

Fresenius Medical Care

# Packing the NxStage® System One™ Home Hemodialysis Equipment for Travel



Jean Murray  
11-29-2025

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## Warnings and Hazards

### Warnings:



- Read and understand all instructions and warnings in the NxStage® System One™ User Guide.



- Do **not** throw out equipment with regular trash. Regulated waste has strict protocols, so contact the kidney center for instructions.

### Cautions:



- Follow voltage requirements labeled on the equipment
- Ensure that premixed dialysate is at room temperature before using

- Allow the cyclor to adjust to room temperature between 59 degrees and 99 degrees F (15 degrees and 37 degrees C) for at least one hour before use<sup>2</sup>

## Introduction to Traveling While on Home Hemodialysis

The purpose of this manual is to provide a step-by-step guide for dialysis patients, their caregivers, and their families for packing the equipment and supplies needed to continue their dialysis treatments when traveling away from home.

The NxStage® System One home hemodialysis equipment is used for conducting critical dialysis treatments without a nurse or medical technician. Many patients prefer the convenience of dialysis treatments in a personal and familiar environment rather than going to a dialysis clinic several times a week.

While traveling, patients can schedule time at a clinic at their destination, but it can be difficult to find a clinic nearby or to get scheduled for times that fit with planned activities.

Once patients and their caregivers are comfortable with the standard home hemodialysis process, the changes to performing the treatment while traveling can be less daunting. Some patients travel frequently, while others may not travel often, if at all. No matter how often one travels, the steps for packing equipment are the same.

The steps outlined in this manual are for disassembling and packing the equipment and supplies required for travel with the hemodialysis equipment **ONLY**. Patients should follow their nephrologist's specific instructions and recommendations for traveling while on hemodialysis.

## Key Terms and Definitions

Patients should be well-trained and practiced before attempting to travel with the dialysis equipment. If not, patients should work closely with doctors and clinic staff to receive the required training.

- **Cyclor:** The equipment that controls the flow of the blood and dialysate through the dialyzer
- **Dialyzer:** The filter used to clean the blood
- **Dialysate:** A special fluid that passes through the dialyzer, available by prescription only
- **Fluid warmer:** Warming plate for premixed dialysate bag
- **Hemodialysis:** A renal replacement therapy

## Technical Description

The NxStage System One home hemodialysis machine weighs 70-75 lbs (32-35 kg), depending on the model. With the carrier, this can increase the weight by 10-25 lbs (4.5-11.3 kg), depending on whether using the hard-sided carrying case (Fig. 1) or the soft-sided roller carrier (Fig. 2).



*Figure 1, Hard-sided carrying case*



*Figure 2, Soft-sided roller carrier*

The hemodialysis machine is 15 inches wide x 15 inches long x 18 inches high (38.1 cm x 38.1 cm x 45.72 cm). Including the case, the dimensions to plan for when traveling are 18 inches wide x 18 inches long x 22 inches high (45.72 cm x 45.72 cm x 55.88 cm). The cases include padding to help prevent damage to the equipment, but care is still needed when

transporting the machine. The hard-sided carrying case has handles on two sides. The soft-sided roller carrier has two wheels and a telescoping pull handle.

When traveling within the United States, a standard 120-volt outlet is needed. **NOTE:** When traveling outside the United States, consult the user manual before using any power converter or plug adapter with the NxStage System One equipment.

Be sure to contact the airline in advance when flying is part of the travel plans. Airlines are required to accept the equipment under the [Air Carrier Access Act](#), but may require that the case be stored in the baggage area due to its size and weight.

Traveling with hemodialysis equipment and supplies is possible, but it takes planning. This manual provides guidance to help make traveling with hemodialysis equipment and supplies less stressful.

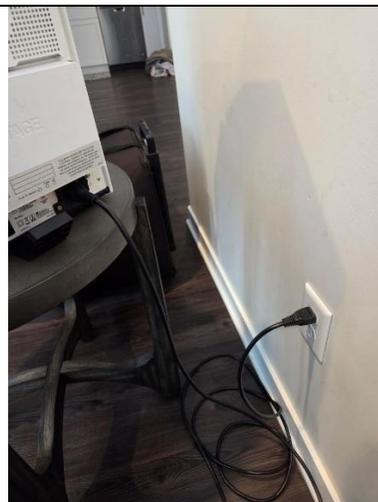
## Packing for a Trip

The following steps include packing the basic equipment used for home hemodialysis. All patients planning a trip should consult with their physician and clinic staff before dismantling and packing the equipment. When ready to pack, gather the following items:

- Cyclor travel case
- Flathead screwdriver
- Cyclor with all attachments – NOTE: Only the cyclor fits into the travel cases. Pack the other parts in another travel case.

## Disassembly

1. Ensure the cyclor is OFF. Unplug the cyclor from the wall outlet. (*Figure 3*)



*Figure 3, Three-pronged power plug in a standard wall outlet*

2. Unplug the power cord from the cyclor.  
(Figure 4)



Figure 4, Power cord connection to cyclor

3. Unplug the fluid warmer from the cyclor.  
(Figure 5)



Figure 5, Fluid warmer connection

4. Lift the warmer off the top of the cyclor and set aside. (Figure 6)



Figure 6, Fluid warmer on top of cyclor

5. Remove the Wi-Fi connection from the cyclor. (Figure 7)



Figure 7, Wi-Fi connector to cyclor

6. Using a flathead screwdriver, remove the saline hanger. (Figure 8)



Figure 8, Saline hanger connected to the handle

7. Using a flathead screwdriver, remove the dialyzer holder. (Figure 9)



Figure 9, Dialyzer holder connected to the handle

8. Remove the IV pole from the back of the cyclor by loosening the two screws holding the brace in place. *(Figure 10)*



*Figure 10, IV holder connection to cyclor*

9. Use the built-in handles to lift the cyclor *(Figure 11)*  
CAUTION: If the cyclor is too heavy for one person, use two people to lift it.



