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Dialysis Modality Selection: Why Do We Not Truly Share? A Qualitative Study of Kidney Physicians

Clause Anne-Lorraine

Anne-lorraine.clause@hubruxelles.be

University Hospital Brussels

Cortvrindt Charlotte

AZ Glorieux

Le Moine Alain

University Hospital Brussels

Leune Tamara

University Hospital Gent

Timothy Moreels

Univeristy Hospital Gent

Van Biesen Wim

University Hospital Gent

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Abstract

Introduction: Dialysis modality selection (DMS) is a key issue in end-stage kidney disease (ESKD). Despite multiple initiatives to promote home-dialysis, a larger-than-expected proportion of patients still ends up on in-centre hemodialysis (ICHD). Economic incentives appear to be insufficient to change this. Novel evidence points to unit culture as a major influencing factor. This study explored nephrologists' attitudes towards shared decision-making (SDM) during DMS as a potential explanation for this discrepancy.

Methods: As Q-sort is designed to explore subjectivity, such as beliefs and opinions, while also allowing the identification of shared perspectives within a group, we conducted an exploratory qualitative study using semi-structured interviews supported by a Q-sort methodology based on clinical case scenarios. Nephrologists were purposefully recruited to represent different levels of age, gender, expertise and size of home-based program. Interview transcripts were analysed thematically using a phenomenological approach and organized into overarching themes and subthemes.

Results: Twenty-five nephrologists from 15 centres participated. Thematic analysis identified challenges to SDM at multiple levels. 1/ nephrologists' perceptions of their own role, ranging from paternalistic over supportive and coaching to informative; 2/ perceptions on the role of other stakeholders. Whereas nurses were perceived as the main providers of pre-dialysis education, structured strategies to support nurses' skills were lacking; 3/perceived external and institutional barriers and facilitators, such as case mix and limited availability of dedicated services, constraining eligibility even before SDM could meaningfully occur; 4/ challenges inherent to the application of SDM in the context of DMS such as lack of expertise and prejudice. All these factors contribute to consolidation of the existing default propagation of ICHD rather than home based treatment.

Conclusion: Personal role perceptions in SDM, challenges in implementing SDM in real-world practice alongside with persistent misconceptions about contraindications, inconsistent use of the best available evidence, and limited collective action to address system-level barriers (e.g., home-based dedicated services) undermine truly informed patient choice upstream of SDM.

Clinical implication

These findings highlight that, beyond financial incentives, changing the medical culture surrounding dialysis decision-making requires structured, system-level educational interventions to strengthen SDM and communication skills beyond individual clinician motivation. Mandating training in alternative modalities—including home dialysis and conservative care—within nephrology curricula may help reduce inequities in access to these options.

Introduction

Despite substantial efforts to increase the use of home-based therapies, in-center hemodialysis (ICHD) remains highly prevalent in Europe, but with wide variability between centers (1). Multiple barriers and facilitators influencing the adoption of home-based therapies have been identified. The organizational culture within dialysis units appears to be a key mediator of how, and which, services are routinely provided(2, 3).

Multidisciplinary education for patients with end stage kidney disease (ESKD) has demonstrated clear benefits, including improved survival, reduced emergency initiation of dialysis, and increased uptake of home-based dialysis (4, 5, 20). Moreover, emphasizing Shared Decision Making (SDM) during Dialysis Modality Selection (DMS) improves treatment satisfaction and promotes greater adoption of home-based dialysis modalities (6).

SDM is a fundamental principle of high quality health care (7). Ideally, it integrates the clinician's expertise, comprising professional experience and educational background, with the best available evidence and the patient's lived experience and life goals. However, many physicians continue to encounter substantial challenges in providing SDM, particularly in complex or high-stress situations such as DMS or end-of-life discussions (8–10).

We hypothesized that differences in nephrologists' attitudes toward DMS shape the organizational culture of the dialysis unit and, therefore, may undermine true informed patient choice and contribute to inter-center-variations observed in home-based therapies despite same health care system properties.

Qualitative research on the lived experiences of nephrologists can provide valuable insight into their priorities in healthcare management, as well as the behaviour, challenges, and facilitators that influence DMS (11). These results can help refine strategies aimed at addressing each of these factors individually (7). To gain a deeper understanding of how nephrologists implement DMS, we therefore conducted a qualitative study using Q-sort methods and semi-structured interviews.

Methods

Methodology:

We used Q-sort methodology as the basis for semi-structured interviews. Q-sort is an approach designed to explore subjectivity, such as beliefs and opinions, while also allowing the identification of shared perspectives within a group. Participants rank a predefined set of statements that capture the diversity of opinions on that particular topic (Q-set) using a forced-choice grid, enabling the analysis of patterns of consensus and divergence across individuals (P-set). Underlying reasoning was captured as thinking aloud. This study is reported in accordance with the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines (12).

Study population:

We used maximum variation sampling of nephrologists to purposively represent diverse ages, dialysis and home dialysis experience, and gender perspectives. Dialysis units were chosen to represent different program sizes and organizational cultures. We intentionally restricted to one region (Belgium) with a single reimbursement system to exclude pure economic drivers. All participants gave written informed consent.

Data collection:

The Q-sort exercise was based on four clinical vignettes, each comprising nine predefined actions reflecting possible responses to DMS scenarios (Supplementary Material). Vignettes and statements were developed from the literature and refined through consensus within the research team, followed by pilot testing to ensure clarity and avoid ambiguity. Participants completed the Q-sort using a forced-ranking grid while verbalizing their reasoning through a think-aloud approach. This was followed by a 30-minute semi-structured interview guided by the Q-sort results. All interviews were conducted by ALC alone or together with TL, audio-recorded, and transcribed verbatim.

Data Analyses:

Interview transcripts and field notes were analysed thematically using an approach informed by grounded theory (7, 23). Two authors (ALC and CC) independently performed line-by-line coding to identify emergent themes related to DMS, followed by iterative discussions and triangulation within the full research team. Themes were progressively refined and organized into distinct, non-overlapping categories using a task-specific spreadsheet tool. Audio recordings were reviewed to verify interpretations and identify potential gaps.

