



A Person-Centered Interdisciplinary Plan-of-Care Program for Dialysis: Implementation and Preliminary Testing

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Rationale & Objective: Despite growing interest in individualizing care, routine dialysis processes, including the interdisciplinary plan of care, often fail to account for patient-identified priorities. To better align dialysis care with patient priorities and improve care planning experiences, we implemented a person-centered care plan program at a single clinic. We also sought to gain insight into key implementation considerations and areas for program improvement.

Study Design: 6-month quality improvement project with research substudy.

Setting & Participants: 49 hemodialysis patients and 14 care team members at a North Carolina dialysis clinic.

Quality Improvement Activities: Implementation of My Dialysis Plan, a person-centered care plan program.

Outcome(s): Participant perspectives and care plan meeting characteristics (quality improvement); pre- to postprogram change in patient-reported autonomy support, patient-centeredness of care, and dialysis care individualization (research).

Analytical Approach: We used the Consolidated Framework for Implementation Research to guide implementation and evaluation. We

conducted pre-, intra-, and post-project interviews with clinic stakeholders (patients, clinic personnel, and medical providers) to identify implementation barriers, facilitators, and perceptions. We compared pre- and post-project care plan meeting content and patient-reported outcome survey scores.

Results: We conducted 54 care plans with 49 patients. Overall, care teams successfully used My Dialysis Plan to elicit and link patient priorities to actionable aspects of dialysis care. Participants identified interdisciplinary team commitment, accountability, and the structured yet flexible meeting approach as key implementation elements. Throughout the project, stakeholder input guided program modifications (eg, implementation practices and resources) to better meet clinic needs, but follow-up on care plan-identified action items remained challenging. Among the 28 substudy participants, there was no difference in pre- to post-project patient-reported outcome survey scores.

Limitations: Single clinic implementation.

Conclusions: My Dialysis Plan has the potential to enhance dialysis care individualization and care plan experiences. Evaluation of program impact on patient-reported and clinical outcomes is needed.

Visual Abstract included

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Individuals receiving dialysis prioritize well-being and quality of life over laboratory values and even death, yet most dialysis clinical and quality measures focus on the latter.¹⁻⁵ In 2017, a Centers for Medicare & Medicaid

focusing on biochemical markers and failing to capture patient priorities.

Incorporating the philosophy of person-centered care may promote better alignment of dialysis care and patient priorities. In person-centered care, clinicians and patients act as partners, engaging in shared decision making to coordinate care that is effective for and meaningful to the whole person over time.⁹⁻¹¹ This approach has been shown to strengthen patient-care team relationships and promote patient engagement, better health outcomes, improved quality of life, and greater care and job satisfaction in primary care, mental health, and geriatric populations.¹²⁻¹⁵

However, there are barriers to person-centered care adoption in the dialysis setting, including lack of resources, regulatory factors, and infrastructure, as well as rigid interdisciplinary roles.¹⁶ Integrating person-centered care into existing dialysis care processes, such as the development of interdisciplinary plans of care, may be one

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Services (CMS) Technical Expert Panel with 50% patient representation recommended using patient “life goals” to guide dialysis care.⁶ International experts suggested a similar approach in 2018 when KDIGO (Kidney Disease: Improving Global Outcomes) proposed replacing the traditional concept of “dialysis adequacy” with “goal-directed dialysis.”⁷ The CMS Conditions of Coverage support the use of patient goals to inform dialysis care, mandating the development of interdisciplinary plans of care that consider the “patient’s needs, wishes, and goals.”⁸ Despite this intention, patients and providers believe that dialysis care plans are often formulaic,

PLAIN-LANGUAGE SUMMARY

There is growing interest in making dialysis care less protocolized and more individualized. The required interdisciplinary plan of care is an opportunity to incorporate patient priorities more meaningfully into dialysis care. We implemented My Dialysis Plan, a person-centered care planning program that equips patients and care team members with tools to hold patient priority-driven and shared decision-making-focused care plan meetings, in a single outpatient hemodialysis clinic. We demonstrated that this program has potential to enhance patient and care team experiences and is feasible to incorporate into existing care processes. Future studies should assess the program's impact on outcomes and costs.

strategy to center care around patient priorities without overburdening care teams and patients. However, we lack models to guide such an approach.

To address this need, we developed My Dialysis Plan (UNC Kidney Center), a person-centered care dialysis interdisciplinary plan-of-care program, with input from clinic stakeholders.¹⁷ We then implemented My Dialysis Plan at a large suburban hemodialysis clinic with the aims of better aligning dialysis care with patient priorities and improving the dialysis care plan experience. We also sought to gain insight into key implementation considerations and areas for program improvement.

METHODS

Overview

We implemented My Dialysis Plan in a North Carolina dialysis clinic as a quality improvement (QI) project and conducted a research substudy to assess program potential for improving patient perceptions of care. The QI project was approved by the dialysis clinic's leadership and determined to be nonhuman subjects research by the University of North Carolina Institutional Review Board (17-0193). We performed, analyzed, and reported the QI project in accordance with Standards for Quality Improvement Reporting Excellent Guidelines (SQUIRE; Table S1).¹⁸ The research substudy was approved by the University of North Carolina Institutional Review Board (19-0743), and participants provided informed consent.

Intervention: My Dialysis Plan

My Dialysis Plan is an interdisciplinary plan-of-care program designed to align dialysis care with patient priorities, enhance the care-planning experience, and improve health through better education, patient-care team communication, and shared decision making.¹⁷ This person-centered care program provides a flexible yet tailorable structure to assist care teams in individualizing care plans.

