



SC Guide for Hospitals to Shelter-in-Place During a Hurricane

The decision for a hospital to Shelter-in-Place or evacuate during a hurricane is one that must be made with careful and detailed planning, based on safety recommendations developed by national experts and emergency response organizations and agencies. Deciding whether to preemptively evacuate or Shelter-in-Place requires consideration of two factors:

- The nature of the event, including its expected arrival time, magnitude, area of impact, and duration; and
- The anticipated effects on the hospital, given the nature of the event and the hospital's ability to meet the criteria cited in this document.

The attached table of recommendations provides a framework for assessing the anticipated effects of the event on key resources needed to care for patients (water, heat, electricity, staffing, food, etc.), and the overall structural integrity of the building. Specific recommendations are listed for each of these factors, the answers to which will highlight the hospital's preparedness for Sheltering-in-Place.

Of the items listed in the table, most are not required by regulation. The table was developed based on recommendations from the Federal Emergency Management Agency (FEMA), Joint Commission requirements, and SCDHEC.



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Hospital Shelter-in-Place – Table of Recommendations			
Plan Component	MINIMUM RECOMMENDATION	REQUIRED DOCUMENTATION	RATIONALE
Location of critical Fire Protection systems, plumbing systems, electrical systems, mechanical equipment, onsite storage of medical gases, and sewer openings.	<p>These systems should be located above Base Flood Elevation (BFE)</p> <p>If designed protection is not in place, indicate what critical facilities would be affected by BFE flooding and what measures have been taken and plans made to prevent the flooding and to protect patients and staff.</p>	Written verification by surveyor or description of measures and copy of the hospital's plan to mitigate flooding and to ensure operational systems.	FEMA 543 ¹ and major building codes.
Facility designs include prevention of potential back flooding of first floor drains.	<p>Designed protection from back flooding of first floor drains is installed and in use.</p> <p>If designed protection is not in place, indicate what critical facilities would be affected by first floor flooding and what measures have been taken and plans made to prevent the flooding and to protect patients and staff.</p>	Written verification or description of measures and copy of plan to mitigate back flooding.	OPHP Recommendation
All critical facilities located where the basic wind speed is expected to be 130 mph or greater shall comply with the minimum requirement noted.	<p>1) Exterior glazing in wind-borne debris regions are impact-resistant, or be protected with an impact-resistant covering (shutters).²</p> <p>2) Doors (with and without glazing) are designed to resist the "E" missile load specified in ASTM E 1996.³ -</p> <p>If designed protection is not in place, indicate areas within the facility that will house the patients and what</p>	Written verification of the appropriate glazing and/or copy of the hospital's plan to protect patients and staff, including identification of the location of sheltering.	FEMA-543 ⁴ and FEMA-361 ⁵ and OPHP Recommendation

¹ FEMA 543, *Design Guide for Improving Critical Facility Safety from Flooding and High Winds*; Chapter 2, Table 2-1, Section 2.3.2.1, Section 2.3.5.2 and Chapter 3, Section 3.4.3; http://www.fema.gov/media-library-data/20130726-1557-20490-1542/fema543_complete.pdf

² For Category III and IV buildings in areas with a basic wind speed of 130 mph or greater, the glazing is required to resist a larger momentum test missile than would Category II buildings and Category III and IV buildings in areas with wind speeds of less than 130 mph.

³ To minimize the potential for missiles penetrating exterior doors and striking people inside the facility, it is recommended that the doors should be tested in accordance with ASTM E 1886 (2005). The test assembly should include the door, door frame, and hardware. It is recommended that the doors meet the wind pressure and missile resistance criteria found in FEMA 361. Information on door assemblies that meet these criteria is included in FEMA 361.

⁴ Ibid

⁵ FEMA-361, *Design and Construction Guidance for Community Safe Rooms*; <http://www.fema.gov/media-library/assets/documents/3140>

	plans have been made to protect patients and staff.		
Fire Department has knowledge of hospital access points.	Confirmation that the Fire Department has knowledge of hospital access points.	Written verification from the Fire Department.	OPHP Recommendation –The Fire Department must be able to reach all structures by way of access roadways, streets, or driveways.
Prior to a Mandatory Medical Evacuation Order, submit to DHEC the number and type of patients the facility plans to shelter in place with and the number and type of staff the facility plans to shelter in place. Include support staff such as maintenance, kitchen, janitorial, security and other appropriate ancillary services.	Plan for adequate staff to support patients for at least 96 hours.	Written verification with plan providing the identification of the patients to be sheltered and numbers and types of staff to be sheltered.	OPHP Recommendation
Food supply onsite; Medical supply onsite; Onsite storage of medical gases; generator fuel	Plan for adequate food and potable water supply, medical supply, and medical gases and generator fuel for at least 96 hours.	Written plan description how the hospital will provide adequate food and potable water, medical, medical gases and generator fuel supplies.	FEMA 543 ⁶ and OPHP Recommendation
A plan for facility staff support (e.g., water, medical, mental health)	Plan for the support of staff (wellbeing) for at least 96 hours.	Written plan describing facility staff support for 96 hours.	OPHP Recommendation – Staff wellbeing issue
Identification of patient care locations to provide the greatest protection from danger (e.g., interior hallways, areas without windows, non-conventional treatment areas)	Patient care locations have been identified and include access to critical resources and supplies.	Written verification	OPHP Recommendation – Patient safety issue

⁶ See Footnote 1



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THE PROCESS FOR APPROVAL TO SHELTER-IN-PLACE

Hospitals located in Beaufort, Charleston, Colleton, Dorchester, Georgetown, Horry and Jasper counties that are seeking exemption in the event the Governor issues a Mandatory Evacuation Order for an impending hurricane must ***have previously submitted a complete Critical Data Sheet and documentation supporting the information listed in the attached chart, in conjunction with the required Disaster Preparedness Plan.***

Only facilities that have submitted the required Critical Data Sheet with required documentation and have a currently approved plan on file can be considered for exemption from a Mandatory Evacuation Order.

Your facility must follow the procedure outlined below to request a review and evaluation during a declared emergency:

- Annually, by June 1 of each year, complete the online Critical Data Sheet at <http://scangis.dhec.sc.gov/CDATASHEET/LOGIN.ASPX>
- Submit a copy of the engineer's report concerning the wind load your facility should withstand. This form does not need to be resubmitted if there have been no changes. However, if there has been a major addition or construction of a new building adjacent to the existing facility that might change wind current flow, then a new report must be submitted.
- Comply with the requirement of having sheltering, transportation and staffing plans.
- Submit documentation into the Critical Data Sheets verifying the requirements listed in the attached chart, if the information is not already documented in the Critical Data Sheets.
- Documentation for the additional recommendations may include engineer verifications, verifications by SCDHEC inspectors, verifications by local Fire Departments, or other third party verifications.
- Draw down the census of the facility.
- Request exemption from the evacuation order from DHEC's Bureau of Health Facilities Licensing at 803-545-4370
- The local emergency manager will be provided information regarding the request.

SCDHEC staff will review the above information (in consultation with the hospital), in addition to storm projections, SLOSH (Sea, Lake, and Overland Surges from Hurricanes) model and other relevant data in order to determine whether your facility will be considered to Shelter-in-Place for a specific storm. SCDHEC staff will then make the appropriate recommendation to the Governor who will make the decision of whether to allow the facility to shelter in place.

Questions regarding these requirements should be addressed to:

SCDHEC
Office of Public Health Preparedness
(803) 898-3708