Results

Between February and December 2025, 25 participants (45,1 ± 9,5 years, 44% female, 24% from academic settings) were interviewed. Table 1 summarizes the characteristics of the participating nephrologists.

Table 1
Characteristics of the participants (kidney clinicians)

Characteristic	**Overall (%), *n = 25***
Age, yr, mean (SD)	45,1 (± 9,5)
Sex, No. (%)	
• Men	14 (56)
• Women	11 (44)
Years since completed nephrology training, No. (%)	
• 0–5	6 (24)
• 6–10	5 (20)
• 11–19	8 (32)
• 20+	6 (24)
Practice Location - Region, No. (%)	
• Wallonia	10 (40)
• Brussels	7 (28)
• Flanders	8 (32)
Practice type – Physician reimbursement, No. (%)	
• Academic	6 (24)
• Nonacademic	19 (76)
• Salaried	6 (24)
• Independent	19 (76)
Size of the overall dialysis program, No. (%)	
• < 100 prevalent dialyzed patients	1 (4)
• 100–150	4 (16)
• 151–200	14 (56)
• > 200	6 (24)
Home dialysis size program (vs Hospital high low care), No. (%)	
• < 5% of overall dialyzed patients	7 (28)
• 6–10%	5 (20)
• 11–20%	7 (28)

Characteristic	Overall (%), *n = 25*
• > 20%	6 (24)
HHD – PD experience (number of treated patients), No. (%)	
• < 10 patients	9 (36)
• 11–30 patients	7 (28)
• > 30 patients	9 (36)
Involved directly with clinical dialysis work, No. (%)	
• Yes	24 (96)
• no (transplant nephrologist)	1 (4)
Educational nurses, No. (%)	
• Specific experience in PD – self-care or home technique	16 (64)
• Little experience in PD – most experience in hospital or general HD	9 (36)

Three overarching themes emerged, reflecting the challenges nephrologists encounter when applying DMS:

(1) Personal perceptions of stakeholder roles: Nephrologists' attitudes toward the role of themselves and of other stakeholders involved in the DMS process, including how their "priorities" emerged from these perceived roles;

(2) Impact of Organizational and Societal Factors: The influence of external organizational dynamics and broader societal expectations on the DMS process;

(3) Challenges in Conceptualizing and Implementing SDM: Difficulties in understanding the true meaning of SDM and the complexities of applying it in practice during DMS.

The Fig. 2 illustrates and summarizes the complex interplay between perceived professional roles, logistical and the practical application of SDM principles, with each element acting as a facilitator (in green) or barrier (in light red) depending on context. Illustrative representative quotations from the interviews are presented in Table 2.

Theme 1. Perceived role of different stakeholders in DMS

Perceived role of the nephrologist

Nephrologists described their role in DMS along a broad continuum, ranging from holistic–comprehensive to explicitly paternalistic approaches (Fig. 1). Most positioned themselves between

these extremes, adapting their role to the patient profile, therapeutic relationship, and clinical context, and alternatingly acting as “gatekeepers,” “advisors,” “interpreters,” or neutral information providers (Quotes 1.1, 1.3).

Nephrologists with greater experience and those working in centres with larger home dialysis programs more often identified as “advisors” or “interpreters,” emphasizing the sharing of expertise to align treatment options with patients’ expectations (Quote 1.6). In contrast, participants from centres with smaller home dialysis programs more frequently expressed paternalistic, gatekeeping attitudes, largely driven by perceived medical or psychosocial safety concerns (Quote 1.2).

Differences also emerged in how nephrologists approached patient discussions. Some focused primarily on medical and safety issues, offering vetoes while delegating quality-of-life discussions to nurses. Others prioritized helping patients align modality choice with lifestyle and personal values, deliberately avoiding normative judgments about quality of life (Quote 1.4). Few participants considered training nurses in goal-oriented discussions as part of their own role.

Nephrologists from centres with larger home dialysis programs also described a supportive approach, using reassurance and “nudging” to counter misconceptions about home dialysis and build confidence among patients and nursing staff (Quote 1.6). While most acknowledged their central role in DMS, some reported discomfort when patients delegated full decision-making responsibility to them (Quote 1.7)

¬ Perceived patient’s role

Most participants stressed the importance of patient engagement in achieving a fruitful DMS process. They noted that, unlike ICHD, home dialysis cannot be imposed, making ICHD the seemingly natural “default option” and home dialysis an “explicit choice” (Quote 1.8). Consequently, a patient’s motivation to pursue home-based dialysis is viewed as an essential factor (Quotes 1.9, 1.10).

However, depending on the perception of their own role, participants uttered differing opinions about how much patients should be activated and the potential factors that may hinder patients’ self-management capacity (Quote 1.11, Q1.13). This probably explains why most nephrologists felt more comfortable emphasizing the favourable attributes of home dialysis to younger, professionally active patients, who are perceived as more similar to themselves and therefore more inclined toward self-management (Quote 1.15).

True patient autonomy is also perceived to be limited by the extent to which the consequences of the patient’s choice are acceptable for the dialysis team’s organization (Quote 1.12). Nephrologists with larger home-based programs expressed less concern about potential undesirable effects on team organization or patient health and were more inclined to seek creative solutions rather than identify contra-indications (Quote 1.14).

• Pre-dialysis nurse’s role:

Most participants acknowledged the influential role played by their nurses in DMS discussions. Nearly all nephrologists reported delegating pre-dialysis education to pre-dialysis nurses, whom they perceive as having much more time and a more natural inclination toward psycho-social tasks than themselves (Quote 1.16).

Many, however, recognized that nurses, even those designated as “pre-dialysis nurse”, are sometimes ill-equipped for such holistic educational tasks. Limited exposure to alternative techniques was identified as an unavoidable source of bias, yet very few nephrologists provide their nurses with decision-aid tools or specialized therapeutic education training (Quote 1.17). Moreover, most nephrologists admitted they do not attend these educational sessions, that they are not fully aware of their specific content, and that they assume they mainly cover technical information. It is common practice to give nurses instructions and concerns (i.e., nurse nudging) or even a veto against certain modalities even before the discussions with patients (Quote 1.18). As a result, it can be questioned to what extent nurses can help patients make informed decisions.

