

## Project Example: Increasing Home Dialysis Options in your Chronic Kidney Disease Patients

**First**, does your facility have a program that educates patients about home dialysis and the different modalities that are available? Do you have a home dialysis program or do you refer patients to an established home program? Do you wish to start a home dialysis program?

**Next**, decide who at your facility should be included in the team effort to promote dialyzing at home. CKD educators, PD nurses and biomed technicians medical directors, acute teams and CEOs can all add valuable input for increasing or starting home programs. Do you have a designated person at your facility that provides education about the different home modalities? Is your medical director and/or nephrologist supportive of home dialysis? Do you have a home program in place and wish to increase your patient population or do you wish to develop a home program?

**Now**, take a look at your clinic to see what may be keeping your home dialysis population from growing? Do you have an educational program in place that teaches patients and staff about the different home modalities and their many benefits? Does your medical director and/ or CEO support a home program? Is a referral process in place for those interested in exploring home dialysis? Do you have the staff, room and machinery to expand your existing home program?

Facilities that wish to add a home program; do you have a team of people committed to developing a home program? Has your team developed a checklist of things that need to be done in order to open a home dialysis unit? Has your team created a timeline to ensure that the program develops in an orderly fashion and that all requirements are completed? Does your facility have trained and adequate staffing to open a home program?

**To get started**, the following **barriers** may be hampering your efforts to increase home dialysis at your facility;

- Staff lack knowledge about the different home modalities
- Home dialysis program not offered at your facility and patients do not want to transfer to a different facility with different staff
- Staff may lack support from key personnel about starting a home dialysis program
- Facility lacks knowledge about the rules and requirements for opening a home dialysis unit
- Your facility lacks “qualified training staff” for home dialysis
- Your facility lacks money to expand home program (machinery, space and staffing)
- Patients not encouraged to dialyze at home
- Patients lack information about the different types of home modalities and their benefits
- Patient does not have a partner available for home Hemodialysis
- Patient lacks the room to store supplies for home dialysis.

**Root cause:** Your QI team should determine the root cause of patients not choosing home dialysis. Example: Facility does not have home program.

**Decide on an “AIM” Statement; what are you trying to accomplish?**

- Increase the number of patients dialyzing in your home program.
- Establish and follow a timeline, to develop and open a home program.

**Goals:**

- Increase the number of patients dialyzing in your home program, annually, by 10%
- Create a timeline and specific objectives aimed at opening a home program within the next 18 months.

**How will you measure improvement?**

Annual measurement for CQI meeting – for example, number of home dialysis patients in your home dialysis program at the end of 12 months

Timeline for opening a home program is reviewed on a monthly basis to ensure that objectives are completed and home program opens on time.

**Example of potential measurement (if above goal is used):**

*Numerator:* Total # of pts. trained and/or transferred to your home program during previous 12 months

*Denominator:* total # of patients using home therapies at end of 12 months  
or

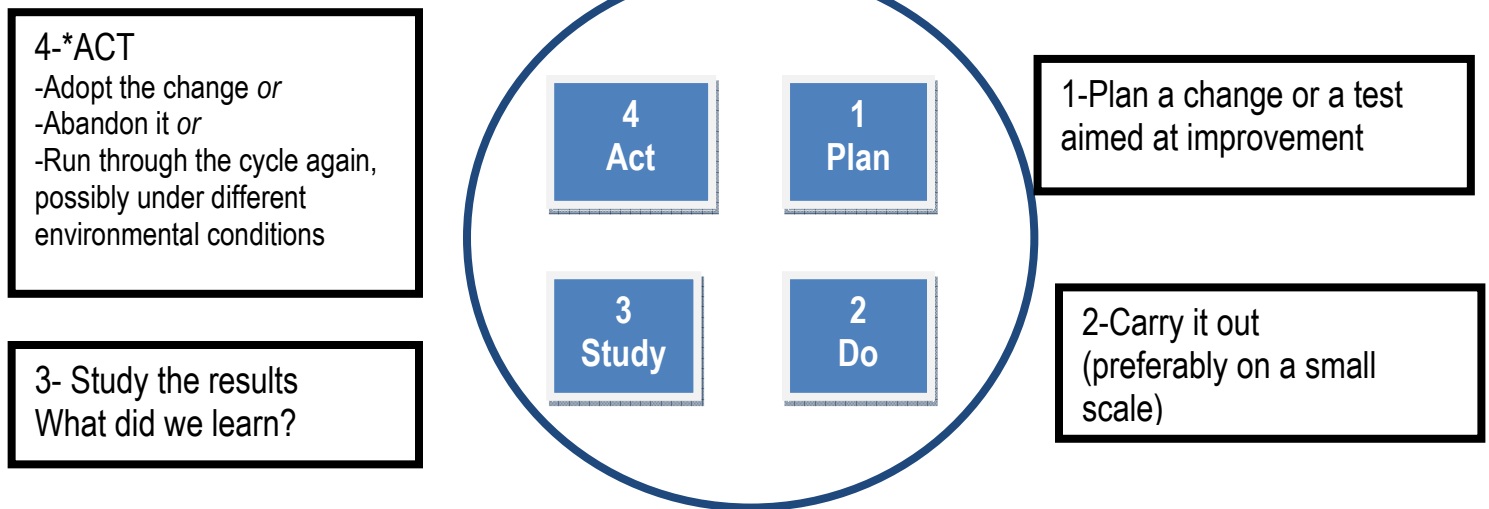
*Monthly meeting to monitor progress of timeline for opening a home dialysis program on time*

