ASPR TRACIE Technical Assistance

Response Date: 19 December 2017; updated 4 September 2024
Type of TA Request: Complex

Request:

The requestor asked for checklists or community needs assessments that address the needs of dialysis patients following a disaster.

Response:

This request was originally submitted in 2017, and since then, the ASPR TRACIE Team has developed several Topic Collections that would be beneficial; namely the Dialysis Centers Topic Collection. Other important Topic Collections to review include Healthcare Facility Evacuation/Sheltering, Populations with Access and Functional Needs, and Utility Failures.

In 2017, we reached out to an ASPR TRACIE Subject Matter Expert (SME) who provided dialysis considerations and data specific to the U.S. Virgin Islands. Although the data from the SME is now outdated, it is preserved in this document for historical purposes.

Dialysis Considerations from a Large Dialysis Organization for Re-Populating the U.S. Virgin Islands

NOTE: The following information was provided by a SME in response to a specific request for information on restoring dialysis care to the U.S. Virgin Islands and to discuss the whole community needs of dialysis patients upon returning to the islands.

The SME stated: "We always find that patients want to return to their homes as soon as possible after a disaster. But until certain repairs are made, and the community infrastructure is repaired it may not be safe for them to return."

Requirements/Assessment of Patient Home Situation

Assuming that shelter is not to be set up then the patient home needs to be habitable and they need to stay free of infection.

1. Is the home habitable? Is damage to the home substantial?
2. Can the home be secured and locked?
3. Does the home have air conditioning?
4. Does the home have reliable hot water for personal hygiene and hand hygiene?
5. Can the patient maintain a clean environment in the home?
6. Is there any evidence of mold in the home?
7. Is local water being tested to ensure it is potable?
8. Is there reliable electricity? (Note that we should not move people back who will have to rely on personal generators.)

9. Can transportation reliably reach the patient three times a week and transport them to the dialysis clinic?
10. Will the patient have access to 911 services?
11. Will the patient have access to hospital services for emergency care?
12. Will the patient have access on the island to access emergency de-clotting?

Temporary Dialysis Location U.S. Virgin Islands

The following outlines an initial list of space and utility requirements to operate a temporary dialysis unit. Additional provisions may be needed depending on the needs of the patients, staff, and the structure selected to house the unit.

Station Count Needs Based on Anticipated Patient Census:

Assumptions: Operational 6 days per week. Three shifts per day.

Two Unit Configuration
80 patients on St. Thomas would require a 14 station unit.
67 patients on St. Croix would require a 12 station unit.

Single Units
147 Patients would require a 24 station unit.
Note: Changes in station count can be adjusted for the number of shifts per day. Increasing the number of shifts could decrease the number of stations provided there is sufficient time in the operational day.

The following outlines the basic needs of a temporary dialysis unit:

- Entrance and Waiting Area – Sufficient space for seating to accommodate patients as they arrive for dialysis. A small area should also be provided for wheelchair storage.
- Dialysis Unit Area
    - If using dialysis chairs – 80 sq ft.
    - If using beds or stretcher – 100 sq ft.
    - Clean medication preparation area to allow the drawing up of medication and preparing supplies
    - One “clean” hand washing sink for every 6 to 10 stations
    - One “dirty” sink for every 12 stations
    - Dirty utility/laboratory prep area – An area should be provided that is considered to be “dirty” and allow for the preparation of laboratory specimens including counter space for centrifuge(s).
    - Space provided for medication refrigerator
    - Space for laboratory refrigerator
- Bathrooms
    - Minimum of one patient bathroom (sink and toilet) per 12 stations
    - Minimum of one staff bathroom (sink and toilet) per 12 stations
- Clean Utility/Storage
    - This area would need to be of sufficient size to allow for the storage of dialysis supplies and medications used throughout the day. This area can be located in the

dialysis unit section noted previously. Note: Additional bulk palletized supplies could be stored in a separate structure adjacent to the dialysis unit to facilitate resupply throughout the day.

- Biohazardous Waste – An area of the structure should be made available for the temporary storage of biohazardous waste boxes and sharps containers.
- Dirty Utility/Janitorial Area for cleaning supplies and equipment.
- Electrical Power
  - One dedicated 20 amp duplex. This duplex should be color coded or labeled.
  - Two duplex outlets (four plugs) set aside for portable RO machines and other ancillary devices (e.g., IV pumps, oxygen concentrators).
- Water Supply
  - Potable water supply to sinks and toilets of sufficient pressure and flow to allow use. For every **two** stations, 2.2 gpm of potable water at 10 PSI and tempered Range 50-85º F will be needed.