Supporting program materials include patient education (informational video to encourage active participation in care planning and brochure about what to expect and how to prepare for the care plan meeting) and care team resources (training and care plan meeting materials). Open-source program resources are available at go.unc.edu/MyDialysisPlan.

Figure 1 displays an overview of My Dialysis Plan. In summary, care teams invite patients to participate in their care plan meetings in a private setting, and before the meeting, the care team collectively reviews individual assessments. During the meeting, the team elicits patient-identified priorities to guide the collaborative development of an individualized care plan with specific follow-up action items for care teams and patients. At the meeting conclusion, the care team reviews the plan with the patient to confirm understanding and agreement. After the meeting, designated care team members perform and document assigned actions, provide progress updates, and follow up with the patient to identify changing priorities.

Setting and Participants

The participating dialysis clinic, a joint venture between the University of North Carolina and a large dialysis organization, serves approximately 130 in-center hemodialysis patients and operates 2 daytime shifts. All adult hemodialysis patients (end-stage kidney disease [ESKD] or acute kidney injury) due for a care plan during the 6-month project period were eligible to participate. Patients received written letters about the QI project and its opt-out option (N = 1). All clinic personnel and nephrology providers participated in the QI project. All patient QI participants were eligible to participate in the research substudy except for non-English speakers. Research recruitment methods included dialysis clinic fliers and in-person clinic interactions with research personnel. Research participants received \$75 remuneration.

Implementation Approach and Data Collection

Before the 6-month QI project, we conducted interviews with clinic stakeholders to identify barriers to, facilitators of, and strategies for My Dialysis Plan implementation. We then created a preliminary implementation guide rooted in principles of the Consolidated Framework for Implementation Research (CFIR). The CFIR is a conceptual framework to guide program design, implementation, and evaluation, as well as identify factors that influence intervention effectiveness.¹⁹ The framework has 5 domains (intervention characteristics, outer setting, inner setting, characteristics of the individuals involved, and implementation process), each with constructs associated with effective implementation (Table S2). Throughout the project, we collected data on implementation practices and perceptions through interviews, direct observation, and surveys.

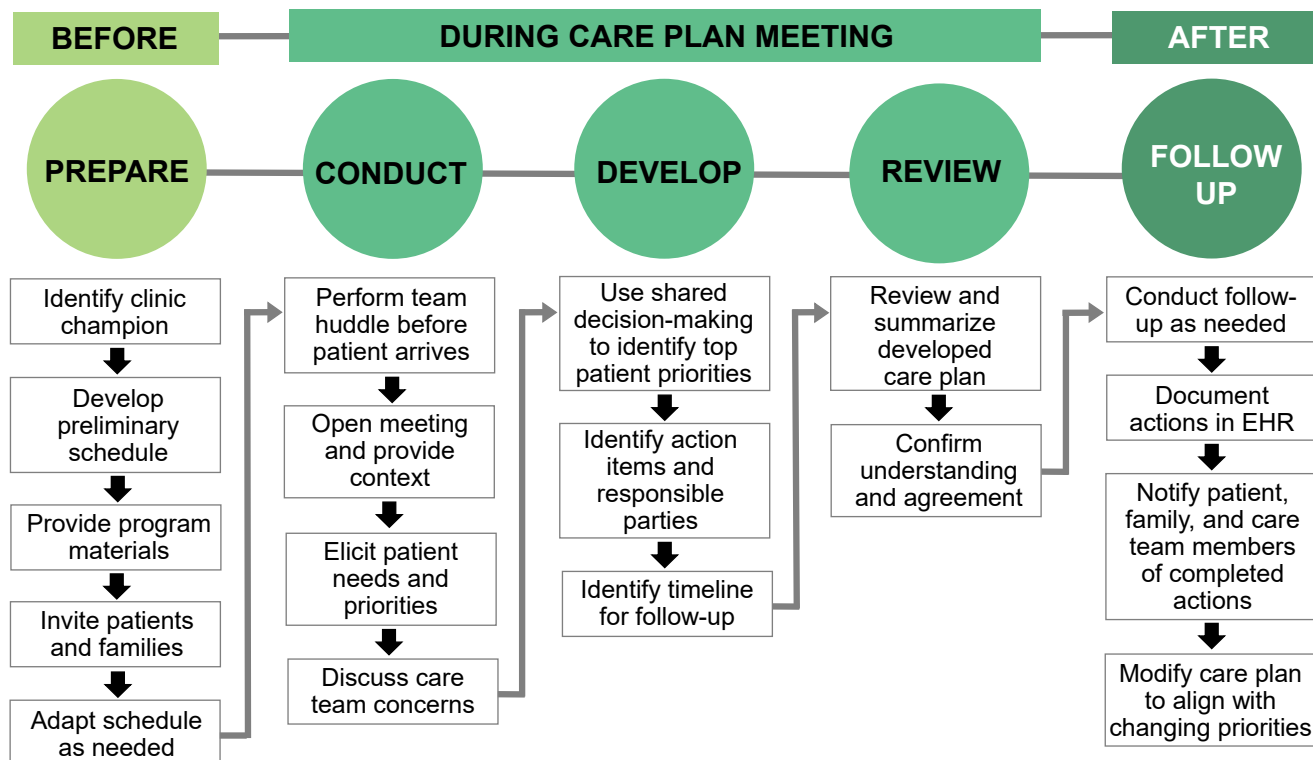


Figure 1. My Dialysis Plan care planning approach, depicted in 3 phases: before, during, and after the care plan meeting. In the weeks before the care plan meeting, a designated care team member issues invitations and schedules meetings. Just before the meeting, the care team huddles to review individual assessments. During the meeting, the care team elicits patient needs and priorities and uses shared decision making to develop an individualized plan of care with specific action items for care team members and the patient. At meeting conclusion, the care team reviews the care plan with the patient to confirm understanding and agreement. After the meeting, care team members perform assigned actions, provide updates on progress, and follow up with the patient to identify changing priorities. Abbreviation: EHR, electronic health record.

