) should be given the opportunity to take a	Thank you for your comment. The committee discussed that there was no evidence in this review of any clinically importance differences but noted that there are other considerations in recommending home or in-centre dialysis. Based on their experience, the committee noted that some people gained a benefit to their quality of life and ability to continue with their usual daily activities when performing dialysis at home. However the committee also noted that for some people who are unable to manage their own dialysis at home or who are particularly concerned about potential adverse effects of dialysis, dialysis at home may have additional risks. Shared haemodialysis care is now mentioned in the committee's discussion of the evidence in evidence report B, Modalities of RRT. Given the lack of clinical evidence, the higher costs than other dialysis options, and the potential for a substantial resource impact if recommended it was felt that a recommendation could not be made relating to assisted PD. Assisted PD is discussed as an option for people who have chosen home therapies in the committee's discussion of the evidence in evidence report B, Modalities of RRT. None of the cited references met the inclusion criteria for this review protocol.

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				role in their own care (supported self-care / **shared haemodialysis care**). There is also no recognition of the role of **assisted peritoneal dialysis** although this is routinely available and widely used. **References** Culleton BF et al Effect of Frequent Nocturnal Hemodialysis vs Conventional Hemodialysis on Left Ventricular Mass and Quality of Life. A Randomized Controlled Trial *JAMA* . .1299-1291:(11)298;2007doi:10.1001 The FHN Trial Group. In-Center Hemodialysis Six Times per Week versus Three Times per Week. N Engl J Med 2010; 363:2287-2300 DOI: 10.1056/NEJMoa1001593 Marshall MR, Polkinghorne KR, Kerr PG, Agar JW, Hawley CM, McDonald SP. Temporal Changes in Mortality Risk by Dialysis Modality in the Australian & New Zealand Dialysis Population. Am J Kidney Dis. 2015;66(3):489-98. Nitsch D, Steenkamp R, Tomson CR, Roderick P, Ansell D, MacGregor MS. Outcomes in patients on home haemodialysis in England and Wales, 1997-2005: a comparative cohort analysis. Nephrol Dial Transplant. 2011;26(5):1670-7. Walker R, Marshall MR, Morton RL, McFarlane P, Howard K. The cost-effectiveness of contemporary home haemodialysis modalities compared with facility haemodialysis: a systematic review of full economic evaluations. Nephrology (Carlton). 2014;19(8):459-70. Pike E, Hamidi V, Ringerike T, Wisloff T, Klemp M. More Use of Peritoneal Dialysis Gives Significant Savings: A Systematic Review and Health Economic Decision Model. J Clin Med Res. 2017;9(2):104-16. Fotheringham J, Fogarty DG, El Nahas M, Campbell MJ, Farrington K. The mortality and hospitalization rates associated with the long interdialytic gap in thrice-weekly hemodialysis patients. Kidney Int. 2015;88(3):569-75.	

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Renal Association UK	Short Guideline	6	18	Recommendation 1.3.11 For people who opt for dialysis via vascular access: Offer HDF rather than HD if in centre (hospital or satellite unit) Offer either HDF or HD if at home, taking into account availability of home HDF, and patient preference. We are very concerned that this draft NICE recommendation does not take into account the significant concerns that nephrologists in the UK and globally have regarding the evidence base generated by the current published RCTs comparing HD vs HDF. Randomization in the Spanish trial (Maduell et al, 2013) appears to be have been undermined or implemented incorrectly, because prognostic factors (especially age, diabetes, other co-morbidity and central venous catheter use) were clearly not balanced the intervention groups. Because patients in the HD group were at considerably higher risk of mortality, the longer survival in the HDF group did not necessarily arise from HDF leading to lower mortality than HD. This RCT contributes 47% weight to the morality TTE analysis (Fig 20, page 228 in the Evidence Review B) and 35% weight to the mortality RR analysis (Fig 21, page 228 in the Evidence Review B). The Turkish RCT (Ok et al, 2013) also has a number of significant flaws that mean the outcome of the trial is, at best, questionable. As the NICE drafting panel correctly pointed out, 10% of participants randomised to HDF in this RCT were withdrawn due to blood flow problems compared with 0% of participants randomised to HD. You state that "the study was not explicit as to the origin of this differential drop out, however it appeared as if the inclusion criteria (based on a fistula blood flow of >250ml/min) had been applied throughout the course of the trial in the in-centre HDF arm but not in the HD arm". This is suggestive of selective removal of patients with low blood flow rates from the HDF arm. As older, more co-morbid patients have lower blood flow in their vascular access, this	Thank you for your comment. The committee discussed the evidence in the Maduell study. The baseline differences you highlight were originally captured in the risk of bias rating for the study. However, the committee do not consider this a reason to exclude the trial altogether from the analysis as you have done. It is worth noting that the multivariable analysis in the study itself that adjusted for these differences found that this did not reduce the magnitude of the benefit of HDF over HD. As you point out the committee previously discussed the differential drop out in the Ok study, their discussion is noted in the review document and again this was considered in the risk of bias assessment of the study. Typically NICE methods are to use fixed effects meta-analyses unless there is considerable unexplained heterogeneity at which point random effects meta-analyses may be used. The committee re-discussed the evidence following consultation. They agreed that while there was some heterogeneity the case for using a random effects meta-analysis was borderline. Overall, given stakeholder feedback the committee opted to use a random effects model in the clinical evidence review. This has not affected the point estimate but has, predictably, widened the confidence intervals. The point estimate continues to show a clinically important benefit of HDF over HD and the confidence intervals still only cross one relative MID boundary and therefore the evidence is still downgraded just once for imprecision. Even using this more conservative model (potentially over-emphasising the uncertainty of the benefit of HDF), the committee's overall conclusions about the evidence are maintained. The committee acknowledge the challenge and potential importance of conducting further research in the area. The committee have reviewed the recommendations in light of the various comments on ongoing research. Overall the committee have taken into account what uncertainty there is in the current evidence base, what information may or may not be gained