• Role of the family:

Participants generally perceived the involvement of spouses or close relatives in the DMS process as helpful—and at times essential—particularly to make the “non-standard choice” (ICHD) such as in end-of-life situations, cognitive impairment, or when considering home-based therapies (Quotes 1.20, 1.21). Nephrologists from centres with smaller home dialysis programs more often viewed home therapies as intrusive for families and used this to justify granting relatives a more decisive role (Quote 1.22). Implicitly positioning in-centre hemodialysis as the default option emerged as a nudging strategy. (Quote 1.23).

• General Practitioner’s (GP) Role:

Many nephrologists perceived general practitioners as negatively biased toward home-based therapies. This bias was seen as influencing final modality decisions. Participants attributed this reluctance to concerns about involvement in follow-up care or to limited familiarity with home dialysis techniques (Quote 1.24).

• Role of the peer-patients:

Most nephrologists acknowledged the value of peer patients in modality selection, while also noting the risk of biased or overly emotional information. When appropriately matched, peer patients were seen as effective in conveying lived experience and practical insights (Quote 1.25). Nephrologists involved in home dialysis more frequently relied on peers to support or “nudge” hesitant patients, although few reported having formal peer-patient programs, which were often viewed as cumbersome.

Theme 2: Influence of logistical, workforce challenges and societal expectations.

When certain kidney replacement modalities are unavailable within an institution—particularly PD, conservative care, or nocturnal HD—this resulted in pronounced bias in pre-dialysis information (Quote

2.1).

Pre-dialysis practices were largely driven by logistical capacity, human resources, and unit culture (Quotes 2.2, 2.3). The most frequently cited barrier was a lack of staff adequately trained in home-based therapies and pre-dialysis education (Quotes 2.4, 2.5, 2.12). Additional challenges included limited access to skilled PD surgeons, insufficient time for education, financial pressures, and difficulties collaborating with community nurses for assisted PD (Quotes 2.6, 2.7, 2.13). Some nephrologists attributed the high prevalence of ICHD to economic and organizational decisions made at management level rather than to individual clinical choice. It is therefore unclear whether a negative culture against home-based therapies in a unit is the result or the consequence of nephrologist's attitudes.

Conversely, participants noted that supportive logistics and unit culture could facilitate genuine SDM (Quotes 2.9, 2.10). However, Participants often uttered that it requires considerable energy and conviction to change the medical culture of the local (dialysis unit) and higher (hospital) management levels without external incentives : changing entrenched "default ICHD" trajectories was perceived as requiring collective commitment and external incentives, and as very difficult to achieve by "lone rangers" (Quotes 2.4, 2.7). Some participants stated that home therapies are only feasible when *all* stakeholders agree on a patient's eligibility. In line with this, many indicated that incentives, such as explicit reimbursement policies for ESKD patient education, could positively influence how pre-dialysis education is implemented in practice, pointing to the potential role of financial drivers in motivating change in organizational culture (Quote 2.14).

Theme 3. Challenges on the conceptual meaning and implementation of SDM itself.

• Contexts in which SDM is particularly challenging

Participants identified several situations in which implementing SDM during DMS was perceived to be particularly challenging: urgent initiation of dialysis, psychosocial deprivation, cognitive impairment, and patients who prefer to delegate decisions.

Urgent or late referral, often accompanied by emotional distress or uremic symptoms, was widely perceived as incompatible with meaningful engagement in SDM for self-care dialysis (Quotes 3.1, 3.3). Nevertheless, some participants suggested that targeted post-initiation education programs for patients starting HD urgently could partially overcome these barriers and reopen discussions about alternative modalities (Quotes 3.5, 3.6). This underlines that not a given situation is a true barrier/facilitator but the attitude of the nephrologist towards this situation.

Patients' traits, cognitive status or motivation also challenged SDM implementation. Some patients preferred to delegate decisions to their nephrologists, often due to emotional vulnerability or long-standing therapeutic relationships (Quote 3.2). These "delegator" patients frequently used formulations such as "What would you do if you were me, doctor?", reflecting a preference for paternalistic care and a reluctance to assume responsibility in DMS, thereby limiting SDM (Quote 3.7).

• Lack of integration of the best available evidence in DMS

Interviews revealed persistent knowledge gaps among nephrologists regarding key aspects of DMS, including conservative care, absolute and relative contraindications to home dialysis, and incremental or decremental PD, thereby limiting the implementation of true SDM.

Participants also reported a misalignment between clinical priorities and current evidence. For instance, few mentioned PD as a feasible option in emergency settings or in frail elderly patients, despite supporting evidence (Quotes 3.9, 3.10). Many believed that hemodialysis prolongs survival or alleviates symptoms in elderly patients compared with conservative care, contrary to available data (Quotes 3.11, 3.12). However, nephrologists clearly expressed their discomfort when discussing the limited benefits of dialysis at advanced age (Quote 3.13), and only a minority reported using validated geriatric assessment tools to evaluate frailty during DMS. Participants attributed this knowledge gap to the minimal exposure to alternative dialysis modalities and conservative care during their training. The low attention for home-based therapies in ongoing medical education further perpetuates knowledge gaps and influences clinical practice patterns (Quote 3.14).

Table 2
– Illustrating Quotes for each of the three overarching themes and their related sub-themes.

