

Home Hemodialysis – Overview Fact Sheet

Home hemodialysis is a renal replacement modality that allows patients to perform treatments in their own environment. Dialyzing in the home environment allows patients to choose more frequent therapy to improve their overall health status and quality of life. Patients and their partners are taught by the Home Training staff how to perform and manage their entire treatment and make appropriate changes to therapy when indicated. The Home Training team monitors patient care through regular phone contact for support and monthly clinic visits.

Types of Home/Daily Hemodialysis

Home hemodialysis can be performed in a variety of frequencies and lengths of treatments (see Table 1).

Benefits of Home/Daily Hemodialysis

Frequent and longer therapies closely mimic the natural kidney function; therefore, the patient generally experiences the highest degree of benefits. Some of the major benefits are:

- Improved quality of life: Gaining control over one's disease, as well as reports of increased energy and libido. Patients have reported reduced recovery times between treatments and studies concluded a reduction in hospitalizations.
- Reduction of left ventricular hypertrophy/hypertension: With increasing frequency, fluid balance is maintained closer to normal function, resulting in less cardiac stress and hypertension. Patients utilizing more frequent therapy may be able to eliminate or reduce their medications, particularly antihypertensives.
- Flexibility: Time of day, length, frequency of treatment, and location of treatment. Patients can adjust therapy to their life as opposed to adjusting their life to therapy and they are able to travel more.

- Fewer transportation issues: Many times, transportation to and from facilities can be time consuming, expensive, or difficult due to weather conditions.
- Liberal diets: Patients may have fewer limitations on fluid and diet.
- Nocturnal/extended treatments: Allow for greater fluid removal and can assist with electrolyte control.

Challenges of Home/Daily Hemodialysis

Despite all the advantages of home/daily hemodialysis, there are some challenges that should be considered.

- Patient/partner burn-out: Some patients or partners may not be able to easily integrate therapy into their lifestyle, which may cause stress on the relationship and overall fatigue from the increased workload. When the patient can perform most or all the treatment, it tends to lessen the amount of partner burn-out. Respite care arranged by the Home Training Center should strongly be considered to provide support or care during a patient's/partner's illness, unstable vascular access, or vacation.
- Unstable vascular access: Learning to cope with a problematic vascular access can be very challenging and frustrating. More frequent therapy may lead to vascular access complications as well.
- To reduce frustration and increase patient comfort, the vascular access should be a significant focus during training. Learning how to cannulate before home training is initiated may decrease time of training.
- Limits of home environment: Cleanliness and space for equipment and supply storage should be considered. Some patients benefit from provider support and assistance in unloading the home therapy supplies.

Table 1.
Types of Home/Daily Hemodialysis

Type	Frequency	Length of Time
Intermittent	3-4 tx/wk	3-4 hr/day
Short daily	> 3 tx/wk	2-4 hr/day
Nocturnal/extended	Any combination	> 6 hr/day

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- Physician support: Lack of nephrologist support with referral of suitable patients. Limited comfort and knowledge of prescription options for therapy.

Patient/Partner Selection Considerations

- Education:
 - Patients and partners may be educated for treatment modalities through an options educator, nursing staff, or education programs.
 - Many facilities offer a transitional care program, allowing patients to dialyze more frequently for their first month on therapy while learning about treatment options. Patients may also do a two-week trial of more frequent therapy to experience the difference.
- Partner: Most Home Training centers require that patients have a partner available during treatment in case of emergency. In some cases, this is difficult to manage due to the challenges of partner burn-out. Suitable partners may include:
 - Spouse.
 - Family member.
 - Friend.
 - Staff assisted: Some facilities provide staff to perform treatments in patient homes.

Possibility of back up care partners and utilization of respite care with training as allowed by patient and unit schedule.

Patients may be considered for independent or solo home hemodialysis if the patient desires and the interdisciplinary team agrees. Additional safety measures are required. Patients must remain awake during treatment - solo nocturnal dialysis is not an option.