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				suggests there was selective removal of this group of patients from the HDF arm, once again strongly implying the reported outcomes are deeply flawed. This RCT also had multiple missing data points, with patients assumed to be alive. This must greatly increase the risk of bias associated with this RCT, which 18% weight of the mortality RR analysis (Fig 21, page 228 in Evidence Review B). These trials were included in the previous systematic reviews and meta analyses on this topic, which concluded that there was insufficient evidence to recommend the widespread adoption of HDF on the basis of the low quality of the evidence. Wang AY et al, 2014. Nistor I et al, 2015. Mostovaya IM et al, 2014. There have only been two very small RCTs published since these systematic reviews and meta analyses: Mesaros-Devcic et al, 2013: comparing HDF vs low-flux HD with 85 participants with 19 events. Park et al, 2013: comparing HDF vs high-flux HD with 28 participants with 12 events. When we re-ran the analyses (with fixed effects) excluding the Maduel and Ok data*, we got the following RRs (95% CIs): HDF vs low-flux HD: 0.89 (0.74-1.06) HDF vs high-flux HD: 1.65 (0.89-3.06) HDF vs HD overall: 0.93 (0.78-1.11) The evidence in favour of HDF therefore relies on these two flawed RCTs. (We also question the appropriateness of fixed effects models for this analysis, see separate comment below.) It was on the basis of the previous systematic reviews and meta analyses that the following large RCTs have been competitively funded and are underway: H4RT, The high-volume HDF vs high-flux HD Registry Trial, funded by NIHR HTA (15/80/52) £1.5m. Chief investigator Dr Fergus Caskey, Bristol, UK.	through further research and the implications of delaying recommendations until that research becomes available. Based on the feedback during the consultation process the committee have agreed to weaken the recommendation for HDF in centre from a strong offer recommendation to a weaker consider recommendation. The committee agree that there is some uncertainty in the evidence, but overall consider that it is strong enough to support a consider recommendation to use HDF over HD when done in centre. The committee disagree with the assertion that the recommendation is not supported by 'credible evidence'. The cost-effectiveness of HDF has been rigorously developed and examined by the health economic team on the guideline. The committee have also reviewed the option of home HDF. The committee acknowledge that there are no trials of this option and that there may be greater concerns around water purity. However they also agree that conceptually there is no reason to expect that the benefits of in centre HDF would not be seen at home. The committee were aware of a number of centres currently offering home HDF. Taking all this together the committee chose to recommend either HD or HDF at home.

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				CONVINCE, The comparison of high-dose HDF with high-flux HD, funded by Horizon2020 €7m. Chief investigator Dr Peter Blankestijn, Utrecht, NL. The H4RT was fully supported by the UK Kidney Research Consortium Dialysis Study Group, the UK renal community's expert group on dialysis. H4RT co-investigators include leading UK experts in HDF: Dr Andrew Davenport (London), Prof Ken Farrington (Stevenage), Dr Sandip Mitra (Manchester) and Dr Albert Power (Bristol). For all the above reasons, Kidney Disease Improving Global Outcomes, the global non-profit organization developing and implementing evidence-based clinical practice guidelines in kidney disease (www.kdigo.org) has decided not to review the evidence base for HDF until the RCTs currently testing the effectiveness of high-volume HDF are completed. (Personal communication Prof David Wheeler, co-chair of KDIGO 7th May 2018.) As we do not believe that the current published evidence supports the clinical effectiveness of HDF, nor do we believe there is any basis for concluding it is a more cost-effective treatment. We are also concerned that the guideline will recommend HDF for patients on home HD. Not only are the conclusions about the superiority of HDF unfounded, it also fails to recognise the additional risk patients on home HDF are at in terms of bacterial/ endotoxin contamination, but more importantly chemical contamination as carbon fibres are smaller and not back purged overnight. We feel this recommendation is unsafe. In conclusion, it is the view of the Renal Association, after listening to the advice of our member experts in HD and HDF, that this draft NICE recommendation is not supported by credible evidence. Further, we are concerned that if published it will imply superiority of HDF over HD and mean that currently funded RCTs in the UK and Europe, designed to generate the	

