ASPR TRACIE Technical Assistance Request

Requestor:
Requestor Phone:
Requestor Email:
Request Receipt Date (by ASPR TRACIE):
Response Date:
Type of TA Request: Complex

Request:

Is there a comprehensive checklist or community needs assessment that addresses the needs of dialysis patients following a disaster?

Response:

ASPR TRACIE conducted a literature review of available checklists for End Stage Renal Disease (ESRD) patients for before, during, and after disasters that addresses wrap around care and whole community assessment. At present no one document exists. Below is a compilation of checklist and guidance documents and information obtained from an ASPR TRACIE SME on the needs of dialysis patients post disaster and the requirements for temporary dialysis facilities.

Existing Checklists and Preparedness Documents for Dialysis Emergency Planning

These documents all contain pieces of information that could be used to develop an overall, comprehensive checklist document for public health and healthcare system planners to use when considering the holistic needs of an ESRD patient before, during, and after a disaster. None are sufficient standalone documents.

Centers for Medicare & Medicaid Services. (2017). Preparing for Emergencies: A Guide for People on Dialysis.

> This document provides information for patients about preparing kits, how to evacuate, emergency diets, and other personal preparedness, but no community checklists or information on when it is safe to go home.

Centers for Disease Control and Prevention. (Accessed 2017). Dialysis Care After a Disaster.

> This website includes individual resources for public health officials and patients for dialysis patient management after a disaster. Individual resources are listed and annotated below

What to Do in an Emergency if You Need Dialysis

This webpage describes emergency kits, 3-day diet, evacuation preparedness and other personal preparedness recommendations similar to other publications.

Technical Considerations When Bringing Hemodialysis Facilities' Water Systems Back on Line After a Disaster

This webpage address how to bring source water back into a facility. This guidance is only for non-flooded facilities. If the facility was flooded they should refer to this guidance. This information is outlined in a webpage and not a checklist, but is organized in a way that it could be used in checklist format.

Safe Use of "Tanker" Water for Dialysis

This guidance describes the use of water tankers to supply emergency water to dialysis centers.

Infection Control for Peritoneal Dialysis (PD) Patients After a Disaster

This webpage describes infection control concerns, prevention steps, and other considerations for peritoneal dialysis patients at home, following a disaster. It covers how to care for exit sites and what to do if an infection occurs.

Emergency Preparedness for Dialysis Care Facilities: A Guide for Chronic Dialysis Facilities (listed on the CDC site but published by CMS)

This is a guidance document for the development of an emergency preparedness program for a dialysis center.

Dialysis Safety: What to do when your municipal water supplier issues a "boil water advisory"

This guidance describes water use during the hemodialysis process, guidelines for environmental infection control, and boil water advisory procedures.

Home Dialysis Central: Disaster Planning for PD and Home HD Patients

This resource is a checklist and preparedness guide for dialysis patients with some step by step instructions for what to do in shelter in place and evacuation situations.

Additional Potential Resources

- CDC, AWWA. Emergency Water Supply Planning Guide for Hospitals and Health Care Facilities, 2012
- Northwest Renal Network document *Monitoring Your Dialysis Water Treatment System*

- Association for the Advancement of Medical Instrumentation, Recommended Practices for Dialysis Water Treatment Systems (RD 52 and RD 62)
- Guidelines for Dialysis Care Providers on Boil Water Advisories
- Tips about Medical Devices and Hurricane Disasters
- Medical Devices that Have Been Exposed to Heat and Humidity
- Medical Devices Requiring Refrigeration

Dialysis Considerations from a Large Dialysis Organization for Re-Populating the US Virgin Islands

POC for Info is Mr. Bill Numbers (Fresenius)
Cell (781) 956-8331
Email: bill.numbers@fmc-na.com

The information below was provided by [redacted] in response to a specific request for information on restoring dialysis care to the [redacted] and to discuss the whole community needs of dialysis patients upon returning to the islands.

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

1. Assuming that shelter is not be set up then the patient home needs to be habitable and they need to stay free of infection.
2. Is the home standing, is damage to the home substantial?
3. Is the home habitable?
4. Can the home secured and locked?
5. Does the home have air conditioning?
6. Does the home have reliable hot water for personal hygiene and hand hygiene?
7. Can the patient maintain a clean environment in the home?
8. Is there any evidence of mold growing?
9. Is local water being tested to insure it is potable?
10. Is there reliable electric, we should not move people back who will have to rely on personal generators?
11. Can transportation reliably reach the patient three times a week and transport them to the dialysis clinic?
12. Will the patient have access to 911 services?
13. Will the patient have access to hospital services for emergency care?
14. Will the patient have access on the island to access emergency de-clotting?

Temporary Dialysis

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 [redacted] would require a 14 station unit.
67 patients [redacted] 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. Space should also be provided small area for the storage of wheelchairs.
- Dialysis Unit area:
    - If using dialysis chairs – 80 sqft.
    - If using beds or stretcher – 100 sqft.
    - 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 provide 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 of sufficient size to allow the storage of dialysis supplies and medications used throughout the day. This area can be an area in the dialysis unit section noted above. Note: additional bulk storage of 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 - The following electrical will be needed for each dialysis station:

- One dedicated 20 amp duplex. This duplex should be identifiable either by labeling or color coded.
- Two duplex outlets (four plugs). Used for Portable RO machines and other ancillary devices (IV pumps, oxygen concentrators, etc.)

Water Supply

Potable water supply to sinks and toilets of sufficient pressure and flow to allow use.
Additionally, the following potable water supply will be need for every **two** patient stations:
2.2 gpm at 10 PSI and tempered Range 50-85º F
Note: each portable reverse osmosis machines can provide purified water to two dialysis machines.

Drainage

Sufficient drains and drainage for each sink and toilet.
Each patient stations (for dialysis machine) will require a drain that can accept a minimum flow of 800ml/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 tech
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

Item	Quantity	Size/Material	Additional Requirements
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		