Interviews and Observations

A trained interviewer conducted semi-structured interviews with participating patients, clinic personnel, and medical providers before, during, and after program implementation (Table S3). Interviews occurred in person and responses were recorded on standardized note templates. Pre-project interviews assessed clinic needs, resource availability, and program perceptions. Monthly intra-project interviews assessed program barriers and facilitators, acceptability, and feasibility. Post-project interviews assessed participants' perceptions of program impact and sustainability potential. We supplemented interview data with field observations of clinic personnel on the treatment floor and during care team meetings to assess clinic workflow, culture, and team dynamics. Observations were recorded on standardized templates.

Participant Characteristics

We abstracted demographic, health, and prior care plan data from the electronic health records (EHRs) of all patient participants.

Surveys

Research participants completed the following questionnaires before and after project implementation: Modified

Health Care Climate Questionnaire (MHCCQ), Client-Centered Care Questionnaire (CCCQ), and Dialysis Care Individualization Questionnaire. The MHCCQ is a 6-item instrument measuring patient-perceived autonomy support from a single clinician or group of care providers; it has been validated in primary care and breast cancer populations.²⁰⁻²² The CCCQ is a 15-item instrument evaluating the client-centeredness of care and services of a new intervention; it has undergone reliability testing in medically frail populations.^{23,24} We modified select MHCCQ and CCCQ items to correspond with dialysis care processes (Table S4). The Dialysis Care Individualization Questionnaire is a research team–developed 5-item measure assessing patient-perceived individualization of dialysis care.

Data Analyses

Qualitative Data

We analyzed interview and observation data to identify barriers to and facilitators of My Dialysis Plan implementation. Data were entered into tables organized by time of interview (pre-QI, intra-QI, and post-QI), interviewee type (patient, clinic personnel, and medical

provider), and content (implementation practices, program components, participant perceptions, and experiences). Using the CFIR as our analytic framework, we coded text according to the 5 CFIR domains and 15 selected constructs, evaluating for patterns or themes in the data.^{25,26} Findings were used to iteratively update our implementation approach and program materials.

Quantitative Data

Descriptive statistics (eg, count and percentage and median with interquartile range) were used to report participant and pre- and post-program care plan characteristics. We calculated pre- and post-project MHCCQ and CCCQ scores according to instrument scoring instructions, and we calculated Dialysis Care Individualization Questionnaire scores according to the team-developed scoring system. We used paired *t* tests to compare pre- and post-project survey scores.

RESULTS

Participant Characteristics

Table 1 displays participant characteristics. There were 63 QI participants: 49 patients and 14 care team members (6 medical providers, 4 nurses, 2 dietitians, and 2 social workers). Patient participant mean age was 60 ± 16 years, with mean dialysis vintage of 4 years, 17 (35%) women, 27 (55%) of Black race, and 9 (18%) of Hispanic ethnicity. Of the 42 eligible patients, 28 (67%) enrolled in the research substudy. Overall, substudy participants had similar characteristics to patient QI participants.

My Dialysis Plan Care Plan Meetings

During the 6-month program, we conducted 54 care plans with 49 unique patients: 6 with acute kidney injury, 2 with initial ESKD, 3 with 90-day ESKD, and 43 with annual ESKD care plans. Meetings averaged 23 ± 7 minutes, 43 (80%) occurred off the treatment floor, and 8 (15%) used interpreter services.

Table 2 provides an overview of elicited priorities. Those most frequently elicited were related to symptom management (32 [59%] meetings), social support (25 [46%]), transplantation (16 [30%]), and maintaining or cultivating independence (13 [24%]).

Table 3 displays examples of patient-identified priorities, action items, and responsible parties. Action steps were most often assigned to medical providers (eg, specialist referral and medication or dialysis prescription change), social workers (eg, insurance coordination and financial assistance), and patients (eg, attend appointments and communicate about symptoms). Of the 78 identified care team action items, 41 (53%) had evidence of follow-up in the EHR or clinic-based electronic communication system.

Of the 37 patients who had EHR evidence of a care plan meeting at the participating clinic both before and during My Dialysis Plan implementation, we found that 6 (16%)

Table 1. Participant Characteristics

Characteristic	QI Project	Research Substudy
Patients		
No. of participants	49	28
Age, y	60 [49-73]	59 [49-70]
Female sex	17 (35%)	7 (25%)
Race		
Black	27 (55%)	18 (64%)
White	20 (41%)	8 (29%)
Other	2 (4%)	2 (7%)
Ethnicity		
Hispanic	9 (18%)	1 (4%)
Not Hispanic	40 (82%)	27 (96%)
Non-English speaking	7 (14%)	0 (0%)
Highest level of education completed		
<High school	—	10 (36%)
High school graduate or GED	—	10 (36%)
Some college	—	2 (7%)
≥4-y college degree	—	6 (21%)
Acute kidney injury	3 (6%)	1 (4%)
Dialysis vintage, y		
<1	6 (12%)	4 (14%)
1-5	26 (53%)	14 (50%)
≥6	17 (35%)	10 (36%)
Comorbid medical conditions		
Diabetes	24 (49%)	12 (43%)
Heart failure	23 (47%)	9 (32%)
Heart disease	17 (35%)	6 (21%)
Cancer	12 (24%)	1 (4%)
History of transplant	3 (6%)	3 (11%)
Transplant status		
Listed	5 (10%)	5 (18%)
Evaluation in process	3 (6%)	2 (7%)
Evaluated and did not qualify	20 (41%)	12 (43%)
Not under evaluation	21 (43%)	9 (32%)
Clinic personnel and medical providers		
No. of participants	14	—
Professional role		
Medical provider	6 (43%)	—
Nurse	4 (29%)	—
Dietitian	2 (14%)	—
Social worker	2 (14%)	—

Note: Participant characteristics at time of QI project start. Values are listed as number (percent) or median [interquartile range].