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				evidence we feel is still needed, may have to be terminated early. Our reading of the evidence is that: There is good evidence that on-line HDF is as safe as high-flux HD. There is no evidence that standard on-line HDF improves mortality, though it may have other beneficial effects particularly reduction in intradialytic hypotension (though cooled dialysate may do just as well). There is some evidence that high volume on-line HDF improves mortality compared with high-flux HD, though in the only study to demonstrate this in an a priori analysis, baseline characteristics were not matched such that there was a significantly higher proportion of older, diabetic patients with cardiovascular disease and central venous catheters in the HD group – a poor prognostic factor. We therefore urge the NICE drafting panel to await the outcome of the two large and well-designed RCTs that together, once reported, will provide the definitive evidence required to produce definitive NICE guidelines. Those guidelines would then have the support of the national and international nephrology community and can in turn be used to commission safe and cost-effective services. In the meantime we suggest a revised recommendation, such as: Current evidence suggests that high-flux HD and on-line HDF both provide satisfactory renal replacement. Patients who experience significant problems with intradialytic hypotension may benefit from on-line HDF or high-flux HDF with cooled dialysate. There is some evidence that high-volume HDF may reduce mortality risk compared to high-flux HD. Further trials are in progress including H4RT in the UK. Offering suitable patients the opportunity to participate in this study should be strongly considered. * This work was undertaken by Dr P Whiting, NIHR CLAHRC West, Bristol.	

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				References: Susantitaphong P, Siribamrungwong M, Jaber BL. Convective therapies versus low-flux hemodialysis for chronic kidney failure: a meta-analysis of randomized controlled trials. *Nephrol Dial Transplant* 2013; **28**(11): 2859-74. Wang AY, Ninomiya T, Al-Kahwa A, et al. Effect of hemodiafiltration or hemofiltration compared with hemodialysis on mortality and cardiovascular disease in chronic kidney failure: a systematic review and meta-analysis of randomized trials. *Am J Kidney Dis* 2014; **63**(6): 968-78. Nistor I, Palmer SC, Craig JC, et al. Haemodiafiltration, haemofiltration and haemodialysis for end-stage kidney disease. *Cochrane Database Syst Rev* 2015; **5**: CD006258. Mostovaya IM, Blankestijn PJ, Bots ML, et al. Clinical evidence on hemodiafiltration: a systematic review and a meta-analysis. *Seminars in dialysis* 2014; **27**(2): 119-27. Mesaros-Devcic I, Tomljanovic I, Mikolasevic I, et al. Survival of patients treated with online hemodiafiltration compared to conventional hemodialysis. *Collegium antropologicum* 2013; **37**(3): 827-32 Park KW, Kyun Bae S, Lee B, et al. The effect of on-line hemodiafiltration on heart rate variability in end-stage renal disease. *Kidney research and clinical practice* 2013; **32**(3): 127-33.	
Renal Association UK	Short Guideline	6	22	1.4.1 There is no comment with regards to type of vascular access – line, fistula, graft. We would suggest that guideline group examine the latest evidence come to a conclusion with regards to the pros and cons of different access types (risks associated with the use of central venous catheters for example). The draft guideline is at variance with the NICE accredited Renal Association clinical practice guideline on vascular access for haemodialysis 6th Edition 2015 : "We recommend that all patients with end stage kidney disease who commence haemodialysis or are on long-term haemodialysis should dialyse with an arteriovenous fistula as first choice, an arteriovenous graft as second choice, a tunnelled venous catheter as third choice and a non-tunnelled temporary catheter as an option of necessity (Evidence level	Thank you for your comment. Technical aspects of access formation were outside of the scope of this guideline.

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				grade 1A).	
Renal Association UK	Short Guideline	7	1	1.4.2 There is general concern that the timing of peritoneal dialysis access is not given the same consideration as for vascular access. In the same way as with vascular access, PD access can be also problematic and indeed 3 month access survival is better for AVF/AVG than for PD catheters (88.4% in use 3 months from dialysis start vs 83.0% for PD catheters (Renal Registry multisite access audit 2017) ie both types of access have significant primary failure rates. Therefore it is better to place PD catheters earlier than absolutely required (ie above the target start GFR 5-7) to ensure that there is time to intervene if it does not work the first time. This does not mean that PD catheters cannot be placed and used immediately, with appropriate clinical care, as part of the management of unplanned start patients – but this is a separate issue from planned access. **Reference** Barnaby Hole et al Nephron 2017;137(suppl1):269–296	Thank you for your comment. The recommendation when to create PD access by open surgical technique was based on the evidence. In the experience of the committee this time frame is sufficient to prevent emergency dialysis access being necessary. This recommendation should be considered in conjunction with starting assessment for RRT or conservative management a year before it is likely to be required. The study you reference is a registry report that did not meet the protocol for the review (adjustment for key confounders).
Renal Association UK	Short Guideline	7	4	1.4.3 This advice needs to be individualised based on the type of access that is planned. Further – the timing of dialysis start is influenced by the rate of decline of renal function and can be estimated using an appropriate Kidney Failure Risk equation as commented above. Para 1.8.6 – starting with a line or even an AV graft does not need a decision to be made 6 months before starting dialysis – they can be used either immediately or within a very few weeks. Page 22 of 29 line 13 – suggests that the 6 month advice is based on "common" practice not evidence of best practice and is designed to "standardise" practice – standardisation in itself should not be the goal of any guideline – the goal is improving patient care and use of resource and this has not been demonstrated.	Thank you for your comment. The use of risk equations are outside of the scope of this guideline. Overall the evidence suggested that the minimum desired time from vascular access creation to initiation of dialysis would be 3-6 months. In the experience of the guideline committee a time frame of six months is required to allow for the possibility of failure and for further interventions to be carried out.
Renal Association UK	Short Guideline	7	18	1.5.4 Patients should be made aware of the risk of encapsulating peritoneal sclerosis (EPS) and consideration should be given to offer the opportunity to switch modality after a numbers of years on PD to reduce this risk. However,	Thank you for your comment. In the experience of the committee there is no need to switch from PD after a specific period of time. No evidence was identified on this topic. We have added your suggestion on the complex decision to switch