Theme 1. Personal priorities and attitudes towards the role of different stakeholders in the modality decision process	
Perceived nephrologist's role in dialysis modality decision making process	
	Q1.1 *"In an ideal world, where patients understand their pathologies and the benefits and risks of each treatment... I would like to remain a little more neutral in the choice process. But that's not real life. Depending on the patient, I have to play the role of simple guidance, and sometimes of more orientation."*
	Q1.2 "There are more extreme situations where we have, as doctors, a say …where our role is to put the veto on unilateral decision that brings to many consequences, for example if the patient's prognosis or the team's integrity is compromised."
	Q1.3. "My role is limited to medical expertise (communicating concerns about the feasibility medically speaking). The nephrologist does not have the expertise to assess the patient's quality of life and the impact on his or her life with each of the dialysis technique."
	Q1.4. "If a patient is happy staying at home with his little dog in front of his television in his little room and feels that this is a sufficient quality of life, I'm not the one to say otherwise and to suggest that he shouldn't start dialysis"
	Q1.5 "Many patients need to hear my opinion, that they can do it at home. My enthusiasm, my encouragement to choose a technique at home, which I'm going to communicate, is already nudging in a way, but it's positive nudging because we believe in our patient's abilities. That can make all the difference to the final choice."
	Q1.6 "I think it's part of my job to communicate the advantages (of home therapies) in terms of increasing flexibility, maintaining QoL, and autonomy because for me it's an uncontroversial reality. The fact that it allows for more personalization in treatment, to enjoy their lives differently rather than being stuck in hospital for > 12 hours a week, is for me a fact not a subjective feeling"
	Q1.7."The only question that bothers me and is asked almost every time, because they're still hesitating, they trust me, what would you do doctor? It's the killer question of course! I know them as I see them in consultations but not as they are at home."
Importance of patient 'role	
	Q1.8 "You cannot impose a choice of technique on a patient in which he will have to be 100% involved (home techniques). On the other hand, you can impose HD by default as it does not require the patient to be actively involved."

Theme 1. Personal priorities and attitudes towards the role of different stakeholders in the modality decision process	
Perceived nephrologist's role in dialysis modality decision making process	
	Q1.9 "The patient's motivation is probably the most important factor in final decision, even when you think that the patient is not the ideal candidate for home dialysis"
	Q1.10. t's above all the **consequences (patient should decide at every moment)**. *I think that if he really does make unreasonable decisions that are dangerous to his health, well, it's still my duty to sometimes say no, we don't have the equipment to do that, or you're going to die. In the end, it's always the patient who makes the decision, but I don't like the phrase '***whatever the consequences***'*
	Q1.11"We don't ask patients what technique they're going to use in practice, but we do ask them what, ideally, would be the best suited modality to their lifestyle. The presence of contraindications, especially absolute contraindications, limits the patient's decision-making power."
	Q1.12. It's a tripod (patient, nephrologist and nurse) that supports the dialysis project. Even if, in the end, it is the patient who bears the burden of his or her choices, the workload will also be heavy for the team (dealing with complications, multiple alarms, etc.). So, is it better nephrologist to protect the nursing team or let the patient experience their own mistakes?
	Q1.13"You can't categorize an (elderly) patient into a (heavy) technique solely based on their advanced age, on the assumption that they won't be able to manage themselves. ... I have patients aged over 80 who undergo dialysis at home and for whom it goes very well".
	Q1.14"I also have an influential role to play in motivating nurses to deliver the right message, not just to see all the problems with PD for instance, to troubleshoot some barriers and to give patients confidence on their own abilities. Some of my colleagues leave it entirely up to the nurses to decide, but I believe that I have a role as an expert in helping them to identify potential barriers & solutions"
	Q1.15" For a young, professionally active patient, I naturally highlight the advantages of home dialysis in maintaining normal daily activities. Is that really inappropriate nudging?
Importance of pre dialysis nurse's role:	
	Q1.16 "The education nurses are our ears for our kidney failure patients…they are aware of every single detail of patient 'life and possess potential influent information that helps in decision-making."
	Q1.17 « Nurses are trained in nursing school in primary "care", that's the first level, if you like. They are very good at gestures, at preventing

Theme 1. Personal priorities and attitudes towards the role of different stakeholders in the modality decision process	
Perceived nephrologist's role in dialysis modality decision making process	
	peritonitis, at care. But the second level, or the level that needs to be on the same footing, is 'How does a patient integrate treatment into his/her way of life, eating, sleeping, travelling? Unfortunately, they have not acquired, nor should they acquire, a new professional posture."
	Q1.18. "To open the pre-dialysis discussion, I try to talk in advance with the nurse who is going to see the patient, to communicate about the medical and family situation and stress the importance of trying to discuss everything. If nurses are well informed by nephrologists, they will also change their pre-dialysis discourse".
	Q.19. "Our education nurse works mainly on in center HD rather than for home techniques. She is clearly more comfortable to discuss openly HD and that she's going to paint only a superficial picture of PD…"
Role of the family:	
	Q1.20 "It's very difficult to judge the quality of life of a patient with dementia because often they're neither happy nor unhappy, they don't know what's going on. It's difficult for us to decide for them... the family probably knows better what's best for them than we do."
	Q1.21 "I think it's important for the project to be validated by the wife for home dialysis, that's clear. And so, it's part of the assessment we make before taking on a patient for HDD, that we check that the spouse understands what it means and validates the choice, if only at the practical level of storage, deliveries, the technique itself, who's going to manage it, who needs to be trained, etc."
	Q1.22 "In fact, the advantage and disadvantage of PD is that it's done at home, so you bring the disease home with you. So, the wife and children must have their say too".
	Q1.23 "Sometimes it's the family who insist that their old grandmother with dementia be taken on dialysis…and we often see that problems exacerbates once dialysis has begun."
Role of the GP:	*Q1.24 "GPs are not always informed of the latest developments in dialysis. If nephrologists are already unfamiliar with home dialysis, it's only natural that the GP should know even less…For some patients, GPs are essential, they have a strong therapeutic relationship, and their opinion cannot be by-passed... even if their opinion represents a barrier for home dialysis"*
Role of the peer-patients:	
	'Q1.25 This emotional side of the decision-making process can be facilitated by meeting a patient who is a partner in his care. But when