Abbreviations: GED, general education diploma; QI, quality improvement.

patients were accompanied by a care partner or family member with My Dialysis Plan (vs 0 prior) and 33 (89%) meetings were held off the treatment floor (vs 2 [5%] prior). Moreover, 26 (70%) My Dialysis Plan care plans documented a nonmedical patient priority and associated action item (vs 4 [11%] prior). However, there was no change in documented advanced care planning (eg, advance directives and end-of-life preferences) discussions pre- to post-program, with no evidence of such discussions in any of the 37 pre- or post-program care plan notes.

Table 2. Priorities and Needs Elicited in My Dialysis Plan Care Plan Meetings

Topics	Meetings (N = 54)
Medical	45 (83%)
Physical symptoms	27 (50%)
• Fatigue, energy, shortness of breath, weakness, pain, constipation, poor appetite, syncope, decreased libido	
Transplant	16 (30%)
• Interest, education, evaluation, unsure of status (listed/unlisted %)	
Services	10 (19%)
• Physical therapy, occupational therapy, mental health therapy, home health	
Mood symptoms	9 (17%)
• Hopelessness, depression, anxiety, fear	
Medications	7 (13%)
• Questions, needs	
Medical concerns	7 (13%)
• Forgetfulness, pain management, impaired vision, reduced hand dexterity	
Care coordination	4 (7%)
• Updated skilled nursing facility orders, scheduling of other care around dialysis	
Psychosocial	34 (63%)
Social support	25 (46%)
• Spend time with family, attend church, host events, visit friends, cook for neighbors	
Independence	16 (30%)
• Driving, relocating, self-sufficiency for activities of daily living and/or finances, vocational rehabilitation	
Financial	8 (15%)
• SSDI/SSI applications, community resources, insurance	
Transportation	8 (15%)
• Medical appointments, social gatherings, volunteering, work, shopping	
Housing and food	7 (13%)
• Housing and food insecurity; skilled nursing, assisted living, senior care options	
Personal	23 (43%)
Hobbies	16 (30%)
• Video-gaming, bowling, going out to eat, camping, horseback riding, yardwork, music, painting, backpacking, driving, gardening, fishing	
Physical activity	12 (22%)
• Exercise, play sports, hike, ride bike, climb flight of stairs	
Travel	9 (17%)
• Local, distance, dialysis planning	

Note: Data reflective of both patient-identified and care team-identified priorities, all discussed during the care plan meeting.

Abbreviations: SSDI, Social Security Disability Insurance; SSI, Supplemental Security Income.

Application of CFIR Constructs in Program Implementation and Evaluation

Table 4 displays project-tailored definitions and applications of the 15 CFIR constructs that guided My

Table 3. Patient-Identified Priorities, Responsive Action Items, and Responsible Parties

Patient Priority	Responsive Action Item(s)	Responsible Party
Increase energy level	Refer to cardiologist, change dialyzer size, monitor Kt/V	Nephrologist
Address anxiety and forgetfulness	Refer for neuropsychological evaluation, prescribe antidepressant and monitor effects	Nephrologist and nurse
Eat more diverse foods	Discuss alternative protein options that: (1) improve appetite and (2) fit within patient budget to ensure sustainable provision	Dietitian and social worker
Spend more time at home	Schedule home dialysis education class	Social worker
Obtain eyeglasses	Refer to ophthalmologist to update prescription, confirm insurance benefits	Nephrologist and social worker
Maintain independence	Refer to vocational rehabilitation services, follow up on status of transplant evaluation	Social worker
Attend monthly family gatherings	Communicate family gathering schedule to care team, modify treatment start time or day of week to facilitate attendance	Patient and nurse
Play piano	Refer to hand specialist for pain and numbness in left hand	Nephrologist

Dialysis Plan implementation. Key implementation features (CFIR domain) included clinic stakeholder buy-in to the care plan approach and the underlying person-centered care philosophy (characteristics of individuals and inner setting), clinic program champion identification (process), stakeholder involvement in development and modification of implementation strategies and resources (process and intervention characteristic), and program alignment with existing CMS guidance and regulations for interdisciplinary care plans (outer setting).

My Dialysis Plan Implementation Experience and Findings

Figure 2 displays the project timeline. Before My Dialysis Plan implementation, we built clinic capacity through program presentations and training sessions. At project start, the QI support team provided on-site administrative assistance and transitioned to no support by project end. Table 5 displays interview findings and responsive program updates.

Before implementation, care team members expressed enthusiasm about My Dialysis Plan, viewing it as an opportunity to apply underused clinical skills, build relationships, and individualize care. There was apprehension around care plan meeting duration, scheduling challenges, language barriers, and patient transportation.