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				switching dialysis modality is complex and has multiple components to it including the impact of co-morbidity and suitability for access. Comments about loss of ultrafiltration need to be more detailed or omitted as the relationship between that and the risk of EPS is related to complex components including the loss of the sodium dip (measured at 1 hour in the peritoneal equilibration test), and which is not routinely measured in the UK). This topic has been reviewed in an International Society of Peritoneal Dialysis Society (ISPD) guideline – the summary statements of that guideline provide a nuanced assessment. It would be perhaps more appropriate to state that EPS should be discussed with patients in the context of other risks that they face, but importantly this topic should be a subject for more detailed research. The conclusion of the ISPD EPS guideline is below : *Encapsulating peritoneal sclerosis is a rare condition. There is no evidence to withhold PD as a treatment option because of fear of development of EPS. There is insufficient evidence to support a single rule about optimal length of time on PD to avoid the risk of EPS* *Each long-term patient needs to be considered individually, taking into account the following factors:* *1. Age and prognosis of patient;* *2. Length of time on PD;* *3. Quality of PD (dialysis adequacy, ultrafiltration, peritonitis frequency);* *4. Access to and suitability for transplantation;* *5. Potential risk of HD in the particular patient (hemodynamic stability, vascular access); and* *6. Quality of life of the patient.* *All these items should be discussed and any decision arrived at by shared decision-making.* **Reference:** J Morelle et al, J Am Soc Nephrol. 2015 Oct;26(10):2521-33 E Brown et al, Perit Dial Int 2017; 37 : 362-374.	to the committees discussion of the evidence.
Renal Association	Short Guideline	11	1	Table 2 - Information about treatments – where is the evidence for these statements, are they comprehensive? Care needs to	Thank you for your comments. The wording used reflects the evidence that was identified. We do not specify the content of

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UK				be taken that these statements are evidence based and not prejudicial, and adversely affect individual modality choice. Thus general statements should be made – but specifics avoided unless there is overwhelming evidence for these. For example people on peritoneal dialysis can swim if appropriate steps are taken to protect the peritoneal dialysis catheter exit site; post haemodialysis recovery time is not mentioned. It is more appropriate that high quality patient information is developed through appropriate research processes.	the information recognising that this will vary for each individual. We have added the word 'whether' where we refer to contact sports and swimming. Post-dialysis recovery time was not reported by the studies included in the evidence review. We support the development of high quality information resources meeting the NHS England Information Standard.
Renal Association UK	Short Guideline	11	3	1.8.2 Conservative management No recommendation around coordination with community services including referral to gold standard framework for patients requiring supportive or end of life care?	Thank you for your comment. The committee wanted to keep a clear distinction between conservative management and end of life care. However we do now refer to the coordination of care for people who require end of life care in evidence report M coordinating care.
Renal Association UK	Short Guideline	13	18	Given our belief that the current evidence does not support a recommendation to offer HDF to all patients on in-centre HD, we believe the following key research recommendation should be added: HDF vs HD What is the clinical effectiveness and cost-effectiveness of high-volume HDF compared with high-flux HD for people who opt for in-centre dialysis via vascular access? Renal units offering HDF to their patients are encouraged to do so in the context of one of the RCTs currently evaluating this question, such as the NIHR HTA-funded H4RT. www.bristol.ac.uk/population-health-sciences/projects/h4rt-trial/ www.journalslibrary.nihr.ac.uk/programmes/hta/158052	Thank you for your comment. The current research recommendation on home HDF compared to HD could include high flux HD.
Renal Association UK	Short Guideline	15	2	The Conservative Kidney Management Assessing Practice Patterns Study demonstrated marked differences in the care provided to patients choosing comprehensive conservative care in the UK and very big differences in the likelihood of someone choosing to prepare for dialysis or have comprehensive conservative care depending on which renal unit they attended. Investigating this further has been considered a priority for the renal community and we were encouraged by NIHR to move forwards from CKAMPPS to	Thank you for your comment. The committee recognise the importance of this recommendation and after further discussion they decided not to make it a key research priority because there is an existing ongoing trial. The recommendation is worded so at to be clear and concise and we are unable to signpost to ongoing trials. We now refer to the trial in the committee's discussion of the evidence in evidence report B,Modalities of RRT.