Theme 1. Personal priorities and attitudes towards the role of different stakeholders in the modality decision process	
Perceived nephrologist's role in dialysis modality decision making process	
	people say that a patient-partner is being 'used' to promote home dialysis, I don't agree with that, not at all. The patient partner is there to talk to the patient about his/her lived experienced, not to influence his or her choices. And that can be sometimes tricky with patients who are said to be partners because they might be too influential (laughs).”
Theme 2: impact of (external) logistical and organizational influencing factors and societal expectations.	
	Q2.1. Well, at our centre, we haven't done PD for years, we clearly say (in pre dialysis) that it exists but that we don't do it in our centre. So yes, maybe we have a bias in what we offer but I'm saying that in theory it exists”
	Q2.2. “We must select our patients who choose a home technique... our nursing staff are not 100% dedicated to home dialysis, they work most of the time in center, so they can help remotely but not assist the patient at home in case of problem. Patients must be super-autonomous and not cause too many problems...for sure"
	Q2.3. “We really lack nurses who are dedicated and trained for peritoneal dialysis. For every new peritoneal dialysis patient, we need to remove a nurse from the HD pool… If we were better equipped, it would be easier for me to offer both HD and PD techniques on an equal perspective. The choice of modality for our patients is necessarily conditioned by the support you have available. It's really a purely organizational matter.”
	Q2.4 “I have sometimes to face up to the opinion of the nursing team when it comes to educate more complex patients (home dialysis), because I tend to say to them: 'Let's try it, and if it doesn't work, we'll withdraw'…it's not always easy to convey the nursing team my enthusiastic vision”.
	Q2.6 “The very last word before accepting a patient for home dialysis is still up to us because we also take responsibility for taking the patient on home dialysis. The choice process is even more shared with the whole dialysis staff when it comes to home dialysis compared to in center HD.”
	Q2.7 “It's only very recently, thanks in part to the nomenclature and the fact that we've grow from 3 to 10 patients at home, that, fortunately, our nurse has finally been completely released from conventional HD for pre-dialysis and home dialysis. But it was a battle with the medical and nursing direction”.

Theme 1. Personal priorities and attitudes towards the role of different stakeholders in the modality decision process	
Perceived nephrologist's role in dialysis modality decision making process	
	Q2.8 "Organizing a collaboration with another center that inserts peritoneal dialysis catheters within 48h doesn't seem feasible to me here. Why would they agree to insert a PD catheter urgently for us and then send us the patient back
	Q2.9"As we have the support of the surgeons to put a PD KT quickly within a week, it's not a problem to start PD within 2 weeks..."
	Q.2.10. When I arrived here, I wanted to launch the PD program, but the nurses weren't motivated and were afraid of PD... so I had to bite the bullet, I needed the support of a dedicated motivated team behind it, which I never got.... Also, for financial reasons, I was never able to justify a dedicated PD team because I didn't have enough patients
	Q2.11."Our center doesn't offer peritoneal dialysis, although we're about to start... so I'm certainly not going to impose a more complex or fragile patient on my nurses to start the program. That would run the risk of discouragement."
	Q2.12"Until now, I've overseen the pre-dialysis consultation, because we didn't have a nurse dedicated to education. I talk to all my patients about the 4 main types of replacement therapy, including conservative treatment if they are older... I'm aware that it's not very profitable, it takes me 1 hour 30 minutes and people will focus on 1 word that I might have said at a given time."
	Q2.13. "Collaborations for assisted peritoneal dialysis are fragile... we're trying to strengthen this bridge between the hospital and the home, thanks to the help of the hospital's managing director, who is also on the board of homecare nurses (laughs)."
	Q2.14. 'Our pre-dialysis information pathway is a work in progress, with everything still to be formalized... It's only very recently, thanks in part to the INAMI nomenclature and the fact that we've grow from 3 to 10 patients at home, that, fortunately, our nurse has finally been completely released from conventional HD for pre-dialysis and home techniques. But it was a battle with the medical and nursing direction".
Theme 3. Challenges on the conceptual meaning and implementation of shared decision making itself.	
Situations to which SDM in dialysis modality selection is challenging	

Theme 1. Personal priorities and attitudes towards the role of different stakeholders in the modality decision process	
Perceived nephrologist's role in dialysis modality decision making process	
	Q3.1 "In an acute setting, the guy's got a brick in the face, he's not going to be able to choose and he's going to trust us. So, I'd prefer it if we just said to him: "Here, let's start with HD in center in acute and then we'll talk calmly" …Education doesn't have to be done in a hurry!"
	Q3.2. "Cognitive impairment is really a concern for PD, even with assistance … I would tell my concern of possible KT problems – infection…without however giving veto- to the patients and family"
	Q3.3 "We lose a lot of patients in HD centre who have gone through intensive care or long periods of hospitalization. In the emergency - intensive care context, HD always takes precedence. And these patients are lost to education once they've stabilized; they're caught up in the routine of the HD centre, they accustomed to. We could clearly do better here."
	Q3.4 "In a decision-making process, you mustn't underestimate the psychological complexity of some patients in front of us, who may be in deep denial... and when I ask them 'well, have you thought about the different possibilities and they say "ah no, I don't want to think about it" it's very complex for us to deal with!"
	Q3.5 "Feeling of hope is important when you have to make a choice about dialysis. I've had young patients who collapsed when they were told they would have to undergo dialysis and who were unable to make a choice, but with the prospect of a kidney transplant, they were able to make choices."
	Q3.6 I often hear at conferences that late-arriving patients are lost for self-care techniques. It really depends on the attitude of the dialysis center whether it systematically informs these patients afterwards. I'm not convinced that this is a real problem, at least in our unit
	Q3.7 "I think older patients rely more on you, it's a culture of the past. I see that with an older colleague here, he really was 'The Doctor'. The patients are very wise and believe everything he says."
	Q3.8 In addition to the social problems (precariousness), policies in the region have exacerbated people's loss of autonomy. Patients have been told for 30 years that we're going to do everything for them, and this makes the process of empowerment in dialysis very difficult".
Lack of integration of the best available Evidence	