Table 4. Project-Tailored Definitions and Application of CFIR Constructs Guiding Implementation and Evaluation

Construct ¹⁹	Project-Tailored Definition	Application
Intervention Characteristic		
Relative advantage	Perceived advantages of My Dialysis Plan compared with the clinic's existing care plan approach	Presented an opportunity to provide more individualized dialysis care that was responsive to patient-identified priorities and consistent with care team members' desired practice
Adaptability	Ability to modify and tailor My Dialysis Plan program components and resources to fit changing clinic needs	Iteratively updated program throughout implementation in response to stakeholder feedback
Complexity	Perceived difficulty, burden, learning curve, and/or workflow disruption associated with My Dialysis Plan implementation	Assigned program responsibilities to align with existing job roles; minimized additional responsibilities; provided program trainings
Outer Setting		
External policy & incentives	Alignment of My Dialysis Plan with CMS guidance and regulations	Developed program to support CMS Conditions of Coverage
Inner Setting		
Structural characteristics	Clinic size, characteristics, and social architecture	Selected large suburban dialysis clinic to enhance transferability of developed implementation processes
Implementation climate	Clinic stakeholders' readiness for My Dialysis Plan implementation (ie, buy-in from all clinic stakeholders, cultural norms and values)	Interviewed clinic stakeholders throughout program implementation; discussed program logistics at monthly staff meetings
Compatibility	Clinic stakeholders' desire for a person-centered care planning; fit of My Dialysis Plan with existing clinic workflows	Collaboratively developed program with patients, care teams, and medical providers to enhance relevance; refined implementation processes with clinic stakeholders to ensure local fit
Access to information	Readily available health-literacy level appropriate My Dialysis Plan materials for patients and care teams	Developed mixed-media education/implementation resources; updated program resources in response to stakeholder input
Characteristics of Individuals		
Knowledge & beliefs about the intervention	Clinic stakeholders' attitudes and beliefs about person-centered care planning and dialysis care planning experiences	Provided education on person-centered care planning; collected and incorporated clinic personnel feedback on program components
Self-efficacy	Care team members' beliefs in their abilities to elicit and align care with patient priorities and document appropriately	Provided initial administrative support and training materials to ease implementation; sought guidance from goal-directed care expert
Process		
Planning	Degree to which tasks for implementing My Dialysis Plan were developed in advance, and the quality of the methods	Collaboratively developed implementation plan with clinic personnel; assigned responsibilities to align with individual skillsets/comfort
Engaging	Winning clinic stakeholder buy-in through education and training	Conducted clinic personnel informational and training sessions; proactively sought stakeholder feedback
Implementation leaders & champions	Engaging individuals with influence on attitudes and beliefs of care team members and identifying care team members to take primary responsibility for My Dialysis Plan implementation	Engaged clinic operations manager in implementation plan development; identified dietitian as program champion
Executing	Implementing My Dialysis Plan according to the collaboratively developed implementation plan	Adhered to implementation plan when feasible; iteratively modified resources and implementation plan as needed
Reflecting & evaluating	Obtaining feedback about My Dialysis Plan implementation via monthly debriefing interviews with clinic stakeholders	Held routine care team and QI support team meetings to address barriers/facilitators; interviewed clinic stakeholders

Abbreviations and Definitions: care team, social workers, dietitians, nurses, and medical providers; CFIR, Consolidated Framework for Implementation Research; clinic stakeholders, patients, clinic personnel, and medical providers; CMS, Centers for Medicare & Medicaid Services; QI, quality improvement.

Some questioned whether patients would participate in meetings held outside of dialysis treatment times. However, most patients were willing, citing the significance of fewer distractions (eg, intradialytic symptoms and beeping machines) and a more private environment. In addition, the “newness” of My Dialysis Plan was attractive to some,

offering a change from everyday clinic routines. A few patients doubted the program could meaningfully alter their care, with one stating “...there’s not a whole heck of a lot you can do after 5 years [on dialysis]. I’ve already established what I’m willing to do and what I’m not willing to do.”

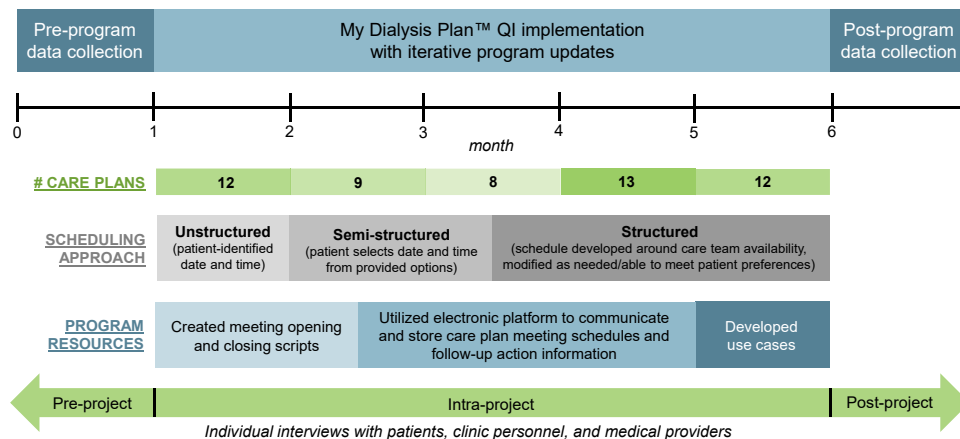


Figure 2. Quality improvement (QI) project implementation timeline with iterative program updates. Pre-/post-program data were collected through individual interviews with patients, clinic personnel, and medical providers in the months preceding and following the 6-month project period. Iterative program changes were made in response to intra-project feedback from clinic stakeholders (eg, scheduling approach, program resources).

Throughout program implementation, stakeholders described improved interdisciplinary teamwork and patient partnerships. Compared with previous care plan meetings, My Dialysis Plan meetings yielded greater insight into the patient as a whole person, providing context to support shared decision making and build rapport for subsequent interactions. In general, care teams found meetings less time-burdensome than expected, noting increased efficiency with experience. However, challenges with scheduling, communication, meeting content, and follow-up necessitated program modifications.