*Figure 11, Cyclor with handles lifted*

10. Carefully place the cyclor into the travel case of your choice. *(Figure 12, showing the soft-sided case option)*



*Figure 12, Cyclor inserted into the soft-sided carrying case*

## Supplies

Traveling will also require bringing additional supplies to complete the dialysis treatments. The clinic staff can assist with ordering some supplies. Figure 13 shows a sample of some supplies that may be needed.

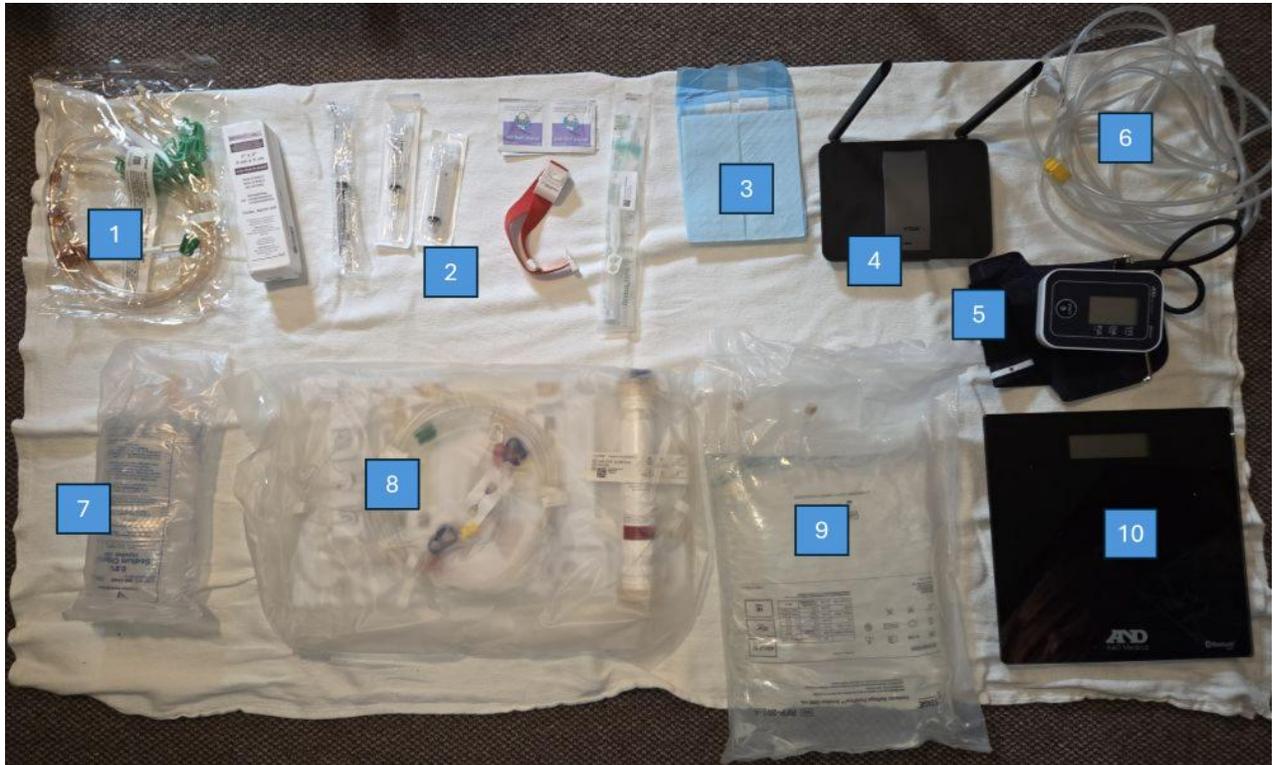


Figure 13, Sample list of additional supplies

1. Fluid lines connecting the dialysate bags to the cartridge
2. Medical supplies, e.g., gauze pads, syringes, alcohol pads, tourniquet, and canulation needles (additional supplies not pictured may be needed, such as thermometer, tape, lidocaine, heparin, etc.)
3. Protective pads
4. Wi-Fi router
5. Blood pressure cuff
6. Drain line
7. Saline
8. Cartridge
9. Dialysate bag
10. Scale

## Troubleshooting Guide

Review the User Guide for a full list of possible alarms and troubleshooting. For the purposes of this manual, please note the following specific alarm types as defined in the User Guide:<sup>3</sup>

Power failure	Red Alarm 41 Yellow Caution 40 Indicates a loss of power to the machine and whether the treatment may be started again.
Power loss	Within five seconds of power loss, the machine sounds an alarm tone and the control panel goes blank.
Temperature	Red alarm 50 Yellow caution 51, 52, 53, 54 <ul style="list-style-type: none"><li>• The dialysate temperature has reached its alarm point.</li><li>• Status of the cool-down or warm-up process.</li><li>• Monitoring status for low temperature.</li></ul>

## References

1. Warning label images from Freepik Company, <https://www.freepik.com/free-photos-vectors/warning-label>
2. NxStage® System One™ User Guide, Software Versions 4.5 through 4.15, page 3-11
3. NxStage® System One™ User Guide, Software Versions 4.5 through 4.15, pages 5-22 and 5-23