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				undertake a randomised controlled trial of preparing for renal dialysis versus preparing for comprehensive conservative care. This RCT, Prepare for Kidney Care, was funded by NIHR HTA in 2016 and is currently open and recruiting in England (15/57/39). Dr Fergus Caskey, medical director of the Renal Association, UK Renal Registry is the chief investigator. We would therefore like to propose that the research recommendation "What is the clinical and cost effectiveness of conservative management versus dialysis in frail, older people?" is moved from an "other" to a "key" research recommendation. We also wonder whether the Committee would consider making the recommendation more specific, for example: *Where existing evidence suggests that RRT has a limited effect on prolonging survival and improving quality of life clinical teams are encouraged to support a shared decision about taking part in research that will generate that clinical effectiveness evidence for future patients. One such study is the NIHR-funded, multi-centre Prepare for Kidney Care study embedded in the UK Renal Registry.* www.bristol.ac.uk/population-health-sciences/projects/prepare-kc-trial/ https://www.journalslibrary.nihr.ac.uk/programmes/hta/155739	We now refer to the Prepare for Kidney Care study in the evidence report B, Modalities of RRT.
Renal Association UK	Short Guideline	18	28	No evidence on benefit of transplantation on Quality of Life The document (P18) states *'Evidence showed that if RRT is chosen, transplantation offers a clear advantage over dialysis in terms of extending life. This applied across all ages. There was no evidence on quality of life or hospitalisation, but in the committee's experience these are likely to be improved by transplantation.*' The evidence evaluation does not appear to have included quality of life (systematic review by Tonelli in AJT 2011 as one example). Tonelli M et al, Systematic Review: Kidney Transplantation Compared With Dialysis in Clinically Relevant Outcomes. American Journal of Transplantation 2011; 11: 2093–2109.	Thank you for your comment. The committee are aware that there are studies that demonstrate quality of life benefits of transplant. However, these did not meet the protocol for this review, mostly due to a lack of adjustment for key confounders or a lack of a longitudinal aspect of data collection. The committee did take into account a likely benefit of transplant in terms of quality of life, based on their experience, throughout the decision-making process. The wording of the text you highlight has been amended for clarity.

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Renal Association UK	Short Guideline	28	23	On page 28 the comment 'The reported 1-year risk of death for people on RRT compared with the general population was approximately 22.0 for people aged 35 to 39 years' needs amending/ clarifying.	Thank you for your comment. We have clarified this sentence.
Royal College of General Practitioners	General	General	General	General: The guidelines are secondary care focussed but it's good to see mention of shared decision making involving the family for what could be a traumatic experience. The availability of centres for dialysis close to home may affect decision making by the patients Areas which will have the biggest impact on practice from our perspective as GPs will be dealing with the symptoms that renal patients experience including anaemia and we hope that these will be adequately recognised and managed I am not sure about cost implications of introducing these guidelines: as above if the symptoms are managed there is a cost implication in terms of supportive therapy. Patient pathways to rapid advice from specialist nurses could be useful. The terms dialysis via vascular access sounds appropriate.	Thank you for your comment. To avoid confusion in response to other stakeholder comments we have replaced the term vascular access with HD/HDF
Royal College of Nursing	General	General	General	This is just to let you know that the feedback I have received from nurses caring from people undergoing Renal replacement Therapy suggests that there is no additional comments to submit to inform on the consultation of the above draft guidelines. Thank you for the opportunity to review this document.	Thank you for your comment.
Royal College of Physicians of Edinburgh	Short Guideline	General	General	*Which areas will have the biggest impact on practice and be challenging to implement? Please say for whom and why.* Creation of vascular access particularly fistulae is difficult to achieve in the time-frame due to a variety of reasons including late presenters ("crash landers"), patient choice (often prevarication), and national shortage of vascular surgeons. Providing HDF is straightforward but for some units will need an infrastructure change with associated costs. It slightly increases the running costs after capital input. In general this guideline promotes few if any real changes to renal units	Thank you for your comment. We have made the NICE implementation team aware of this comment

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				except standardisation to HDF. The drive is to provide better quality service, which can be challenging with the large and often unsustainable expansion of renal units. For instance to provide detailed information to patients and families at various checkpoints eg preparing for dialysis, transplant option, switch of modality, stopping treatment, with involvement of the MDT, can be demanding. To do it to the highest standard is very time resource intensive and frequently not so well done in the present staff envelope.	
Royal College of Physicians of Edinburgh	Short Guideline	Gene ral	General	*3. What would help users overcome any challenges? (For example, existing practical resources or national initiatives, or examples of good practice.)* College Fellows feel that all renal staff aim to follow the guidance as set out. There are no surprises. There are already national initiatives such as the KQUIP project, a strong national organisation driving KidneyCareUK with patient involvement. The issues of capacity and demand are the driving factors.	Thank you for your comment. We have made the NICE implementation team aware of this comment
Royal College of Physicians of Edinburgh	Short Guideline	Gene ral	General	*We would like your feedback on whether the term dialysis via vascular access is acceptable as an umbrella term to refer to both HD and HDF.* Fellows feel this is a slightly blunt term, however, the College appreciates that this has been asked because the normal term haemodialysis (HD) doesn't quite capture Haemodiafiltration (HDF). As HDF can be seen as a slight enhancement of HD, Fellows suggests retaining the use of Haemodialysis.	Thank you for your comment. To avoid confusion we have changed the term vascular access to HD/HDF
Royal College of Physicians of Edinburgh	Short Guideline	3	5	1.1.2 : This rational states that "Consider starting dialysis at an estimated glomerular filtration rate (eGFR) 5 of around 5 to 7 ml/min/1.73 m2, or earlier if indicated by the impact of 6	Thank you for your comment. The recommendation is clear that people should start dialysis earlier if they have symptoms irrespective of eGFR. A level of eGFR is specified only for those