Note: Each portable reverse osmosis machine can provide purified water to two dialysis machines.

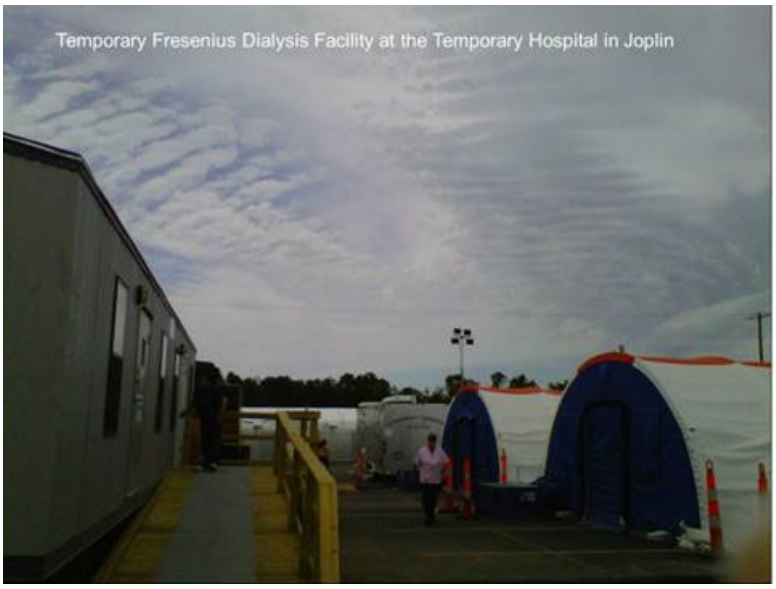
- Drainage
  - Sufficient drains and drainage for each sink and toilet.
  - Each patient station (for dialysis machines) will require a drain that can accept a minimum flow of 800 ml/min. Drain cannot be located more than 3 feet off the finished floor. Drain must meet local codes and be air gapped from building drain.
  - Each portable reverse osmosis system (one for every two stations) will need a drain capable of accepting a 2 gal/min flow rate. This drain can be combined with a drain for the dialysis machine provided that the single drain for both devices can accept the combined flow rate.

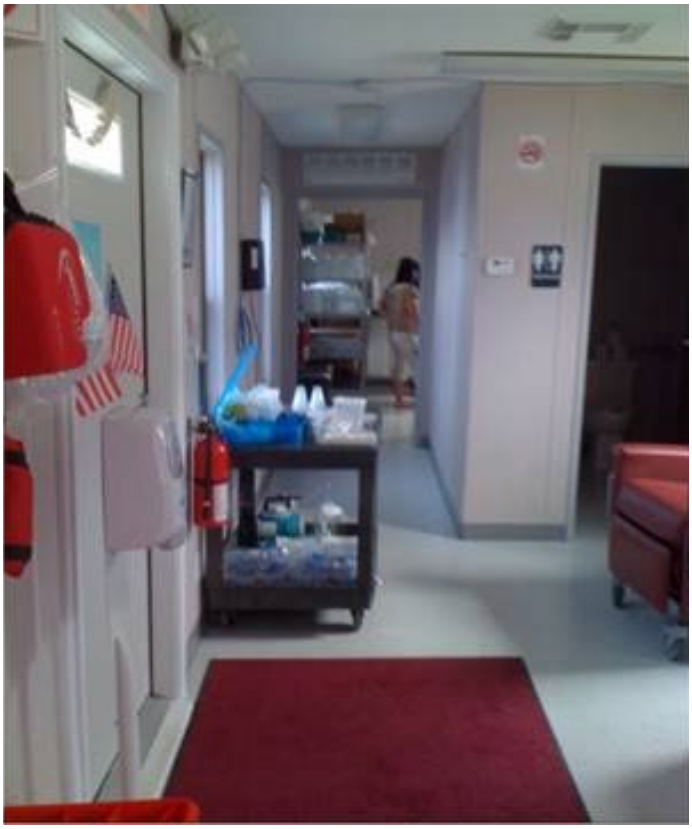
Minimum Requirements for Typical Dialysis Patient Station

