

A Change Package To Increase Home Dialysis Use

Key Change Ideas for Dialysis
Facilities to Drive Local Action





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I. Introduction

This change package is intended to support dialysis facilities and End State Renal Disease (ESRD) Networks in increasing the number of patients using home dialysis modalities, which include peritoneal dialysis (PD) and home hemodialysis (HHD). The change package includes actionable change ideas, collected from top-performing dialysis facilities that have increased the use of home dialysis. The change ideas presented are intended as a menu of interventions from which program leaders can choose to implement within their facilities.

Why Increasing Home Dialysis Use Matters

More than 37 million people in the United States suffer from kidney disease, which was the ninth leading cause of death in 2017, costing an estimated \$114 billion each year.^{1,2,3} Most people start their treatment at in-center hemodialysis (ICHD) clinics. The treatment includes three weekly treatments for four hours at a time, which can be taxing for patients and their families. Home dialysis, including PD and HHD, offers another choice for patients with ESRD. This option offers an improved quality of life and higher survival rates, while allowing patients to dialyze in a familiar environment.^{4,5,6,7} Despite these advantages, home dialysis is underused. Only 2 percent of hemodialysis patients receive treatment at home, even though 85 percent are eligible.^{8,9} Furthermore, up to 40 percent of patients would have chosen home dialysis had they been given the chance.¹⁰ A clear opportunity exists to increase the number of patients offered home dialysis.

A Nationwide Effort to Improve Kidney Care

In 2019, the U.S. Department of Health and Human Services launched the Advancing American Kidney Health Initiative, which outlines several bold goals to address kidney disease issues in the United States.¹¹ The initiative focuses on fewer patients developing kidney failure, fewer Americans receiving dialysis in dialysis clinics, and more kidneys being made available for transplant. Regarding home dialysis, the initiative has set a goal of 80 percent of patients newly diagnosed with ESRD receiving dialysis in the home or receiving a transplant by 2025. Dialysis clinics, kidney care stakeholders, and partners across the continuum of care will be needed to create this level of systemwide change. This change package was developed to help dialysis facilities implement actionable tactics to ensure that patients with ESRD are given home dialysis opportunities.

How to Get Started

Change happens at the local level. Dialysis facility Quality Assessment & Performance Improvement (QAPI) meetings are the perfect place to start. Giving interdisciplinary team (IDT) members a copy of this change package for review will allow them to identify and prioritize opportunities to increase the number of patients educated, referred, trained, and utilizing home dialysis modalities. The change ideas presented in this change package can serve as “tests of change” that drive performance improvement and quality improvement programs.



About QAPI: QAPI merges quality assessment (QA) and performance improvement (PI) into a comprehensive approach to quality management. QA is the process of meeting standards and ensuring care reaches an acceptable level. PI is the proactive, continuous study of processes with the intent to identify opportunities and test new approaches to fix the underlying causes of persistent, systemic problems. Data-driven QAPI programs may be customized to facility needs. Key steps include:

- Identifying the problem and defining the goal
- Deciding on a measurement to monitor improvement
- Brainstorming solutions based on barriers and root causes
- Planning an intervention
- Using plan-do-study-act (PDSA) to implement the improvement project

Learn more about QAPI: <https://esrdnetworks.org/resources/toolkits/mac-toolkits-1/qapi-toolkit/qapi-toolkit>

II. Change Package Methodology

The ideas presented in this change package were identified through extensive interviews with high-performing dialysis facilities. The facilities were selected using home dialysis quality improvement activity data submitted to CROWNWeb as well as Dialysis Facility Compare data. During the interviews, systemic themes emerged and were organized into driver diagrams. The Institute of Healthcare Improvement (IHI) describes a driver diagram as a visual display of what drives and contributes to achieving an overall aim.¹² The visualization shows the relationship between the overall aim of an initiative to its primary drivers, which are systems components that can help positively contribute to the overall aim. Secondary drivers are the actions and interventions that help improve the primary drivers. Each secondary driver has multiple change ideas to improve outcomes.



III. Home Dialysis Drivers

Interviews with high-performing home dialysis programs revealed drivers being used to increase the use of home dialysis for eligible patients. Table 1 displays the primary and secondary drivers identified with high-performing facilities.