- Patient: The traditional 'non-compliant' may be a model home patient and should not be immediately excluded from selection.
 - Stable vascular access: Any vascular access may be used. The buttonhole technique for AV fistulas is increasing in popularity.
 - Medically stable: Medically stable patients are the best candidates. However, some families may elect to manage the care of a less-stable patient at home to provide more comfort.
- Patient/partner team: It is ideal when both the patient and partner have optimal vision, hearing acuity, strength, and energy to safely perform the treatments. However, patient/partner teams can be successful if they are able to meet the requirements between the two.

- Home/treatment environment: Structurally sound, stable electric, potable water with adequate pressure, suitable plumbing, adequate room for supply storage, clean location free of pests and outside contaminants.

Training Program Considerations

The single most important consideration is the home training team, and particularly a supportive physician and enthusiastic training nurse and accessible interdisciplinary team. The training program should include:

- Assessment of the patient/partner learning styles: Prior to training, the patient/partner team should be evaluated for learning styles. This allows the training team to implement an efficient and effective training program.
- Training tools: A training program with supportive tools is key to successful training. These tools should be adaptable based on the patient/partner team's specific needs, such as reading level, visual acuity, strength, and dexterity.
- Flexible training schedule: The training team should allow for flexibility in the training schedule to adjust to the training workload, work, and transportation schedules, as well as unexpected needs of the training staff.
- Clear expectations for patient/partner team: An agreement that clearly delineates roles and responsibilities for the patient/partner and Home Training Center.
- Treatment/training documentation: Required to demonstrate that the patient/partner team achieved competency. Treatment flowsheets are also required to document that treatments have been performed, either written, or entered electronically.

Patient/Self-Care Management

On-going patient management is based primarily on patient need. Typical oversight of self-care management includes:

- Home visits:
 - Initial visit prior to training to validate that the home/treatment environment is suitable.
 - Support at the first home treatment or treatments to confirm patient/partner effectiveness in their home.
 - Annual visits to review the environment and patient compliance and additional visits as needed.
- Monitoring: Treatment data may be monitored through computerized portals; alerts may be generated for nursing.
- On call: A nurse must be available 24/7 for patient needs.

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- Clinic visits:
 - Monthly visits to review the patient’s vital signs and dry weight, access, laboratory review, treatment complications, training needs, current medication, dietary compliance, and social service needs.
 - These may also be conducted via Telehealth, which may give more insight into the patient’s environment.
- Phone or Telehealth visits:
 - Should occur with regularity once patient is transitioned home
 - Support can be provided during routine and emergent calls or messaging to and from the patient.
 - Technical support is available from the manufacturer.
- Supply delivery:
 - Routine supplies are delivered to the patient’s home.
- Medications:
 - Dialysis related prescription medications must be filled by a pharmacist or contracted medication vendor. Medications may be delivered to the patient’s home or may be provided to the patient during a visit (subject to state regulations).
 - Dosing and adjustments are maintained by a designated staff nurse based upon labs and concurrent conditions (i.e., antibiotic therapy due to active infections).
- Emergency preparedness:
 - Patients may be encouraged to contact their local power, water, and emergency personnel to alert them of home dialysis services.
 - Review and update of emergency preparedness plan on a quarterly basis.
 - Emergency kits with instructions and dietary guidelines should be kept in an easily accessible location.

Additional Resources:

Carver, M. and Ball, S. (2022). Home hemodialysis. In S.M. Bodin (Ed.). *Contemporary Nephrology Nursing* (4th ed, pp. 333-358). American Nephrology Nurses Association.

Rydell, H., Ivarsson, K., Almquist, M., Segelmark, M., & Clyne, N. (2019). Improved long-term survival with home hemodialysis compared with institutional hemodialysis and peritoneal dialysis: A matched cohort study. *BMC nephrology*, 20(1), 1-9. <https://doi.org/10.1186/s12882-019-1245-x>

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ANNA Mission Statement

ANNA improves members’ lives through education, advocacy, networking, and science.

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