Theme 1. Personal priorities and attitudes towards the role of different stakeholders in the modality decision process	
Perceived nephrologist's role in dialysis modality decision making process	
	Q3.9 Semi-palliative peritoneal dialysis with imitated number of exchanges in the elderly population is clearly insufficient... They won't feel any better… If we start dialysis, then we do it properly."
	Q3.10 Peritoneal dialysis is not an emergency technique; it has found its place in chronic care but not in acute setting as it would not be functional before 3–4 weeks".
	Q3.11"At 85, I wouldn't sell her years of extra life, but quality of life, especially if she's already symptomatic. If we use conservative treatment, it's not certain that her nausea and the rest will resolve. She may still have an impact on her longevity, but I can't promise that. Reducing symptoms and quality of life first and foremost, not especially years of life."
	Q3.12. "In the case of elderly patients, I explain to them that starting dialysis will not necessarily improve their quality of life (coming three times a week, waiting to be hooked up, suffering from low blood pressure and fatigue when they get home...). These are risks that need to be explained".
	Q3.13. "I'm still uncomfortable if the patient (an elderly, fragile patient) tells me that she would like to live longer (thanks to dialysis). I admit that I don't know enough about the literature to be sure that PD or HD has proved to be beneficial in terms of survival at that age. I still think that if anorexia has set in, dialysis could potentially prolong her life a little... otherwise, things could go very quickly..."
	Q3.14 "I wasn't trained in PD during my university training and that's something I regret because now I don't know anything about it... I'll never follow a PD patient."

Discussion

This qualitative study provides novel insights into the lived experience of nephrologists navigating dialysis DMS SDM. Different overarching and interrelated levels of influence on informed true patient choice emerged: (1) nephrologists' perceptions of their own role and (2) the role of other stakeholders, (3) organizational, health care system, and societal factors shaping DMS, and (4) challenges inherent to conceptualizing and implementing SDM during DMS in real-world practice. Together, these findings underscore the complexity of achieving authentic SDM and identify leverage points to strengthen DMS pathways.

The first key finding relates to how nephrologists conceptualize their professional role, as well as the roles of nurses, peers, families, and other stakeholders involved in DMS. These perceptions strongly shape how SDM unfolds in practice, influencing the degree of guidance, autonomy, and shared deliberation afforded to patients. Participants described a continuum of professional postures ranging from “stewards”, prioritizing safety and clinical outcomes to “technicians” adopting a neutral, information-based stance, and “interpreters” who actively engage with patients’ values and priorities to co-construct dialysis decision plans.

Importantly, these roles were not static or mutually exclusive. Nephrologists reported adapting their posture according to clinical urgency, patient vulnerability, and perceived need for protection versus empowerment. Patients with severe distress, frailty, or social deprivation were more often approached with a steward-like stance, whereas patients with greater stability and fewer comorbidities elicited a more interpretative and collaborative approach, aligning decisions with life goals and lifestyle preferences. As shown in Fig. 1, this dynamic role adaptation highlights the contextual nature of SDM in ESKD and challenges rigid interpretations of SDM implementation.

Participants also emphasized that many patients face substantial barriers to engage in DMS, which may undermine SDM from the outset. Prior studies have shown that willingness and capacity to engage in SDM are influenced by age, comorbidity burden, and cognitive function, supporting the notion that engagement capacity varies widely across the ESKD population (18). In this context, the frequently encountered patient request—“what would you do, doctor?”—should be interpreted as an invitation to contextualized guidance rather than a wild card for directive decision-making. Good counselling therefore requires eliciting patients’ expectations and adapting recommendations accordingly. A purely informational approach that avoids explicit recommendations may paradoxically deprive patients of valuable expertise and undermine meaningful support (21). These findings align with existing qualitative literature emphasizing the need to tailor SDM strategies to patient phenotypes, clinical context, and social environment (14, 15).

Nurses were recognized as essential contributors to DMS, yet their involvement was constrained by limited training, insufficient exposure to all modalities, and resource shortages. Few nephrologists described a clear strategy to support or empower their nurses in their educational role. Many admitted they explicitly veto-ed certain options even before the nurse was providing the information. Both factors substantially degrade the process of true SDM. Peer support was viewed as valuable when carefully selected and structured, but potentially problematic if unmoderated due to risks of emotionally biased narratives. These findings highlight the importance of equipping all stakeholders with adequate knowledge and structured framework to contribute effectively to SDM (16, 17).

The second major theme concerns the structural, organizational, and broader health care system context in which DMS takes place. Participants consistently described how norms, anchored workflows, staffing patterns, and resource allocation of a dialysis unit collectively reinforce an implicit clinical trajectory favouring ICHD, often jeopardizing SDM even before it begins. There is a strong emergent

impression that ICHD is considered as the default option in more complex case mix. Limited availability of home dialysis services—such as urgent-start PD, training capacity for PD or HHD, and assisted PD—restrict equitable access to all modalities. A typical example is the routine initiation of late referrals on ICHD via central venous catheters, even in non-urgent situations. Despite growing evidence supporting urgent-start PD as a safe alternative, many participants perceived ICHD as more “convenient” and omit to implement organizational readiness to implement alternative pathways. In contrast, nephrologists working in centres with established home dialysis programs described a culture in which exploring alternative modalities was the norm, even in complex cases. For these participants, deviating from the “default ICHD” trajectory was perceived not as an insurmountable barrier but as a positive challenge. Nevertheless, most participants agreed that changing entrenched practice patterns requires collective commitment, strong leadership, and alignment across the multidisciplinary team.

Our findings also illustrate the difficulty of distinguishing clinician-level factors from institutional constraints, as these levels are deeply intertwined. Previous research has described logistical barriers as reflecting a combination of limited training, insufficient economic incentives, and lack of institutional commitment. Consistent with this literature, our data suggest that organizational culture both shapes and is shaped by clinical behaviour in return. Our data reveal a substantial degree of clinician complacency, whereby some nephrologists perceive existing structures as immutable and defer some responsibility to higher management levels to explain the ICHD predominance, but do not a single effort to change the situation.