Table 1. Primary and Secondary Drivers to Increase Home Dialysis Use

AIM: INCREASE HOME DIALYSIS USE	
PRIMARY DRIVERS	SECONDARY DRIVERS
1. Foster physician support of home dialysis	1a: Strengthen nephrologists' comfort level with dialysis at home 1b: Improve primary care and specialty physician awareness and education
2. Adopt a mindset that home dialysis is possible	2a: Frequently address misconceptions and promote benefits among staff members and patients 2b: Consider all patients, widely refer patients, and explore options before declining patients for home modalities
3. Elevate home program collaboration and refine operations	3a: Promote a culture of teamwork and build strong relationships 3b: Measure, monitor, and assess program metrics
4. Provide continuous patient and caregiver support	4a: Individualize patient and caregiver education 4b: Identify and address barriers in the patient's home 4c: Recognize and support patient and family psychosocial needs



IV. Key Change Ideas

The following driver diagrams (Tables 2-10) expand on the home dialysis drivers (Table 1) and include specific change ideas for all the secondary drivers identified with high-performing home dialysis facilities.

Table 2. Strengthen Nephrologists’ Comfort Level

PRIMARY DRIVER #1: FOSTER PHYSICIAN SUPPORT OF HOME DIALYSIS
Secondary Driver #1a: Strengthen nephrologists’ comfort level
<p>Nephrologists are the captains of successful home dialysis programs and are at the heart of dialysis education and prescribing choices. Strong home dialysis programs have a physician champion, who is essential to a positive home dialysis culture within dialysis facilities.</p> <p>Change Ideas</p> <ol style="list-style-type: none"> 1. Support nephrologists one-on-one with writing prescriptions for PD and HHD using case studies and published resources for reinforcement. 2. Implement dedicated rotations with renal fellows at the home dialysis facility. Ensure they participate in clinic visits, weekly plan-of-care (POC) meetings, and QAPI meetings. 3. Strengthen relationships between home nurses and less experienced nephrologists to build trust and share knowledge. 4. Ask hesitant nephrologists, “What dialysis would you want for yourself or your family?” 5. Provide research studies on patient quality of life or electrolyte management, e.g., to nephrologists who refute home dialysis as a viable option for their patients. 6. Share home patient success stories to motivate nephrologists and reach them emotionally. Also share patient quotes to make the patient voice “real” when talking to others. 7. Present case studies of unique patients or challenging clinical situations with solutions that worked and patient disposition. 8. Partner with local nephrology fellowships to offer on-site educational open houses and invite fellows and their attendings. 9. Include home dialysis during nephrology training and fellowship and exposure of it to all medical students. 10. Invite nephrologists to attend meetings and lectures to address home dialysis misconceptions and communicate benefits. 11. Recommend that all nephrologists complete online education with CMEs related to home modalities (e.g., PD University). 12. Have nephrologists comfortable with home dialysis mentor new nephrologists on peritoneal dialysis and home hemodialysis. 13. Create or request operational playbooks for starting PD Urgent Start Programs, promoting collaboration between nephrologists and other physicians. 14. Use persuasive language and leverage relationships to encourage hesitant nephrologists to refer patients for home training.



