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Disaster preparedness: is your unit ready?

Nephrology Nursing Journal, Oct, 2001 by Caroline S. Counts

Disasters, whether natural or human-made, require advanced planning to lessen the impact of each unique occurrence. This is true for dialysis units as well as whole communities. Unfortunately, without previous first-hand experience, there is a tendency to underestimate the potential for devastation, suffering, and death. There may also be a tendency to believe disasters always occur somewhere else and, therefore, to ignore

the need for disaster preparedness.

The need for disaster planning is greater today than at any time in history (Taggart, 1985). The increased number of patients on dialysis, the increased average age of this patient population, and the increased existence of their co-morbid conditions adds validity to this claim. The purpose of this article is to review various issues that may arise with disasters and to promote predisaster planning for dialysis units.

Background Information

A disaster can be considered any human-made or natural event that causes destruction and devastation that cannot be alleviated without assistance (Hassmiller, 1996).

Natural disasters include such events as hurricanes, floods, tornadoes, earthquakes, volcanoes, blizzards or other occurrences that may affect the whole community. Other disasters may affect only the dialysis facility, such as a fire or bomb threat.

Planning a response to such disasters is an enormous undertaking and requires anticipation of the numerous problems a disaster will pose. When developing a disaster plan, the facility should have specific plans of action for each type of disaster that might occur in the particular geographic location (Waeckerle, 1991). A general description of various disasters is presented in Table 1.

Each type of potential disaster must be considered in terms of predictability, onset, duration, frequency, and potential magnitude (Waeckerle, 1991). For example, tornadoes are among the most lethal and violent of the natural disasters due to their unpredictability and strength. These storms can strike anywhere. Tornadoes usually appear as funnel clouds that extend from the base of thunderclouds toward the ground (Tornado Disaster, 1991). The most violent tornadoes can produce massive destruction with wind speeds of 250 miles per hour (mph) or higher. The path of a tornado's destruction can be more than a mile wide and 50 miles long. It travels at an average forward speed of 30 mph; but this can vary from stationary to 70 mph. In the United States an average of 800 tornadoes are reported annually resulting in 80 deaths and over 1,500 injuries. While a tornado can strike at anytime, it is more likely to strike between 3 pm and 9 pm. The prime months for tornadoes in the southern states is between March and May; in the northern states it is during the summer season (National Weather Service, 2000).

Between the afternoon of April 26, 1991 and the morning of April 27, 1991, 54 tornadoes hit the Great Plains of the United States. Twenty-one persons were left dead while another 308 were injured. The economic impact of the storms was over $277 million (Weather Channel Enterprises, 1998). In 1993, there were 1,173 tornadoes of which 16 killed 33 people; there were 948 injuries. These figures were compiled by the staff at The National Severe Storms Forecast Center in Kansas City, MO and released by the Weather Channel over the Internet (February 2, 1995).

In contrast, the nature of hurricanes allows for timely warnings, preparation, and evacuation if necessary. Approximately 6 to 10 hurricanes develop from nearly 100 tropical storms that form annually. Most of these storms develop over the warm waters of the tropics (Weather Channel Enterprises, 1995). A hurricane has winds of at least 74 mph but can surpass 155 mph (Weather Channel Enterprises, 2000). The

hurricane season lasts from June through November along the Atlantic and Gulf coasts. Most of a hurricane's destructive work is done by the storm surge, wind, and flood -- producing rains. The storm surge is the most destructive part of the hurricane as it is the storm surge that claims 9 out of 10 victims of a hurricane. Not only can the mean water level increase 15 feet or more, but the wind waves of 10 feet high or more can be superimposed on the level of water. This build up of water can cause severe flooding in coastal areas. Additionally, a typical hurricane brings at least 6 to 12 inches of rain that can result in additional flooding (National Weather Service, 1996). These heavy rains can cause major flooding in areas hundreds of miles from where the storm originally came ashore. The wind is responsible for much of the structural damage such as trees being uprooted and power lines being torn down (Weather Channel Enterprises, 2000).

More and more Americans have put themselves and their property at risk by moving to the vulnerable coastal locations (Piekle & Landsea, 1998). It may be that many of these residents, and even the local officials, have never experienced the brunt of a major hurricane and may not take the threat of one of these storms seriously (DiVincenzo, 1992).

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- Next »