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				symptoms of uraemia on daily living, biochemical measures or uncontrollable fluid overload. " – the College would suggest rewording this to highlight the **patient view in preference** – I.e. consider starting when the impact of symptoms of uraemia on daily living (after consideration of depression as in 1.1.4)…… or when the eGFR. This reflects better what actually occurs in clinical practice. The range of eGFR is also narrow and it is not clear why this should be so limited, although it is recognised that a qualifying statement i.e. present.	people who do not experience symptoms. We have edited the recommendation to make it clear that eGFR should be used in the absence of symptoms. However, we have now reversed it such that commencing based on symptoms is before starting on the basis of eGFR.
Royal College of Physicians of Edinburgh	Short Guideline	4	4	This recommendation will be a challenging change in practice because many patients are not referred from primary care within 1 year of when anticipated therapy is likely to be needed. In addition there remains a hidden iceberg of those patients who are not referred perhaps as a result of decisions made in the community which actually may be more appropriate.	Thank you for your comment. The NICE implementation team have been made aware that this recommendation may be challenging. The recommendations are clear that people are to be involved in shared decision making regarding whether to opt for RRT or conservative management and if the former what modality to choose. These discussions would normally involve both health and social care professionals in the community and primary and secondary care.
Royal College of Physicians of Edinburgh	Short Guideline	5-6	2	We are concerned that this recommendation may imply that when addressing choice of modality that all options are available rather than being transparent that it should indicate what is clinically feasible as often PD may not be feasible due to technical challenges and vice versa. We note the comment "other factors such as co-existing but these documents will be accessible to the general public and therefore needs to be more specific. There is that the "committee agreed that people should have regular opportunities to review options".- this needs explanation in what exactly is meant, or at least clarification, does it mean switching because of patient preference or clinical need?	Thank you for your comment. There is a specific recommendation 'Discuss with people which treatment options are available to them and explain why any options are inappropriate or not advised'. There are too many potential other factors to list in the recommendations but we would expect the health and social care professionals to discuss those relevant with the person. The review would include patients preference and clinical need but the second recommendation places emphasis on the former. It was the experience of the committee that patient preferences are not regularly discussed.
Royal College of Physicians of Edinburgh	Short Guideline	6	1	The College would suggest adding the comment when discussing transplantation in point 1.3.5 – **"where deemed appropriate and feasible"** As mentioned later it is clear in some populations it might be more detrimental as a result of the risk during surgery or the requirements such as weight limit, cardiovascular risk etc..	Thank you for your comment. Even if the surgery is not appropriate the reasons for this would be discussed with the person.
Royal College	Short	6	14	College Fellows have had experience of the use of assisted	Thank you for your comment. Given the lack of clinical

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of Physicians of Edinburgh	Guideline			PD, and we recognise this may depend on availability, but it is potentially an increasing option for more frail patients and those with limited carers and should be mentioned at least as an option in clinical practice	evidence, the higher costs than other dialysis options, and the potential for a substantial resource impact if recommended it was felt that a recommendation could not be made relating to assisted PD. Assisted PD is discussed as an option for people who have chosen home therapies in evidence report B, Modalities of RRT.
Royal College of Physicians of Edinburgh	Short Guideline	7	4	1.4.3 This is very important as between 20-30% of fistulas have primary failure but this recommendation will be a challenging in clinical practice as the major limiting factor is the availability of surgical and radiological support to ensure timely creation. *Beleed K, Renwick P, Eadington D, Webb A, Bhandari S. Outcomes of secondary compared to primary autogenous haemodialysis aterviovenous fistulae, a five year survey. British Journal of Medicine and Medical Research 2012, 2 (1): 62-73*	Thank you for your comment.
Royal College of Physicians of Edinburgh	Short Guideline	7	9	Our experience has suggested that it is very important when advising patients on modality to stress that if they want to change modality, that this is acceptable as on occasion patients may make the "wrong decision" from their heuristic analysis and feel they are not allowed to switch or a pressure not to disappoint their clinician. This may have significant psychological impact on them.	Thank you for your comment. The committees discussion of the evidence in evidence report now refers to shared decision making in evidence report G Indicators for switching or stopping RRT or conservative management
Royal College of Physicians of Edinburgh	Short Guideline	13	16	We are concerned that this research recommendation appears to omit a very important area of research and there still remains a gap in our knowledge and dearth of published evidence: Initiation of dialysis – incremental approach? versus standard vs nocturnal vs long hours vs short hours.	Thank you for your comment. An incremental approach to dialysis was not within the scope of this guideline and therefore cannot be included in the research recommendation. We have highlighted your comment with the NICE surveillance team.
Royal College of Physicians of Edinburgh	Short Guideline	28	25	We are concerned that the comments in relation to the supporting data that the number of people receiving conservative management varies between renal units and has been difficult to establish, but up to 40% of people over 70	Thank you for your comment. The purpose of this section is to provide a general context on current practice and does not seek to make recommendations on how this could or should change in the future.