Table 3. Improve Primary Care and Specialty Physician Awareness and Education

PRIMARY DRIVER #1: FOSTER PHYSICIAN SUPPORT OF HOME DIALYSIS
Secondary Driver #1b: Improve primary care and specialty physician awareness and education
<p>More physicians need to understand the benefits of home dialysis to help increase the use of this modality. This is important as physicians have a central role in patient education and decision making. Successful home programs have taken the lead to educate everyone about home dialysis.</p>
<p>Change Ideas</p> <ol style="list-style-type: none">1. Conduct physician-to-physician education (e.g., nephrologist to primary care/intensivist/pulmonologist) informally and frequently to educate and address misconceptions and share clinical knowledge.2. Invite surgeons who place PD catheters to home programs to meet with nurses for process improvement and case study reviews of complications and to meet successful PD patients.3. Develop strong relationships (“go out of your way”) with a small number of surgeons through regular meetings, providing feedback, disseminating education, and recommending relevant conferences to attend.4. Communicate the sense of urgency to surgeons who place PD catheters to prioritize direct starts on PD instead of directing patients to in-center hemodialysis (ICHD).5. Share resources such as online videos or research papers to guide surgeons who place PD catheters to develop best practices.6. Have nephrologists participate in grand rounds with internal medicine physicians, who may have misinformation or may not be familiar with home dialysis options.7. Educate primary care physicians about the benefits of home modalities, including equivalent or better clinical outcomes than ICHD, better patient-reported quality of life, and marked cost advantages.8. Support communication between the home nurses and the surgeons who place PD catheters to troubleshoot issues and share patient outcomes.9. Encourage surgeons to be receptive to feedback and take accountability to increase their proficiency and impact success rates.10. Expose abdominal surgical residents to PD catheter placement surgeries and the benefits of PD.11. Engage hospital leadership around the potential cost benefits of placing a PD catheter or permanent bloodstream access in lieu of placement of a central venous catheter.12. Share the disposition of patients who successfully transitioned home with hospital staff to “close the loop” and increase others’ awareness of how patient barriers are overcome by home programs.



Table 4. Frequently Address Misconceptions and Promote Benefits Among Staff Members and Patients

PRIMARY DRIVER #2: ADOPT A MINDSET THAT HOME DIALYSIS IS POSSIBLE
Secondary Driver #2a: Frequently address misconceptions and promote benefits among staff members and patients
<p>The benefits of home dialysis must break through the noise and medical inertia to achieve widespread adoption in healthcare. Successful program leaders routinely address misconceptions and tout the benefits of home dialysis inside and outside their dialysis facilities.</p> <p>Change Ideas</p> <ol style="list-style-type: none"> 1. Relay to ICHD staff that promoting home dialysis will not jeopardize their jobs. 2. Communicate that a higher-than-expected failure rate at a home program is a positive sign, as it cannot always be predicted who will be successful at home until it is tried; a high failure rate means “you are giving people a chance.” 3. Share anecdotes about less conventional patients being successful on home dialysis and what steps the team took to help them succeed. 4. Describe home modalities as a “bridge” to transplant. 5. Ask home patients to share their experiences on ICHD versus home modality, highlighting the improvement in quality of life or other experienced benefits. 6. Look for opportunities to be successful with each patient referred, e.g., “full assist” from family members. 7. Explain to ICHD staff the quantity and quality of education that patients get in training, specifically for HHD patients, to minimize the potential of sharing misinformation. 8. Have ICHD staff and patients watch a real-life video of someone performing home dialysis that provides an accurate portrayal of what it is like. 9. Develop and structure one centralized relationship between ICHD staff/patients and home programs, e.g., a modality educator, a home program representative, or access coordinator who takes accountability for repeat quality education and tracking progress. 10. Address ICHD staff misperceptions about home dialysis openly and educate on home frequently in meetings and one-on-one. Disseminate “Myth and Fact” sheets to address any confusion about home dialysis. 11. Tell others about the travel plans those on home modalities have been able to make because of their modality choice. 12. Being mindful of HIPAA, share basic stories with ICHD patients of patients who transferred from ICHD to home and are doing well.