Additional MRB recommendations that might support your AIM statement:

- Nephrologist/nurses not comfortable with home therapies
- Patient and/or care giver lacks comfort (fear) in transitioning to home care
- Lack of respite care for partners of home dialysis patients

**Brainstorm potential solutions based on barriers/root cause prioritized by your QI team.**

**Begin PDSA cycles and document your improvement**



Begin a new PDSA Cycle!

Name of facility / Provider # \_\_\_\_\_

Facility Contact/Position \_\_\_\_\_

Root Cause Assessment  
Concerning Home Dialysis

Major Barriers that Effect Home Dialysis	Potential Root Cause Effecting Choice of Home Dialysis	Problem in facility?	Potential to change	
<b>Patient Factors</b>				
<b>Awareness/Knowledge</b>	• Lack of knowledge regarding the types of home dialysis	Y/N		
	• Lack of education regarding the benefit of home dialysis	Y/N		
	• Lack of awareness that home dialysis allows more freedom in dialysis schedule	Y/N		
	• Lack of awareness that diet restrictions may be reduced	Y/N		
	• Lack of knowledge concerning personal hygiene and hand washing	Y/N		
	• Physical disabilities (blindness or peripheral vascular disease)	Y/N		
	• Multiple abdominal surgeries (effect s choice of Peritoneal dialysis)	Y/N		
	• History of or active drug abuse	Y/N		
	• Medical instability	Y/N		
	<b>Physical factors that may effect patient's decision for home dialysis</b>	• Lacks physical strength and/or dexterity needed to handle Peritoneal dialysate bags or Hemodialysis equipment	Y/N	
• Lack of limbs		Y/N		
• Age		Y/N		
<b>Communication/ Education</b>		• Language barriers	Y/N	
		• Illiterate	Y/N	
	• Patient has learning disability	Y/N		
	• Mental Instability	Y/N		
<b>Social</b>	• Family member does not want to learn home dialysis and/ or be responsible for patient's dialysis needs	Y/N		
	• Patient does not have a partner for home hemodialysis	Y/N		
	• Patient needs social interaction of in-center hemodialysis	Y/N		
<b>Other</b>	• Home for patient is assisted living or nursing home	Y/N		
	• Patient and /or significant other does not want to bring dialysis home	Y/N		
	• Water supply inadequate for home hemodialysis	Y/N		
	• Lacks financial means for additional plumbing or wiring for home hemodialysis	Y/N		
	• Lacks storage for home dialysis supplies	Y/N		
<b>Nephrologist Factors</b>				
<b>General</b>	• Failure of nephrologists to educate patients regarding the different types of home modalities	Y/N		
	• Nephrologists unwilling to direct home dialysis programs	Y/N		