The third theme relates to challenges in conceptualizing and implementing SDM, particularly in complex clinical situations. Informed SDM requires integrating the best available evidence with clinical expertise and individual patient goals. This process was frequently hampered by fragmented knowledge regarding the comparative risks, benefits, and burdens of different dialysis modalities for specific patient mixes (6, 22). Participants expressed notable gaps in conservative care, home-based therapies, and incremental approaches, which limited their ability to engage in nuanced SDM.

Although most dialysis modalities are clinically appropriate for the majority of patients and differ primarily in treatment burden rather than survival outcomes (13), it appeared that SDM was often overshadowed by presumed eligibility assumptions. Limited familiarity with evidence tended to shift priorities toward safety concerns and medical considerations, impeding meaningful elicitation of patient preferences. These challenges were amplified in complex medical or social contexts and when evidence was perceived as limited (9, 11).

Knowledge gap was particularly evident for participants when discussing non-dialytic management or home-based therapies with frail elderly patients. This hesitation was attributed to limited awareness of evidence supporting these approaches and to insufficient use of standardized tools to assess frailty and functional status. As a result, treatment decisions risked being misaligned with patients’ capabilities and priorities. Ultimately, deficits in communication skills collectively hindered the implementation of nuanced, patient-centered SDM.

Overall, this qualitative study reveals that the DMS process is shaped by several interrelated factors operating at multiple levels of influence. Key elements include nephrologists' perceptions of the roles of all parties involved in the decision-making process, the extent to which nephrologists master the SDM model itself, and unit organizational culture, further influenced by broader health care system–level factors. These findings suggest that DMS is guided more by established unit practices and nephrologists' veto and safety concerns than by genuine elicitation of patient preferences and balanced knowledge of all available modalities. Acknowledging the complexity of the DMS process is crucial to understanding how (pre-)dialysis pathways are shaped and to identifying opportunities to improve goal-oriented pre-dialysis care.

Strengths and Limitations

We purposively sampled nephrologists to ensure a balance of sex, dialysis experience, and unit sizes. However, perspectives from patients and nurses were not included.

Declarations

Ethical approval:

The study was approved by the Ethics Committee of the University Hospital of Brussels (HUB) and conducted in accordance with the Declaration of Helsinki.

Informed consent to participate

Participants received written and verbal information about the study objectives and procedures and provided written informed consent.

Conflict of interest statement:

None declared.

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Author Contribution

Author contributions: A.L.C. and W.V.B. designed the study. A.L.C and T.L conducted the interviews and A.L.C and C.C, data collection. A.L.C., T.M. and W.V.B. performed data analysis and interpretation. A.L.C. drafted the manuscript. W.V.B. and T.M provided critical revisions for important intellectual content. All authors approved the final version of the manuscript.

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Data Availability

Yes. The qualitative data generated and analyzed during this study are partially reported in Table 2 through illustrative participant quotes. The anonymized Q-sort datasets supporting the semi-structured interviews are available from the corresponding author upon reasonable request.

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Figures

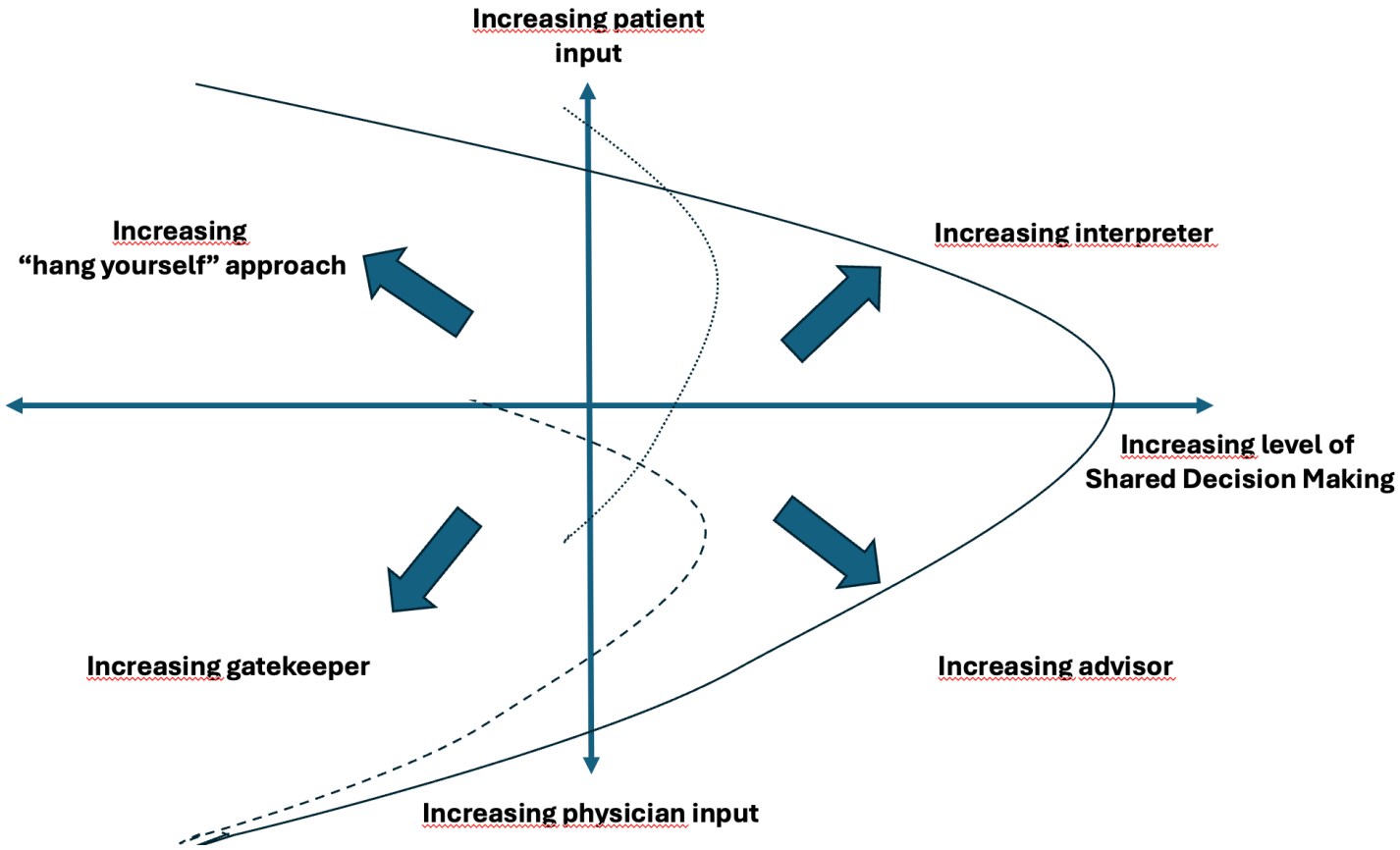


Figure 1

Spectrum of nephrologists' approaches to DMS, showing how SDM practices vary across clinical contexts, patient mix and own perceived professional role or personality.