Table 5. Consider All Patients, Widely Refer Patients, and Explore Options

PRIMARY DRIVER #2: ADOPT A MINDSET THAT HOME DIALYSIS IS POSSIBLE
Secondary Driver #2b: Consider all patients, widely refer patients, and explore options before declining patients for home modalities
<p>For home dialysis utilization to increase, more patients need to use it. Successful programs cast a wide net to receive referrals. They also challenge themselves to accept as many patients as possible.</p> <p>Change Ideas</p> <ol style="list-style-type: none">1. Schedule routine calls between ICHD facilities and home programs to share recorded ICHD patient interest, education, and progress toward home modalities.2. Research and share clinical solutions to overcome challenges (e.g., PD regimens, obesity, past abdominal surgeries).3. Allow the home team to make the final decision on suitability for home dialysis.4. See the potential PD patient where others may not see him or her.5. Create a facility-wide mindset that everyone is a candidate for home dialysis. This ensures that all in-center staff members can identify and recommend candidates for home dialysis.6. Do not ask, “Is this patient a peritoneal dialysis candidate?” Instead ask, “Why shouldn’t this patient be on peritoneal dialysis?”7. Understand that uremia may affect a patient’s ability to make decisions or absorb new information and be persistent and empathetic in educating.8. Accept that there will always be a percentage of people who will struggle with home dialysis. Work with these individuals on a case-by-case basis with a mindset toward maintaining them on a home modality.9. Ask open-ended questions about a patient’s life before dialysis and offer ways that a home modality could return them to a status more like that of before they were on dialysis.10. Discuss home dialysis options during early stages of chronic kidney disease (CKD). Coordinate CKD patient home program visits with the referring nephrology practice.11. Do not ask patients if they know about home modalities, instead ask, “Has anyone ever talked to you about all the different ways you can get dialysis?”12. Bring up the possibility of home dialysis at every assessment and plan-of-care meeting.13. Start an “Experience the Difference Program” in which a dialysis facility partners with a home program to offer a two-week in-center trial of a home dialysis machine and schedule coupled with intensive patient and family education about home modalities.14. “Have faith” in the home team if they want to give a patient an opportunity to be successful.15. Explore the possibility of “full assist” for patients; work with the family and support system.16. Show new in-center hemodialysis patients the “My Life, My Dialysis Choice” video, which depicts actual home hemodialysis and peritoneal dialysis patients. The video has an emphasis on African American and Hispanic patients who explain why they chose their modality.17. Share a vision for home suitability, e.g., “Anyone with a peritoneum and a home can do PD.”18. When an ICHD patient reports a significant life change, ask him or her follow-up questions and connect the patient to his or her nephrologist, educator, or home nurse; look for an “entry point” for a patient to consider a home modality.



PRIMARY DRIVER #2: ADOPT A MINDSET THAT HOME DIALYSIS IS POSSIBLE

Secondary Driver #2b: Consider all patients, widely refer patients, and explore options before declining patients for home modalities

19. Hire a modality educator who makes rounds at nephrology offices and among ICHD and home programs to foster discussion and disseminate education, such as flyers and factsheets.
20. Provide layers of education on home dialysis in different settings at numerous times with different healthcare team members.



Table 6. Promote a Culture of Teamwork and Build Strong Relationships

PRIMARY DRIVER #3: ELEVATE HOME PROGRAM COLLABORATION AND REFINE OPERATIONS
Secondary Driver #3a: Promote a culture of teamwork and build strong relationships
<p>Patient-centered home dialysis care requires a strong team dedicated to making this modality work for patients and their caregivers. Recognizing this need, successful facilities create a culture of learning and hire the right staff for home dialysis.</p> <p>Change Ideas</p> <ol style="list-style-type: none">1. Create opportunities for mentorship between nurses of the same modality, so they always have someone to call if they have questions.2. Use staff huddles to provide quick updates on home dialysis therapies and share successes.3. Hire home dialysis nurses with the right mentality for home, including flexibility, a passion for education, a warm and welcoming attitude, and high accountability.4. Hire nurses who speak the patient’s primary language.5. Bring a patient care technician into the home program to reinforce education, draw labs, and assist with scheduling.6. Make the medical director accessible to all facility staff, e.g., ensure all staff have the medical director’s cell phone number.7. Encourage the nephrologist to explain why clinical decisions are made to expand the team’s knowledge and to share the nephrologist’s vision.8. Provide facility staff with educational webinars that include continuing education credit. Introduce patients to other nurses in the program to provide support if their assigned nurse is not available.9. Respect the willingness of either the home team or the nephrologist to train a less conventional patient to be a successful home patient.10. Schedule so that new home nurses have the time to both absorb the clinical information and build their skills with confidence.11. Hire for personal attributes that contribute to a well-rounded team, while hiring consistently for empathy and positivity.12. Treat all patients with compassion to make them feel welcome.13. Respect that each member of the IDT is “one piece of the puzzle” and that all are needed to deliver excellent patient care.14. Schedule all disciplines to be in-person for the monthly clinic visit with the patient to quickly address any changes that may be needed, having the entire IDT in the same room as the patient at the same time, if space allows.15. Encourage a “family-like” atmosphere at the home program for staff and patients, where everyone feels valued with fun activities and a welcoming atmosphere.16. Manage home program staff, especially nurses, to minimize staff burnout by frequently assessing caseloads and the number of patients in training, allowing time for documentation, and being open to discussing professional or personal challenges.