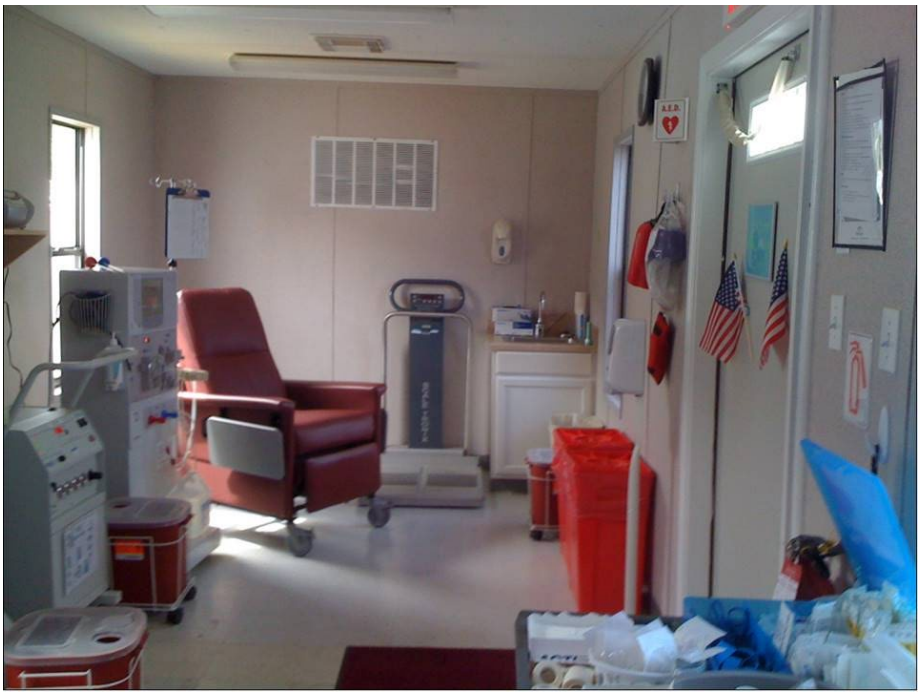
Item	Quantity	Size/Material	Additional Requirements
Minimum dedicated floor area	N/A	80 square feet	Minimum station size is 8'-0" wide x 10'-0" deep; patient stations must have a clear dimension of at least 4'-0" between adjacent chairs.
Minimum ceiling height	N/A	7'-8"	
Patient station location	N/A	N/A	Treatment area must be arranged such that all patient stations are in view of a nurse or patient care technician.

Item	Quantity	Size/Material	Additional Requirements
Flooring material	N/A	N/A	Flooring material must have the following minimum characteristics: easy to maintain, readily cleanable, wear resistant, slip resistant, allow for ease of ambulation for patients, staff and equipment; joints must be sealed, welded or waxed to prevent the growth of mold.
Dedicated hospital grade GFCI (brown) for dialysis machines	1 per patient station	20 amp	All receptacles require matching cover plates and are to be mounted in separate junction box; GFCI requires green power indicator, red trip indicator and self-test technology. (Use Hubbell GFRST83 or equal.)
Dedicated hospital grade GFCI (ivory) for ancillary medical devices	1 per patient station	10 amp	All receptacles require matching cover plates and are to be mounted in separate junction box; GFCI requires green power indicator, red trip indicator and self-test technology. (Use Hubbell GFRST83I or equal.)
Dedicated hospital grade GFCI (ivory) for general use by patients and staff	1 per patient station	10 amp	All receptacles require matching cover plates and are to be mounted in separate junction box; GFCI requires green power indicator, red trip indicator and self-test technology. (Use Hubbell GFRST83W or equal.)
Waste line	1 per 4 patient stations	2" PVC	Can be shared by up to 4 patient stations by using an indirect waste line installed at 1/4" per foot pitch; an air gap is required between the end of the waste line and the floor drain.
Floor drain	1 per 4 patient stations	3" PVC	Drain line must be trapped and vented to atmosphere.
Cold water supply for portable RO equipment	1 per patient station	1/2" copper	
Water connection box	1 per patient station	molded plastic	All boxes are required to have a built-in air gap; box is typically mounted in horizontal chase where plumbing and electrical lines run.
Minimum flow rate for supply water	N/A		

Pictures of Past Temporary Dialysis Centers



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