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				choose this option. Most of these still receive their care and 27 treatment through renal services. College Fellows have had a huge amount of experience of aiming to move these "conservative care" patients back into the community for long term follow-up with a telephone advice type of service by nurse specialists. This is both extremely cost effective and of huge benefits for patients to integrate them back into community care rather than label them and have them require hospital attendance. This is not the way forward for care.	
UK Renal Pharmacy group (RPG)	Short Guideline	Gene ral	General	We welcome the opportunity to provide general comment to this guidance on behalf of renal pharmacists. We are however particularly concerned about the complete omission of medicine optimisation in these guidelines. Chronic Kidney Disease (CKD) is a long-term condition and as such regular medicines and/or other therapies are often required to treat symptoms and manage disease progression. Examples include epoetin and iron for anaemia, medicines to prevent bone disease and decrease cardiovascular risk and if transplanted, immunosuppressants and transplant co-medications. In addition, appropriate medicine selection and dosing is required in patients with CKD to avoid unwanted adverse effects, particularly Acute Kidney Injury (AKI), and ensure optimal patient outcomes. Throughout the renal patient pathway the potential for concomitant medicine drug interactions and resulting adverse effect is significant, due by enlarge to polypharmacy. Polypharmacy is also recognised as a risk factor for impaired medication adherence (intentional and non-intentional) and quality of life[10].	Thank you for your comment. Medicines optimisation was outside of the scope of this guideline. There is existing NICE guidance (Medicines Optimisation (NG5). We now cross-refer to this guideline in evidence report K on information, education and support
UK Renal Pharmacy group (RPG)	Short Guideline	5	2	We would like to suggest the inclusion of an additional section within this guideline, and propose this be included after end of the existing section 1.2, as *1.3 Medicines Optimisation*. Medicines optimisation cuts across the entire RRT patient	Thank you for your comment. Medicines optimisation was outside of the scope of this guideline. There is a NICE guideline for this topic (NG5). We have edited the rationale and impact section of the full guideline to refer to this guideline.

[10] Duerden M, Avery T, Payne R. Polypharmacy and Medicines Optimisation. The Kings Fund 2013. Available at: https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/polypharmacy-and-medicines-optimisation-kingsfund-nov13.pdf

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				pathway so should be included as a stand alone section. Medicine Optimisation has been the focus of previous NICE guidance and NICE Quality Standard.[2,3]	
UK Renal Pharmacy group (RPG)	Short Guideline	5	2	1.3 Medicines Optimisation Medicines optimisation is defined as 'a person-centred approach to safe and effective medicines use', to ensure people obtain the best possible outcomes from their medicines. Advice from a pharmacist with specialist renal knowledge should be sought to aid medicines optimisation. Medicines optimisation is especially important for persons with CKD. Many medicines are renally excreted or are potentially nephrotoxic, with the risk of a more rapid decline in renal function or accumulation of drug/metabolite and associated adverse effects so medicines doses should be tailored to the individual's renal function. Delaying the time to RRT has a positive cost implication to the NHS. Patients on renal replacement therapy are often excluded from clinical trials leading to paucity in drug dosing data and uncertainty in efficacy and safety of many medicines. Specialist renal pharmacist review can support the clinical team with medicine use decisions. Potential interactions with other medicines, especially for immunosuppressants, should be reviewed when initiating any new medicine. Medicine reconciliation and medicine review should be undertaken throughout; on admission to hospital, at each out-patient clinic visit, when a new medicine is commenced or there is a change in renal function. Medicines optimisation is particularly important as a patient changes from CKD to RRT, for example timing of medications around dialysis, or stopping medications no longer required. It is important to ensure a person is taking their medicines as intended as this can support the management of their	Thank you for your comment. Medicines optimisation was outside of the scope of this guideline. There is a NICE guideline for this topic (NG5). We have edited the rationale and impact section of the full guideline to refer to this guideline.

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				long-term conditions, multimorbidities and polypharmacy. Medicines optimisation applies to people who may or may not take their medicines effectively.[11] NICE Quality Standard 120 on Medicines Optimisation highlights shared decision making, as clinical outcomes and patient satisfaction are likely to be better when decisions about medicines are made jointly between the person taking the medicine and the prescriber.[12] It has been estimated that between 30% and 50% of medicines prescribed for long-term conditions are not taken as intended.[13] Adherence is recognised as a significant modifiable factor that can affect treatment outcome in chronic disease management. Meta-analyses of all solid organ transplant types reported a 22.6% non-adherence rate to immunosuppressant therapy and with highest rates were observed for kidney transplants (36%)[14] Numerous studies have analysed medicine adherence rates in CKD or maintenance dialysis and results are wide ranging depending on which medicine is investigated. For example hypertension management in CKD, ~30% of patients were considered to	

[11] 2015 Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes NICE guideline Published: 4 March 2015 nice.org.uk/guidance/ng5. https://www.nice.org.uk/guidance/ng5/resources/medicines-optimisation-the-safe-and-effective-use-of-medicines-to-enable-the-best-possible-outcomes-pdf-51041805253

[1] Duerden M, Avery T, Payne R. Polypharmacy and Medicines Optimisation. The Kings Fund 2013. Available at: https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/polypharmacy-and-medicines-optimisation-kingsfund-nov13.pdf