Initially, patients self-selected a care plan meeting time, but this was impractical to coordinate due to care team schedules, monthly meeting burden (often >10 care plan meetings per month), and an unexpectedly high volume of patients opting for private meetings which required additional planning compared to chairside meetings. As

such, patients were offered multiple meeting times from which to choose, but scheduling remained arduous. In project month 3, patients were offered specific meeting times and were encouraged to propose alternatives if they or other planned attendees had conflicts. This approach was acceptable to most patients because the clinic coordinated transportation.

Care teams experienced some initial discomfort facilitating meetings (ie, initiating and closing conversations, embracing silence, and eliciting priorities). In response, clinic personnel and the QI support team developed scripts to simplify meeting introductions (ie, set expectations for meeting purpose, approach, and length) and closings (ie, review meeting notes, assess patient agreement, and adjourn) and sample “use” cases tying frequently cited patient priorities to actionable aspects of care. Care teams also found that acute kidney injury care plans warranted

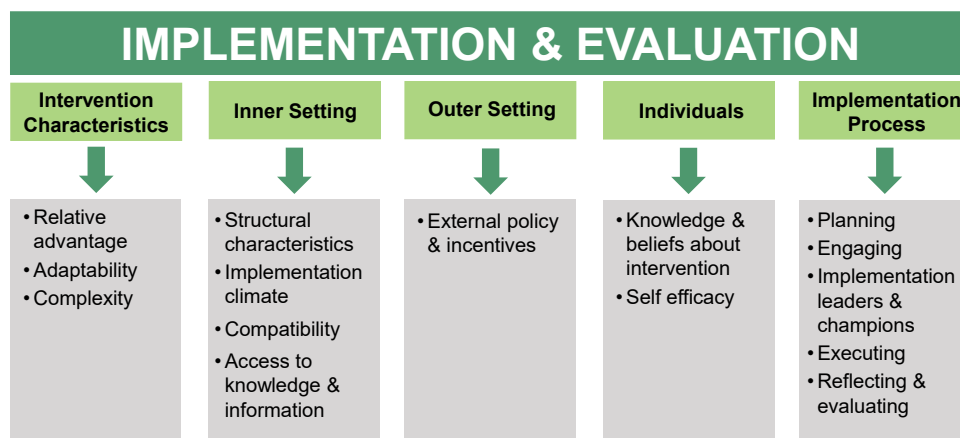


Figure 3. Consolidated Framework for Implementation Research (CFIR) domains and constructs that guided My Dialysis Plan implementation and evaluation. The figure outlines the 5 CFIR domains (light green boxes) and the 15 selected constructs (gray boxes) that guided My Dialysis Plan implementation and evaluation.

Table 5. Interview Findings, Responsive Program Updates, and Future Recommendations

Component	Key Findings	Responsive Update(s)/Recommendation(s)
Before Implementation		
Overall impressions	<ul style="list-style-type: none"> • Program resources clear and helpful for planning • Program burden similar to that of existing CP processes • Patients welcomed option for private meetings to address personal matters • Enthusiasm about prospect of improving care plans, individualizing care, and applying different skill sets 	—
Barriers	<ul style="list-style-type: none"> • Unreliable patient transportation with difficult-to-adjust pick-up/drop-off times • Perceived patients as unwilling to participate in activities requiring more clinic time • Non-English-speaking patients • Time investment in private meetings and associated scheduling challenges 	<ul style="list-style-type: none"> • Review transportation at time of patient CP invitation • Discuss rationale and potential benefits of privacy • Use interpreter services • Schedule meetings based on patient and care team availability
Facilitators	<ul style="list-style-type: none"> • Patient interest in meetings focused on their priorities • Clinic champion to lead invitations, scheduling, and care team coordination • Buy-in, enthusiasm, and commitment to improving CPs 	<ul style="list-style-type: none"> • Show patient video as part of meeting invitation • Dietitian selected to lead CP program • Maintain through group trainings, engagement of key stakeholders in addressing barriers, and flexibility
During Implementation		
Overall impressions	<ul style="list-style-type: none"> • Patients amenable to private meetings due to interest sparked by meeting invitation, privacy, and opportunity for family/care partner inclusion • Private meetings reduce distractions, increasing range/depth of discussed topics • Questions elicit different information than previous CP meetings (eg, motivations, priorities), building rapport and positively affecting patient-care team relationships • Priority-based discussions facilitate patient education • Overall enhanced sense of interdisciplinary teamwork and patient partnership 	<ul style="list-style-type: none"> • Continue to encourage meetings off the treatment floor, reference potential benefits during CP invitation • Incorporate CP findings into routine patient interactions • Discuss CP experiences during monthly staff meetings to cultivate cross-clinic enthusiasm and buy-in
Barriers	<p>Communication</p> <ul style="list-style-type: none"> • Difficult to share information across care team members (eg, schedule changes, follow-up updates) on a frequent enough basis • Meeting schedule not relayed to treating nurses and PCTs, resulting in patients starting/leaving treatment before CP meeting • Individual assessment findings not discussed with other care team members • Some patients prefer to discuss matters with individual care team members <p>Process</p> <ul style="list-style-type: none"> • Meeting scheduling and patient invitations time consuming • CP meeting beginnings and endings unscripted and often inefficient • CP meeting facilitator sometimes overlooked conversation guide questions • CP follow-up tasks were sometimes missed and/or not communicated to others • CP meeting notes not consistently shared with other clinic personnel 	<ul style="list-style-type: none"> • Use shared online communication system • Place printed monthly schedule at nursing station • Perform brief team huddle before CP meetings • Individual care team member follow-up as needed • Develop standardized monthly scheduling template • Create meeting scripts to support meeting facilitator • Restructure conversation guide • Create shared online communication system • Place copy of developed care plan at nursing station

(Continued)

Table 5 (Cont'd). Interview Findings, Responsive Program Updates, and Future Recommendations