Table 7. Measure, Monitor, and Assess Program Success

PRIMARY DRIVER #3: ELEVATE HOME PROGRAM COLLABORATION AND REFINE OPERATIONS
Secondary Driver #3b: Measure, monitor, and assess program success
<p>Home dialysis programs are complex and require continuous quality improvement to maintain success and growth. Effective teams identify, track, and share metrics at regularly scheduled meetings. They also create a safe environment, looking to improve rather than to blame.</p> <p>Change Ideas</p> <ol style="list-style-type: none">1. Ensure discussion of home dialysis has a permanent place on the ICHD QAPI agenda, in weekly staff meetings, and informal staff huddles.2. Implement the quality improvement process (plan-do-study-act) to address metrics not moving toward goals or trends moving in the wrong direction.3. Implement weekly patient care conference meetings, led by physicians, where the entire interdisciplinary team meets to discuss home dialysis care plans and monthly labs from the previous week.4. Track the turnover rate from home dialysis back to in-center dialysis. Frame this metric as a success even if the rate is high. It shows that people are being given a chance on home dialysis.5. Share real-time data related to physician home referral rates within a practice and across practices for benchmarking.6. Use the MATCH-D tool to help identify and assess patients for home dialysis candidacy and track related follow-up.7. Celebrate facility and patient successes such as graduation to home, length of time treating at home, and program growth.8. When possible, gather home programs together for consolidated QAPI meetings to be able to share best practices and learn from each other.9. Collect and track metrics for interest, education, referrals, nephrologist input, and home program visits for all ICHD patients. Share these metrics with the ICHD and home team.



Table 8. Individualize Patient and Caregiver Education

PRIMARY DRIVER #4: PROVIDE CONTINUOUS SUPPORT TO PATIENTS/CAREGIVERS
Secondary Driver #4a: Individualize patient and caregiver education
<p>The fear of the unknown is natural. Many patients and families contemplating home dialysis may have legitimate concerns about their ability to be successful. Effective home programs blend empathy and practical solutions to empower and educate patients to be successful at home.</p> <p>Change Ideas</p> <ol style="list-style-type: none">1. Assign a home patient to the same nurse for training to build a relationship and ensure continuity of training.2. Create, or use, a standardized home dialysis training manual for education. Make the education hands-on and create modules for open discussion, nurse demonstration of home dialysis, and patient practice under observation. Create a checklist for training to ensure patients understand all aspects of their education.3. When possible, have a home program nurse go to the hospital to meet with patients who “crash” into dialysis for 1:1 education.4. Modify the time needed for training to meet patient and caregiver needs and to accommodate the patient’s ability. Manage training schedules and patient assignments to be flexible for more time with a patient who needs it.5. Schedule the training on consecutive days, i.e., Monday through Friday, for four hours a day for an average of two weeks.6. Reach out to local chapters of professional organizations to offer or create educational sessions on home therapies (American Nephrology Nurses Association [ANNA], NANT, etc.).7. During initial home dialysis training or in the ICHD facility, observe patient and caregiver learning preferences. Use the preferences during ongoing support.8. Develop or offer creative solutions to overcome challenges for interested ICHD patients or those in home training, e.g., color-coding the settings on the dialysis machine for a patient with low literacy.9. Always communicate with patients that they will always have other treatment options if home dialysis does not work for them.10. Ensure all training, education, and patient interactions are upbeat and encouraging.11. Invite family and friends who have personal experience to talk one-on-one with patients interested in home dialysis.12. Create an educational toolkit with posters, pamphlets, and flyers to promote home therapies. Display them in ICHD units and distribute them to area physician offices.13. Have the physician play a central role in patient education, connecting the patient to others (nurse practitioner, dietitian, social worker), while owning the final referral to a home program.14. Meet with the patient in the hospital and in his or her home to provide information on home dialysis, including the benefits of peritoneal dialysis, e.g., improved quality of life, more freedom.15. Suggest patients who are pre-ESRD visit an ICHD unit prior to deciding on a modality.