Legend: Full line: different standpoints of different types of roles in general

Dotted line: adapted standpoints of different roles in very independent, empowered patients with high autonomy and independence.

Striped line: adapted standpoints of different roles in very dependent patients (eg socialy deprived, illiteracy, high comorbidity, frailty..).

The perspective on the role of the nephrologist is thus determined by their own personality, the personality of the patient and by circumstances.

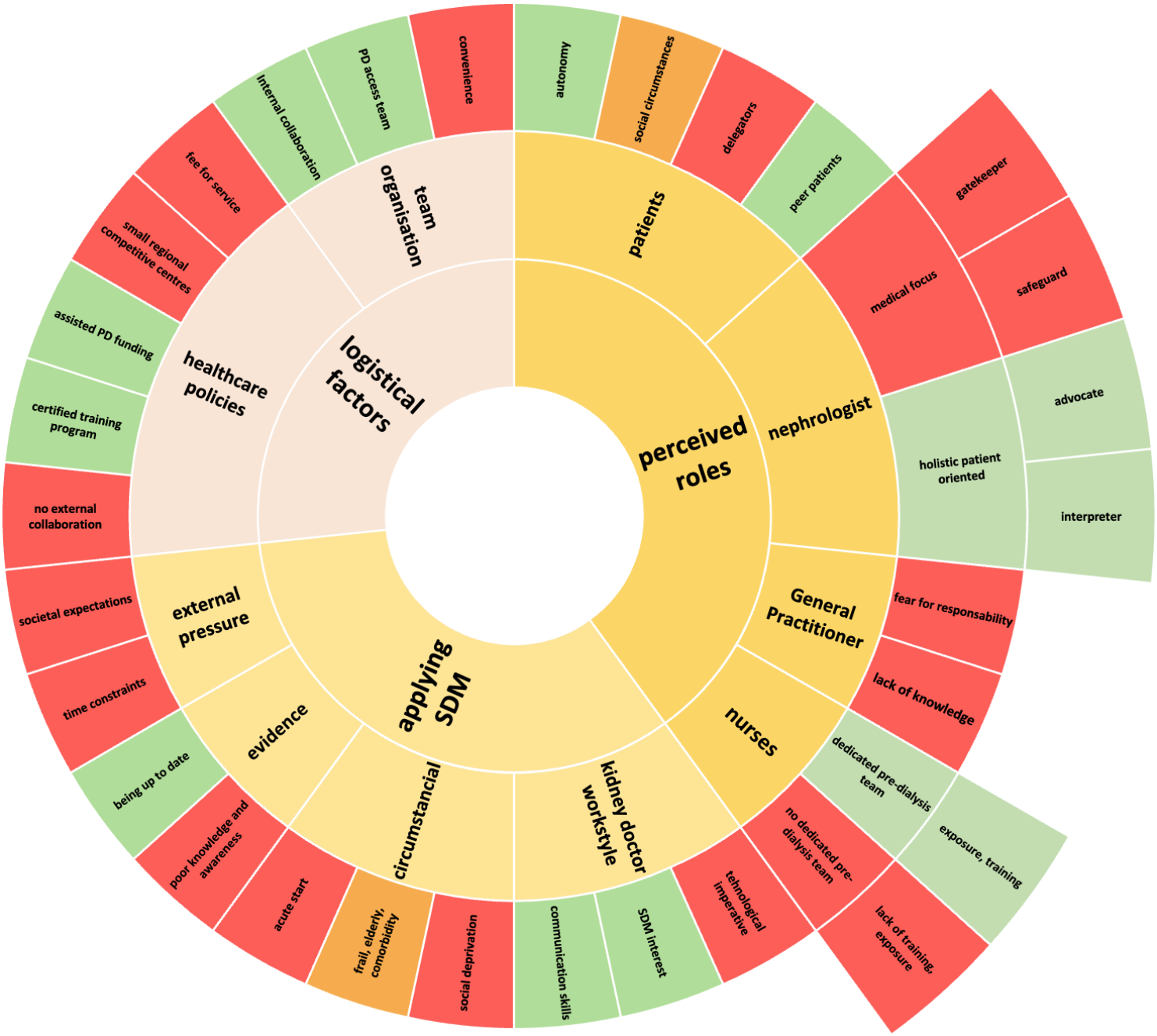


Figure 2

Doughnut model illustrating the main findings from the interviews and their interdependencies within the SDM process.

Legend: The inner rings represent the overarching themes and their related sub-themes emerging from the qualitative analysis, structured across different levels of influence (logistical factors, perceived roles, and application of SDM principles).

The outer ring displays key contextual and individual factors influencing SDM in clinical practice.

Factors shown in green are considered to facilitate the achievement of SDM, whereas factors shown in red are considered to hinder it.

Factors shown in orange may act as either facilitators or barriers, depending on contextual circumstances and interactions with other elements.

For instance, "Technological imperative" refers in fact that people prefer a complex technological solution (in-centre HD with sophisticated machines) over a simpler solution (sugar water going in and out of your belly) as they believe this can of course only be much better. It is a very strong motivator in medicine to guide therapeutic choice as everybody is impressed with high tech solutions (even if there is no evidence for their superiority, or even when there is evidence, they are not).

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Appendix1.docx