	<ul style="list-style-type: none"> <li>Nephrologist lacks training in home dialysis</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Unaware of the financial rewards of a home dialysis program</li> </ul>	Y/N	
<b>Facility Factors</b>			
<b>Awareness/Knowledge</b>	<ul style="list-style-type: none"> <li>Lacks knowledge about steps necessary to set up a home dialysis program (equipment, space, staff )</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Lacks knowledge concerning state licensing requirements</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Lacks awareness about payment plans associated with home dialysis and which is best for patients in your program (Method I or Method II)</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Lack of awareness/knowledge concerning water treatment and testing in the home dialysis setting</li> </ul>	Y/N	
<b>Communication/Education</b>	<ul style="list-style-type: none"> <li>Lacks a home dialysis education program to train staff and patients</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Facility lacks training manual for home dialysis</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Lacks policies and procedures for home dialysis</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Lack of knowledge about promoting home program</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Need plan for providing back-up treatments to home patients</li> </ul>	Y/N	
<b>Training/Experience</b>	<ul style="list-style-type: none"> <li>Lacks a trained and dedicated home dialysis staff</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Lacks plan for maintenance of home dialysis equipment</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Lacks plan for handling labs, cultures and water treatment issues in the home setting</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Lacks plan for providing back-up treatments to home patients due to emergencies or illness of patient or partner</li> </ul>	Y/N	
<b>Administrative</b>	<ul style="list-style-type: none"> <li>Administration not committed to home dialysis</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Lacks finances needed for developing a home dialysis program</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Lacks space necessary for a separate home dialysis unit</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Lacks equipment necessary for home dialysis program</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Facility lacks certification for home dialysis</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Inability to hire enough qualified staff members</li> </ul>	Y/N	
	<ul style="list-style-type: none"> <li>Administration unaware of benefits home dialysis has for patients , clinics and nephrologists</li> </ul>	Y/N	

\* This list does not include every root cause affecting home dialysis

# Increasing Home Dialysis Resources

Please contact us if you would like additional help developing a QI project that increases home dialysis

Phone: 303-831-8818

E-mail: [info@nw15.esrd.net](mailto:info@nw15.esrd.net)

## Web-site Links:

- Checklist for starting home dialysis program  
[www.esrdnet15.org](http://www.esrdnet15.org)
- Up-to-date Information about home dialysis  
[homedialysis.org](http://www.homedialysis.org)  
<http://www.lifeoptions.org>  
[www.kidneyschool.org](http://www.kidneyschool.org)  
[NxStage:: Home Hemodialysis :: Overview](#)
- Video: Home Dialysis: Your life, Your choice  
[Order video by clicking here](#)
- Learn about the benefits of home dialysis  
[www.rightHealth.com/nephrology](http://www.rightHealth.com/nephrology)
- Educational information about home dialysis and what patients think and feel about dialysis  
<http://www.davita.com/home>
- Information about daily home Hemodialysis  
<http://www.homedialysis.org>

## Is it Time for Your Unit to offer the Option of Home-Hemodialysis?

A form of self-dialysis, home-hemodialysis has experienced resurgence in popularity the past several years as more and more patients experience the benefits of frequent hemodialysis. **Benefits for patients** include: enhanced quality of life, more control over treatment, more convenient, more flexibility in treatment schedule, less travel time to the dialysis unit, decreased risk of infection, fewer access problems, and Medicare coverage without delay. **Benefits for clinics** include: Medicare coverage that starts the first month that dialysis starts, less staff are needed to manage home-hemodialysis patients once training is complete, more patients can continue to work, and there may be less need to build new units to accommodate increased numbers of patients. **Benefits for nephrologists** include better patient outcomes, more thorough follow-up because most patients are seen monthly or quarterly in an office-visit setting, and a training fee from Medicare after patient completes home training.

The list below is provided as a guide for you to use as you consider offering this important modality to your patients. This list is not intended to be an inclusive checklist should you decide to go forward with a home-hemodialysis program

### CONSIDER THESE ITEMS AS YOU START YOUR PROGRAM

<p>Which type of self-care hemodialysis will you offer?</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Standard home-hemodialysis is done 3 days/week for 3-6 hours (plus 30-45 min. to set machine up prior to treatment and cleaning after).</li> <li><input type="checkbox"/> Short daily hemodialysis is done 5-6 days/week for 2<sup>1/2</sup>-3 hours (plus 30-45 min. to set machine up prior to treatment and cleaning after).</li> <li><input type="checkbox"/> Nocturnal home-hemodialysis is done 4-6 nights/week for 6-8 hours (plus 30-45 min. to set machine up prior to treatment and cleaning after).</li> <li><input type="checkbox"/> In-center self-care hemodialysis, patients care for their own dialysis in a professionally supervised dialysis unit. Can allow for self-care when patients don't have a partner to assist them at home.</li> </ul>
<p>Do you have buy-in from the key partners in your organization?</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Nephrologist willing to direct the program?</li> <li><input type="checkbox"/> Commitment from CEO/COO to provide fiscal resources required to begin program?</li> <li><input type="checkbox"/> A supportive Facility Manager?</li> <li><input type="checkbox"/> A way to promote the program to your patients?</li> </ul>