[2] 2015 Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes NICE guideline Published: 4 March 2015 nice.org.uk/guidance/ng5. https://www.nice.org.uk/guidance/ng5/resources/medicines-optimisation-the-safe-and-effective-use-of-medicines-to-enable-the-best-possible-outcomes-pdf-51041805253

[3] Medicines optimisation Quality standard Published: 24 March 2016 nice.org.uk/guidance/qs120. https://www.nice.org.uk/guidance/qs120/resources/medicines-optimisation-pdf-75545351857861

[13] World Health Organization 2003. http://www.who.int/whr/2003/en/whr03_en.pdf

[14] Dew MA, DiMartini AL, De Vito Dabbs A, Myaskovsky L, Steel L, Unruh M, et al. Rates and Risk factors for nonadherence to the medical regimen after adult solid organ transplantation. Transplantation 2007;83(7):858–73.

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				have poor adherence resulting to uncontrolled blood pressure.[15,16] Phosphate binding medicines non-adherence in maintenance dialysis patients varied from 17 to 74%.[17] The prevalence of self- reported non-adherent behaviour was 49% in a study of CKD patients and a pill burden of over 20 tablets increased the risk of non-adherence. Complex medicine regimens and pill burden were cited as a barrier to adherence.[18] Furthermore a Cochrane Systematic Review is currently underway to review interventions for improving medication adherence in solid organ transplant recipients, and the outcome of this review is awaited.[19]	

[15] Schmitt KE, Edie CF, Laflam P, et al. Adherence to antihypertensive agents and blood pressure control in chronic kidney disease, Am J Nephrol , 2010; 32: 541-548

[16] Muntner P, Judd SE, Krousel-Wood M, et al. Low medication adherence and hypertension control among adults with CKD: data from the REGARDS (reasons for Geographic and Racial Differences in Stroke) study, Am J Kidney Disease 2010; 56: 447-457

[17] Karamanidou C, Clatworthy J, Weinman J, et al. A systematic review of the prevalence and determinants of nonadherence to phosphate binding medication in patients with end-stage renal disease, BMC Nephrology, 2008; 9: 2

[18] McKillop G, Joy J. Polypharmacy and non-adherence to prescribed medicines in CKD. BrJRM Winter 2013. Vol 18 (4); 9-11.

[19] Mellon L, Doyle F, Hickey A, Ward KD, de Freitas DG, McCormick PA, O'Connell O, Conlon P. Interventions for improving medication adherence in solid organ transplant recipients. Cochrane Database of Systematic Reviews 2017, Issue 12. Art. No.: CD012854. http://cochranelibrary-wiley.com/doi/10.1002/14651858.CD012854/pdf

Document processed	Organisation name – Stakeholder or respondent	Disclosure on tobacco funding / links	Number of comments extracted	Comments

**None of the stakeholders who comments on this clinical guideline have declared any links to the tobacco industry.*

Suggested responses to SH comments that raise implementation issues

- When general implementation issues are raised and cannot be addressed by the GDC – 'Thank you for your response. Your comments will be considered by NICE where relevant support activity is being planned'. We emphasise that the developers use their own tailored response when the implementation issues raised can be addressed through the guideline development process – e.g. by redrafting a recommendation etc.

- Examples of good practice received – send to christopher.bird@nice.org.uk and give the following standard response: 'Thank you for your response. We will pass this information to our local practice collection team. More information on local practice can be found here (enter hyperlink to shared learning or put in URL'.

- Examples of resources – send to Rebecca.tushingham@nice.org.uk and give the following standard response: 'Thank you for your response. We will pass this information to our resource endorsement team. More information on endorsement can be found here (enter hyperlink to endorsement scheme or put in URL'.

- When asked to produce tools/apps to support guideline – 'NICE routinely produce baseline assessment and resource impact tools. To encourage the development of other practical support tools, we run an endorsement scheme aimed at encouraging our partners to develop these in alignment with NICE recommendations. Eligible tools are assessed and if successful, will be endorsed by NICE and featured on the NICE website alongside the relevant guideline.'

Reminder to CfG – delete before goes to developer

- When issues are raised by GDCs we suggest that the guideline centre lead contacts Julie Royce (Julie.Royce@nice.org.uk) or Jo Farrington (Jo.Farrington@nice.org.uk) to agree a response. Sometimes these are straightforward issues that we can deal with ourselves. Other times we may need to allocate an adviser and ask for more information to understand the key issues before we could consider any proposals coming from GDCs for implementation activity. This information could either be submitted via our proposal template or by sending round the following questions to the committee:
    - What is the challenge that you think needs to be addressed and why is this challenging? (Please give a reference to the related NICE recs/quality standards). If you have highlighted more than one challenge please indicate which you think is the most significant and why.
    - What do you think NICE could do to help?
    - Are you aware of any interest or initiatives being taken by other national partners with whom NICE could work to tackle the problem?
    - If NICE were able to carry out some support work to help overcome this challenge, which stakeholders should we ensure we work with?
- Guideline centre leads need to contact Stephen Brookfield (Stephen.Brookfield@nice.org.uk) the Associate Director for Resource Impact Assessment for the paragraph about implementation in the GE report as the support team no longer produce this.

Registered stakeholders [Insert link]