

PUBLIC HEALTH SERVICE REPORT
ON HURRICANE HILDA

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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INTRODUCTION

Packaged Disaster Hospitals are completely functional 200-bed hospitals, packed in boxes and placed on loan to various communities throughout the United States for use in extreme emergency conditions. Following is a detailed account of how these pre-positioned PDH's were used in one disaster.

The narrative contained herein was extracted from several logs, disaster reports and other selected sources of information relating to Hurricane Hilda which devastated southern Louisiana in September 1964. It is hoped that by detailing the sequence of activities prompted by the disaster situation, other emergency planning bodies will be materially assisted in the development of disaster plans for their communities. Special cognizance should be taken of the fact that while no two disasters will offer the same set of circumstances, there still remains in all disasters the fundamental objective of providing health protection and medical care for the victims.

The log maintained by the Division of Health Mobilization Regional Office Consultant located in Dallas, Texas, has been included in full to illustrate the complexity of the situation and the subsequent actions taken by the Federal Government to assist the victims. Also included is the log of the Louisiana State Health Mobilization Representative who was involved in the operation. Thus, the vital interaction of Federal, Regional and State activities can be clearly viewed.

All health officials associated with the emergency measures described in the following pages are to be highly commended for so successfully carrying out their lifesaving mission.

HISTORY OF THE DISASTER

On September 30, 1964, a hurricane named Hilda originated in the Gulf of Mexico approximately 450 miles southeast of New Orleans, Louisiana.

At 7 a.m. on October 1, Hurricane Hilda was located at coordinate 24.8 latitude and 90.4 longitude, approximately 360 miles south of New Orleans, traveling at 6 m.p.h. in a northwesterly direction. At that time it was estimated that winds ranging from 60 to 140 m.p.h. would accompany the hurricane and that high tides would precede the center of the hurricane by at least 200 miles. The danger of damage from wind and tides would occur 24 to 36 hours prior to the actual arrival of the storm center. A hurricane watch was placed in effect on the entire Louisiana Coast eastward to Mobile, Alabama.

At 4 p.m. on October 1, Hurricane Hilda was centered at latitude 25.2 and longitude 91.5, about 330 miles south-southwest of New Orleans, moving northwest at approximately 8 miles m.p.h. Winds were estimated at up to 150 m.p.h. near the center, with hurricane-force winds extending 80 miles from the center. Hurricane warnings were hoisted along the Gulf Coast west of the Mississippi River and gale warnings were issued from Galveston, Texas to Mobile, Alabama.

At 8 a.m. on October 2, Hurricane Hilda was centered at latitude 26.6 and longitude 91.9, about 250 miles south-southwest of New Orleans, moving north-northwest at about 7 m.p.h. Winds of 150 m.p.h. were estimated at the center of the hurricane, and hurricane-force winds extended 80 miles from the center. Rises in tides were projected as high as 12 feet. Hurricane warnings were displayed along all of the Louisiana coast and to the mouth of the Mississippi River. All residents of the low-lying coastal area were advised to move out without delay and seek a safe place before roads became flooded.

At 4 p.m. on October 2, Hurricane Hilda had shifted from a northward to a due eastward movement and the center was about 200 miles from New Orleans.

At 8 a.m. on October 3, the hurricane was moving north-northeast toward the coast of Louisiana with winds up to 150 m.p.h. Tides at the point of entry on the Louisiana Coast were still projected at 12 feet or more. Between 6:30 a.m. and 9:30 a.m. tornadoes hit Larose, Raceland, and suburban New Orleans.

About noon on October 3, the center of the hurricane passed through Franklin, Louisiana, moving in a north-northeast direction with gusts of wind up to 150 m.p.h. Hurricane-force winds extended 80 miles and gale winds 200 miles from the center of the hurricane.

Extensive property damage resulted throughout the area covered by the hurricane. Loss of life occurred in only two localities, however. The Larose tornado left 21 dead. In the town of Erath, force of the wind caused a water tank to collapse onto the city hall. Eight of nine officials manning an emergency operating center in the city hall were killed at their posts.

USE OF THE PHS PACKAGED DISASTER HOSPITALS

Six Packaged Disaster Hospitals in Louisiana were used to provide necessary medical care to the victims of Hurricane Hilda. These were the hospitals located in Raceland, Opelousas, Covington, Abbeville, Franklin and Morgan City. Accounts of the specific use of each hospital follow:

RACELAND, LOUISIANA -- PDH Serial No. 56/104

The Health Mobilization Representative assigned to Louisiana and the Health Mobilization Consultant of Region VII arranged a meeting at Raceland to talk to Dr. Philip A. Robichaux, custodian of the PDH who also serves as coordinator for civil defense health activities in LaFourche Parish. Also at this meeting were Mrs. Marian Waguespack, chief of the women's civil defense health activities in LaFourche Parish, and Mr. Joe Price, an employee of the Police Jury. These were later joined by Mr. T. M. Barker, president of the Police Jury.