<p>Have you done a business plan/cost analysis? Consider these points in your proposal</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Labor cost-</i> Will you have dedicated training staff or will they be required to assist with other patient obligations during training time? More focused staff time is required at the beginning of training when patients and partners are learning new techniques. Training on conventional machines may take from 4-6 weeks; it may take less time to train patients to use some of the newer machines. It is useful to provide portions of the training during a time when the patient is not dialyzing. Who will provide 24-hour on-call for emergencies, will it be done by unit staff or training staff?</li> <li><input type="checkbox"/> <i>Buy or lease equipment?</i> Which machine will you use? Who will do the machine maintenance? Do you have existing certified staff that can fix machine problems or will you sub-contract and have someone do this for you? What maintenance are your patients able to do themselves? Remember you will have a dialysis machine and potentially a water treatment system that will need to be maintained.</li> <li><input type="checkbox"/> <i>What is your patient/ payer mix?</i> Do you have more Medicare patients or Private Insurance/HMO?</li> <li><input type="checkbox"/> <i>What will the cost of your utilities be?</i> Do you have room for patient training? Supplies? Staff office space?</li> </ul>
<p>Decide on staffing requirements.</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Do you have "qualified training staff," a requirement in the Medicare Conditions of Participation-Sub-part U?</li> <li><input type="checkbox"/> Investigate your state licensing requirements, does a home-hemodialysis program require any additional licensing or is your facility already licensed to provide training? Contact the Department of Health for your state, and ask to speak to the Department of Survey and Certification. They can tell you the critical elements that you will need to have in your program before you can be licensed, e.g., policy and procedures (staff and patient), medical records, care plans, staffing ratios/requirements (if any) etc. They will also tell you which forms you will be required to submit.</li> <li><input type="checkbox"/> To apply for certification (if you are not already part of an existing provider) you can print the enrollment application directly from: <a href="http://www.cms.hhs.gov/cmsforms/downloads/cms855a.pdf">http://www.cms.hhs.gov/cmsforms/downloads/cms855a.pdf</a></li> <li><input type="checkbox"/> Develop job descriptions for training personnel if you do not already have them.</li> <li><input type="checkbox"/> Arrange for back-up staff to be available during training if you have other patient care responsibilities.</li> <li><input type="checkbox"/> Plan your training schedules and clinic visits.</li> </ul>

	<ul style="list-style-type: none"> <li><input type="checkbox"/> Develop a policy and procedure manual and a patient training manual. Some facilities have used the same manual for training patients that they use for training staff members (with some minor modifications). If you're starting from scratch visit an existing training center or schedule a call with them. Many units are willing to share their manuals. If a local unit is not willing to share, try an out-of-state facility!</li> </ul>
<p>Is Method I or Method II the best choice for your patients?</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Method I or Method II?</i>  *Method I payment is made to the ESRD facility by the Fiscal Intermediary (FI), the dialysis facility supplies all equipment, supplies, labs and follow-up.  *Method II payment is made to the facility for support services by the FI, but the Durable Medical Equipment Regional Carrier (DMERC) makes payment for home dialysis equipment and supplies <i>to the supplier</i>.</li> <li><input type="checkbox"/> Patients must sign an ESRD Method Selection form during training (Form CMS-382). Once completed this form goes to the FI and is in effect until patient stops home dialysis or opts for a different method. If patient opts for a different Method a new form must be submitted and it doesn't go into effect until Jan 1<sup>st</sup> of the year following the year the patient signs the new form. There are a few exceptions to this rule that are detailed in the Medicare Claims Processing Manual available at the web-address below.</li> <li><input type="checkbox"/> Form can be obtained from this web site:  <a href="http://www.cms.hhs.gov/cmsforms/downloads/CMS382.pdf">http://www.cms.hhs.gov/cmsforms/downloads/CMS382.pdf</a></li> <li><input type="checkbox"/> For details on coverage refer to the Medicare Claims Processing Manual available on-line as a link at the Home Dialysis Central web site.  <a href="http://www.cms.hhs.gov/manuals/downloads/clm104c08.pdf">http://www.cms.hhs.gov/manuals/downloads/clm104c08.pdf</a></li> <li><input type="checkbox"/> To download a copy of the Medicare Benefit Policy Manual-Chapter 11, ESRD (pertains to coverage for ESRD patients)  <a href="http://www.cms.hhs.gov/manuals/Downloads/bp102c11.pdf">http://www.cms.hhs.gov/manuals/Downloads/bp102c11.pdf</a></li> </ul>
<p>Decide on the Equipment you will provide to your home patients</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> How easy will it be for patients to use the equipment?</li> <li><input type="checkbox"/> Is your staff familiar with the machine? If not they'll need training too!</li> <li><input type="checkbox"/> How much space will be required for equipment at the patient's home? For in-center equipment? Will you provide 1 month of supplies or deliver every 3 months? Consider enough space for dialysis machine, water equipment, dialyzers, tubing, dialysate, ancillary supplies and a dialysis</li> </ul>