Component	Key Findings	Responsive Update(s)/Recommendation(s)
	<ul style="list-style-type: none"> • CP meetings for patients with acute kidney injury felt inadequate when laboratory values de-emphasized • Care team turnover and [un]planned care team member absences 	<ul style="list-style-type: none"> • Include laboratory test review in acute kidney injury meetings • Redelegate tasks and cross-train individuals
Facilitators	<ul style="list-style-type: none"> • Use of a consistent CP meeting facilitator and note taker (learned roles) • Conversation guide assisted with difficult-to-facilitate meetings • Active listening supported shared decision-making processes • Private meetings beneficial for clinic flow (fewer people on treatment floor) and patients (more physical space for family/care partner to join) • Satisfied patients encouraged others to attend and participate in private meetings 	—
After Implementation		
Overall impressions	<ul style="list-style-type: none"> • Care team commitment to and investment in the program positively affected overall dialysis care provision • Meetings elicited important information not elicited in prior CP approach • A standardized monthly approach to scheduling and invitations eased implementation, but flexibility in approach was paramount • Patient priority-based meetings led to meeting variety that enhanced patient and care team engagement 	—
Remaining barriers	<ul style="list-style-type: none"> • Unexpected clinical emergencies that delay care team members, affecting CP meeting schedule and clinic workflow • Some medical providers felt frustrated when only nonmedical patient priorities elicited, especially when solutions were difficult (eg, resources) • Inconsistent sharing of information from CP meetings with other clinic personnel • Lack of structure for individualized follow-up led to overlooked action items 	<ul style="list-style-type: none"> • Remain flexible/communicative, identify make-up CP meeting days or alternative options (eg, telephone call) • Reinforce role of addressing nonmedical priorities in enhancing patient activation in medical issues; encourage medical providers to identify links between non-medical priorities and medical issues • Provide RNs access to developed CPs • Develop interteam accountability through identified days/times to complete follow-up and documentation
Facilitators	<ul style="list-style-type: none"> • Clear documentation with designated follow-up actions promoted accountability • Shared understanding about patient needs/challenges and available community resources among all clinic stakeholders • Ongoing commitment and buy-in, reinforced as program experiences showed the patient and care team value of individualizing care based on patient priorities 	<ul style="list-style-type: none"> • Communicate about and document follow-up efforts • Continue resource and knowledge sharing at staff meetings and during informal care team interactions

Note: Data ascertained from semi-structured interviews with hemodialysis patients, social workers, dietitians, nurses, PCTs, and medical providers at participating clinic. Data summarized and reported in aggregate to protect participant privacy. Abbreviations: CP, care plan; PCT, patient care technician; RN, registered nurse.

greater focus on laboratory values than ESKD care plans because patient priorities were often related to kidney injury recovery status. Finally, care plan follow-up was occasionally missed or not communicated to others. In response, the clinic adopted a Health Insurance Portability and Accountability Act–compliant electronic platform to share information.

Despite intermittent scheduling and communication hurdles, care teams thought that program advantages

outweighed the challenges, electing to continue My Dialysis Plan post-program. Overall, participants found the program's educational resources to be helpful, observing that the brochure adequately described care plan meetings and the video equipped patients for active participation. Patients reported feeling heard and better informed about their dialysis care. One patient commented, "I feel like [the care team] listened and if they needed clarification, they asked for it. If I needed clarification, it was provided [to

me].” Although care team members were occasionally frustrated by their inability to address some patient priorities due to limited resources or interventions, they recognized that heightened awareness supported deeper patient–care team relationships. One care team member said, “It enhances relationships.... Getting to know [patients] and understanding them, helping them see we are invested...that’s a valuable end point.” A patient described, “I love talkin’ just like we did in that meeting. It showed that they care, and they will do something to try to help. That’s what matters to me. I know it’s not always possible for things to go the way I want them to go.” Despite program benefits, care teams continued to struggle with completing and communicating all follow-up action items. Despite this lack of follow-up, most patients identified the team’s interest in their priorities as a program benefit.

Research Findings

Among the 25 research participants with pre- and post-project data, there was no significant change in pre- to post-project survey scores of perceived autonomy support from providers (0.3 ± 1.3 ; $P = 0.3$), patient-centeredness (1.2 ± 5.2 ; $P = 0.2$), or dialysis care individualization (0.1 ± 0.8 ; $P = 0.5$).

DISCUSSION

Our findings suggest that My Dialysis Plan, an interdisciplinary plan-of-care program rooted in person-centered care principles, has the potential to support more individualized dialysis care and improve care plan experiences. Project participants identified interdisciplinary team commitment, accountability, and the structured yet flexible care plan meeting approach as key implementation elements. Our report also underscores the significance of incorporating diverse stakeholder input throughout implementation of new programs to promote buy-in, feasibility, and sustainability.

Despite initial implementation concerns raised by project stakeholders and others,¹⁶ we found that in most cases, the dialysis care team could use My Dialysis Plan to elicit and link patient priorities to actionable aspects of dialysis care. In shifting the care plan focus from problems to priorities, patients felt acknowledged and respected as whole persons, and care teams better understood patient behaviors (eg, tardiness due to lack of driver’s license) and motivations (eg, symptom management). As such, care teams could more easily connect medical advice to patient priorities, engendering patient buy-in and increasing the likelihood of adherence.

Care plan meetings did not have to be long to garner rich information, as evidenced by brief discussions with skeptical patients who chose not to deeply engage in the process. In these instances, care team members still found the person-centered care approach worthwhile, citing that even a small amount of new information (eg, life

experiences and stressors) benefitted future interactions. In cases without simple solutions or overt connections between patient priorities and dialysis, patients still felt empowered from the opportunity to be heard. These experiences fostered trust, improved care experiences, and reminded care team members why they chose to work in dialysis.