Table 9. Identify and Address Barriers in the Home

PRIMARY DRIVER #4: PROVIDE CONTINUOUS SUPPORT TO PATIENTS/CAREGIVERS
Secondary Driver #4b: Identify and address barriers in the home
<p>Helping patients maintain success at home is an important outcome. To retain patients, successful programs develop strong patient relationships to continually educate patients and caregivers as well as identify and solve issues that could prevent patients from continuing home dialysis.</p> <p>Change Ideas</p> <ol style="list-style-type: none">1. Conduct a home visit with the home team to identify and proactively address potential issues regarding the home environment.2. Conduct a follow-up visit once a week for the first four weeks of starting home dialysis.3. Provide monthly education to caregivers and patients to sustain home dialysis. Create a curriculum with recommended topics for each month, with available materials in a variety of media, such as written, verbal, and video.4. Involve all members of the care team, including the patient, family, and caregivers, to develop solutions to potential barriers.5. Give the patient 24-hour-a-day/7-days-a-week access to an on-call nurse to respond to questions or concern and encourage them to call when needed.6. Be proactive in assessing possible barriers by observing a patient’s body language, tone of voice, if he or she is acting in a way different from his or her typical manner, and responses to non-clinical questions. Ask follow-up questions to investigate.7. Assess the patient for social and financial support, e.g., family commitment, transportation, and insurance coverage.8. Listen for when patients are asking for education and immediately provide it.9. Collaborate with the patient and family to resolve barriers to home dialysis or clinic visits.



Table 10. Recognize and Support Patient and Family Psychosocial Needs

PRIMARY DRIVER #4: PROVIDE CONTINUOUS SUPPORT TO PATIENTS/CAREGIVERS
Secondary Driver #4c: Recognize and support patient and family psychosocial needs
<p>Psychosocial issues are a significant barrier to home dialysis use. These may include fear, anxiety, financial burden, stress, and burnout. These matters affect patients and caregivers alike. Strong home programs recognize this and implement proactive person-centered strategies to support patients and caregivers.</p> <p>Change Ideas</p> <ol style="list-style-type: none"> 1. Schedule the social worker to maximize the opportunity to interact with patients, including extended time to provide one-on-one counseling and emotional support. 2. When included, provide as much support to the care partners as the patient. 3. See the social worker as a “treasure box” with tools that can help overcome any barrier. 4. For ICHD and training patients, instill hope that they can be successful on home dialysis and can lead their best life. 5. Schedule new patients to have additional time with the social worker to address emotional needs related to adjustment to dialysis. 6. Ask patients to picture what life could look like on a home modality, e.g., return to work and still earn disability, future transplant, and a life like they had before dialysis. 7. Address caregivers directly to thwart burnout as early as possible. This can be done through a monthly check-in with a social worker. A stress thermometer can be used to measure distress, health issues, financial issues, insurance questions, or transportation problems. 8. Document a basic genealogy tree or support network during the social worker assessment, so the staff knows the patient’s extended support system if the patient needs additional support. 9. If patients share personal details with the social worker or dietitian and not with the nurse or physician, provide those updates immediately to the nurse and physician verbally and document them in the clinical record, if appropriate. 10. When speaking with an ICHD patient who seems depressed or angry, bring up the possibilities and benefits of home dialysis.



V. Conclusion and Next Steps

Increasing the use of home dialysis is a national priority. Dialysis facilities play a central role in helping more patients with ESRD understand their options with a hope of a higher quality of life. A concerted effort is needed among all kidney care stakeholders to meet the bold goals set by the HHS Advancing American Kidney Health Initiative. The change ideas presented in this change package are being implemented in high-performing dialysis facilities across the United States. These ideas can be tailored and adapted to fit the needs of dialysis facilities and the patients with ESRD that they serve across the country.

As with any change, a best practice is to start small and build improvement toward systemic change. Facilities can start with one test of change and do it well. This will relieve the burden on staff and encourage buy-in when change begins. Measuring and monitoring performance improvement will ensure the facility stays on track with goals. Celebrating every success with staff, patients, families, and community partners at every change will be contagious. Above all, the best time to start performance improvement is now. With this change package in hand, program leaders, administrators, and staff should ask themselves, “What can I do by next Tuesday to get this started?”



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