Dr. Robichaux stated that on October 2, with the hurricane off the coast of Louisiana and a good possibility of Raceland being hit, a meeting was called by the Civil Defense Officer with the head of the Police Jury to make plans for the hurricane. It was determined at this meeting that the Agricultural Fair Building would be reserved for the use of the PDH in the event that it had to be used rather than reserving it for evacuees. The storage site of the PDH is approximately 75 yards from the Agricultural Fair Building.

It should be pointed out that in this particular area there are two fixed hospitals. One is St. Anne's Clinic Hospital, located in Raceland and operated by Dr. Robichaux, which has a normal bed capacity of 22 and a staff of 48. The other is Our Lady of the Sea General Hospital in Galliano, Louisiana, where there are 31 beds and 61 people on the staff.

On the morning of October 2, the patients of the Lady of the Sea General Hospital were evacuated to Houma, Louisiana, a few miles away. An automobile accident during the evacuation resulted in the death of one patient. The staff remained at the hospital until the afternoon of October 2, when civil defense authorities ordered evacuation of the area.

Dr. John LeBlanc, head of the civil defense activities at the Our Lady of the Sea General Hospital, called at approximately 3 p.m. to notify Dr. Robichaux that they were evacuating the area. Dr. Robichaux requested that they evacuate to the Raceland Agricultural Fair Building in order to be available to staff a PHS Packaged

Disaster Hospital should the hospital have to be used. Seventy-five cots were made available for these personnel by the American Red Cross from Thibodaux. It was not necessary to use cots or blankets from the PDH to accomodate them. The staff set up a receiving station, with first aid equipment on hand, to receive any casualty which might result from Hurricane Hilda. The first aid supplies had been evacuated with the hospital personnel from Galliano.

Dr. Robichaux, as custodian of the PDH, despite the fact that communication facilities were already overloaded contacted Colonel Avendano of the State Civil Defense Office in New Orleans to get permission to use the PDH if necessary. This request was referred to the Louisiana Health Mobilization Representative, and permission was granted immediately. Dr. Robichaux stated that, the elapsed time between placing his first call requesting permission until permission was received was less than 30 minutes.

It should be noted that Dr. Robichaux and his staff were preparing for a hurricane; however, the unexpected happened. At approximately 6:30 a.m. on October 3, a tornado hit the small town of Larose, Louisiana. The first casualties began to arrive at St. Anne's Hospital approximately 15 minutes later on open-bed trucks "stacked up like cordwood" and covered with mud. The first truck arrived dragging several hundred feet of electrical wiring which it had run into. Wires were down everywhere, and the trucks had to go out of the way to reach Raceland.

Dr. Robichaux, realizing that his small hospital would not be able to handle the great number of arriving casualties, ordered the PHS Packaged Disaster Hospital set up. It should be pointed out that there was a basic written utilization plan and personnel assignments for the PDH in Raceland. According to the plan the V.F.W. had the responsibility for setting up the PDH and had participated in two PDH training exercises held several months before. V.F.W. members were put on the alert Friday night, October 2. They were standing by at the Agricultural Building and within one hour after being notified to set up the unit, had it ready to treat patients. In the setting up operation, 25 V.F.W. team members were assisted by 20 staff members from the Lady of the Sea General Hospital and about 12 volunteers.

Of the approximately 212 casualties transported to Raceland, 17 were dead on arrival. Thirty-five were admitted to St. Anne's and 160 to the PDH. Casualties passed through triage, were given first aid and medical care as required and placed in ward sections. As soon as conditions permitted, the more seriously injured were transported to Charity Hospital in New Orleans and West Jefferson Hospital in Gretna. Twenty-five emergency vehicles took part in the transfer of patients. Some patients were discharged by Saturday

night. By Sunday morning, October 4, only 35 casualties with lesser injuries remained in the PDH. Two casualties died in the PDH and 4 died in hospitals to which they had been transferred. Although precise medical records were not maintained, the principal categories of injury were about as follows: Shock - 50; Lacerations - 140; Fractures - 18 (some patients had several conditions).