In addition, these conversations cultivated shared decision making, a process in which clinicians support patient autonomy by providing comprehensive information (eg, education and treatment options) and working with patients to reach informed decisions that match their individual preferences.^{27,28} Studies in other chronic illness populations have shown that shared decision making increases patient knowledge and self-efficacy, strengthens care team–patient relationships, fosters patient activation, improves patient-reported outcomes, and decreases health care use.^{29–31}

In My Dialysis Plan care plan meetings, shared decision making often manifested as trade-off discussions. For example, a patient with a history of high interdialytic weight gains described feeling too fatigued to eat lunch with their grandchild after treatment. In response, the care team provided salt and fluid intake counseling, explaining that lower weight gains and the resultant gentler fluid removal might mitigate treatment-associated fatigue. Upon understanding the potential link between fluid control and post-dialysis fatigue, the patient was more receptive and ultimately adherent to the suggested dietary restrictions. Care team members found program resources helpful in supporting these conversations, appreciating the structured conversation guide and case examples. Moreover, and consistent with the existing literature,^{32,33} engaging in shared decision making left patients and care team members feeling more connected and aligned in care goals.

These findings are particularly relevant given the recent release of the CMS End-Stage Renal Disease Treatment Choices payment model.³⁴ The model aims to give ESKD beneficiaries enhanced freedom and choice and encourage greater use of home dialysis and kidney transplantation. These goals align closely with the intent of My Dialysis Plan. As such, program resources may be useful in facilitating patient-care team conversations about modality selection and transplantation. More broadly, the resources could support additional goals of the model by fostering shared decision making and promoting patient activation.

Despite program successes and care team commitment to the person-centered care philosophy, there were challenges with incorporating My Dialysis Plan into clinical practice. Some were easily resolved by collaboratively modifying program resources, such as developing scripts to ease meeting facilitation and adding resources to support shared decision making. Conversely, care plan meeting scheduling required iterative attempts to establish a sustainable approach. Still other challenges persisted throughout the project, namely insufficient interteam communication and lack of infrastructure for care plan

follow-up. These require additional attention in future implementations. Integrating My Dialysis Plan–elicited information into the EHR would be one way to streamline communication, document priorities, and promote accountability for follow-up.

Finally, we observed no change in documented advance care planning discussions pre- to post-program, suggesting that patients and/or care teams may need additional support to comfortably engage in these conversations. As such, future program iterations could place greater emphasis on the topic and equip participants with existing serious illness conversation resources.^{35,36}

Project strengths include incorporation of stakeholder input throughout My Dialysis Plan implementation, selection of a large dialysis clinic in which logistical barriers were likely to be encountered, and collection of end-user experiential data throughout the project.

Limitations relate to the transferability of findings due to study implementation at a single clinic, since varying clinic sizes and cultures, patient populations, and/or ownership structures may present different implementation climates, facilitators, and barriers. In addition, we relied on qualitative data to support our conclusion that My Dialysis Plan has the potential to individualize dialysis care and promote more meaningful care plan experiences. Our research substudy findings showed no significant pre- to post-project change in patient-reported perceived autonomy support from providers, patient-centeredness of care, or dialysis care individualization. These results stand in contrast to the overall positive sentiments expressed in participant interviews.

Potential explanations for these somewhat discrepant findings may relate to differences in participants in the research substudy and overall QI project or biases in survey responses. For example, response-shift bias occurs in settings in which a respondent's frame of reference for a measured construct(s) changes between pre- and post-testing.³⁷ In our project, many patients answered the pre-implementation survey questions with the highest possible level of agreement, verbalizing unawareness of the possibility or need for improvement in the measured constructs. However, during post-project interviews, many explicitly described a meaningful change in these areas. Because there were not more positive response options available on the post-project surveys, respondents indicated the same highest level of agreement as they did on preproject surveys. Other types of response bias related to social desirability (eg, lack of privacy during administration of surveys) and/or acquiescence bias (eg, survey fatigue) are also possible.³⁸ Finally, our small pilot study was not designed or powered to evaluate for statistically significant differences in outcomes in the pre- and post-project periods. Future studies examining program impact on patient-reported outcomes such as care satisfaction, activation, and health-related quality of life, as well as clinical outcomes such as hospitalizations and use of palliative and hospice services, are needed.

In conclusion, we demonstrated that a person-centered care planning approach has the potential to enhance patient and care team experiences and is feasible to incorporate into the current structure of care. Future studies are needed to assess program sustainability and effect on patient-reported and clinical outcomes, as well as develop implementation practices for diverse clinics.

SUPPLEMENTARY MATERIAL

Supplementary File (PDF)

Table S1. SQUIRE guidelines and manuscript section with the relevant content.

Table S2. CFIR constructs and definitions.

Table S3. Interview guide topics, questions, and probes.

Table S4. Research substudy surveys with source and adapted questions.

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Can individualized care plans improve the dialysis experience?



49
hemodialysis
patients



14
care team
members

My Dialysis Plan™

a person-centered care planning program

PATIENT
PRIORITIES



ACTIONABLE
ASPECTS OF CARE



single center, 6-month
quality
improvement program

PATIENT PRIORITIES



IMPACT

Qualitative
NET POSITIVE



Care teams better understood
patient behaviors and motivations.
Patients felt acknowledged
and respected as whole persons.

Quantitative
NET NEUTRAL

No significant change
in patient survey
metrics.



Conclusion: My Dialysis Plan™, an interdisciplinary plan-of-care program rooted in person-centered care principles, has potential to support more individualized dialysis care and improve care plan experiences.

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