	<p>chair! Emergency equipment and phone numbers should also be kept close at hand.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Who will maintain the machines? Your own Biomedical personnel or a contractor? Will the patients do any of the maintenance themselves? It is extremely important that trained personnel do any machine calibrations!</li> </ul>
Plumbing and Electrical Requirements	<ul style="list-style-type: none"> <li><input type="checkbox"/> Each machine will have specific electrical and water flow/ water pressure requirements to support operation of the machine. These specifications should be shared with the patient so that they can make the required changes to their home environment. Typically no electrical changes need to be made if you have a grounded outlet, however some plumbing modifications might need to be made and they can be quite pricey.</li> <li><input type="checkbox"/> Possible increase in water and electrical bills depending on the machine type.</li> <li><input type="checkbox"/> Consider where the drainage from the machine will go.</li> <li><input type="checkbox"/> There should be hand-washing facilities close by.</li> <li><input type="checkbox"/> A telephone should be readily available in case problems are encountered during dialysis treatment.</li> </ul>
A word about water	<ul style="list-style-type: none"> <li><input type="checkbox"/> The patient's water should be analyzed prior to deciding on the appropriate equipment that will be required for them to use at home.</li> <li><input type="checkbox"/> Water quality for home hemodialysis should meet the standards published by the Association for the Advancement of Medical Instrumentation (AAMI) for chemicals and bacteriological contamination. Contact the AAMI website @ <a href="http://www.aami.org">www.aami.org</a></li> <li><input type="checkbox"/> Be sure to order water-testing equipment for your patient to use at home. When you're training them to check pH/hardness/chloramines instruct them to also check the expiration dates of the testing equipment. Readings might not be accurate if the materials used for testing are expired. *Note: Test materials expire quickly and are sometimes costly.</li> </ul>
How will you handle lab draws?	<ul style="list-style-type: none"> <li><input type="checkbox"/> Will you teach your patient to draw their labs themselves? Do you have written instructions for them to follow? Adequacy studies may be more difficult for them to draw.</li> <li><input type="checkbox"/> How will you handle obtaining water cultures?</li> <li><input type="checkbox"/> Will the cultures require any special handling (refrigeration)?</li> <li><input type="checkbox"/> Who will send the patient supplies for monthly labs? Will they get them directly from the laboratory they will be</li> </ul>

	<p>using or will the unit give them supplies? Will patients need to have labs drawn at a local lab? Make arrangements for this through the local physician. Depending on the Method selection, most monthly labs are part of the composite rate.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> How will patients send labs to the laboratory? Will they need to send them by an overnight mail carrier? Will they need a centrifuge? Some labs will provide a centrifuge to patients to use at home, patients might need to have a helper take the tubes over to a local lab for spinning.</li> </ul>
<p><b>Other Considerations as you Begin your Program</b></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Will your program allow patients with central venous catheters to do home hemodialysis?</li> <li><input type="checkbox"/> Will you require a partner be present for home-hemodialysis patients?</li> <li><input type="checkbox"/> How will you handle back-up treatments? If you are part of an existing provider Medicare requires that you provide back-up service to your patients.</li> <li><input type="checkbox"/> What is your expectation for timeliness of machine repair? If patients require back-up treatments how will these be obtained?</li> <li><input type="checkbox"/> If you are a fee-standing clinic, will you provide emergency back-up treatments at your facility? If yes, you will need to make sure your staffing can accommodate this. If no, do you have an agreement with another unit to provide this service?</li> <li><input type="checkbox"/> If your patient lives out of town, it's important for them to have a local physician that is familiar with their care. In case of emergency, or if they need routine care who will they go to? The nephrologist caring for the patient should communicate with the local physician regarding medical requirements for patients. Do out-of-town patients live close to a hospital that provides acute dialysis? If not, provisions may need to be made for transfer to another hospital.</li> <li><input type="checkbox"/> How will home-hemo impact the patient's quality of life and relationship with the hemodialysis partner (if family member)?</li> </ul>

The above checklist looks pretty daunting! Remember, once you have gone through setting up the program it won't need to be done again! Take things one-step at a time, and before long you will have everything in place to provide this important option to your patients.

An absolutely great resource for helping you start any type of home dialysis program including peritoneal dialysis (and one that was used as a resource for this article) can be found at Home Dialysis Central <http://www.homedialysis.org/> **Happy training!**