The PDH staff totaled 66: 12 physicians; 6 nurses (two served as anesthetists); 15 nurses aides and 33 orderlies and helpers. The PDH sections set up were: triage; clean-up area (to remove mud from casualties); shock ward; holding ward; operating room (set up but not used); and central supply. The 15 KW generator which had been mounted on a special trailer constructed by the V.F.W. was placed in operation in an outdoor area adjacent to the operating site. Its operation was necessitated by a power failure which occurred Saturday night, at the height of the storm. An emergency morgue was set up at Falgout's Funeral Home.

The local supermarket released food to feed the 160 patients in the PDH as well as the hospital staff. Payment for the food was made by the American Red Cross and prepared by volunteer workers.

Some of the adverse publicity that resulted from the use of the hospital noted that the X-ray machine was without film. This was true, due to the fact that a medical stockpile depot inspection team had recently visited the stored unit in Raceland. As part of the PHS program for replacing outdated or deteriorated items in the PDH's, the team had removed the old X-ray paper from the unit, pending replacement with new paper. Consequently, at the time of the disaster the unit was temporarily without its X-ray paper. It was also reported that broom handles and boards were used for splints because no splints were in the hospital. This report is only partially true. While some improvised splints were used, this was because the splints could not be readily found at the time of the disaster. They were later located in their proper boxes.

Communications did not present a problem. Communication within the PDH was provided by runners. A Civil Air Patrol short wave 2-way radio was set up and operated from the PDH throughout the emergency. Telephones were functioning and were used extensively (although more telephone outlets would have been desirable). Outside communications were established with: Sheriff's Office (State and local police); State and local Civil Defense Agency; Red Cross; State and local Health Departments; fixed hospitals; and local medical personnel.

Most of the casualties were identified in spite of adverse circumstances. It must be remembered that a great many of the casualties, including many of the dead, had evacuated out of the low areas into Larose and they were not known in Larose, where the tornado struck. However, by Sunday afternoon all the injured and the dead had been identified with the exception of one. Of the 23 dead, 13 were from outside Larose.

The PDH remained in operation until about 8:30 a.m. on Monday October 5, 1964. This operation is the first time that a complete PDH has been broken out, set up, received casualties and provided them with hospital type care. In the past, many PDH's have been opened but this has usually been to procure the cots and blankets to provide emergency sleeping accommodations for evacuees. In a few cases medical supplies have been used, but only to provide minor first aid care.

It is the Public Health Service's policy that the PDH may be used on any occasion that such use can substantially alleviate suffering and reduce loss of life.

The staff to operate the hospital was on hand when it was opened. The people with the responsibility for setting up the hospital had been alerted and were on stand-by at the time the hospital was to be set up. Prior arrangements had been made for provision of food. Two electricians had been assigned responsibility for setting up and operating the generator and as soon as it was needed, they put it into operation. The provision of immediate medical care in the Raceland PDH prior to long-distance transportation to fixed hospitals reduced the number of fatalities that would have occurred without this medical aid.

Dr. Robichaux and his staff, and the other people who assisted in setting up and operating the PDH in Raceland are to be highly commended. They have proven the value of predisaster preparations to use the PDH, and that the unit can be used effectively in a natural disaster. It must be remembered that a PDH should not be used in other than national emergencies without prior permission of the State Health Department. The State Agency, in turn, must have the approval of the PHS regional office.

OPELOUSAS, LOUISIANA -- PDH Serial No. 55/440

About 13,000 persons were evacuated to refugee centers in Opelousas, La. from Franklin and other points south and east. The normal population of Opelousas is about 15,000. The two hospitals in Opelousas - Opelousas General Hospital and St. Landry Clinic Hospital - were already filled to capacity. With the report of illness and minor injuries among the evacuees, Dr. Lozaro, administrator of the PDH in Opelousas, decided that the unit be set up. Permission was not requested from the State.

No written plan had been prepared for the use of the Opelousas PDH prior to the disaster. However, two training exercises had been conducted in Opelousas with the State's PDH training unit. The technical staff responsible for moving and setting up the disaster hospital (who were on the staff of the two fixed hospitals) accomplished their mission in two hours and fifteen minutes. The hospital was set up Friday morning, October 2, in the Opelousas Junior High School Gymnasium. The gymnasium was divided into sections of 20 cots each for the care of patients. The PDH was deactivated on Monday, October 5.

A professional medical staff of 7 persons was designated for each of the two fixed hospitals and for the PDH. At least three physicians along with other medical personnel were on duty at each facility at all times during the disaster period. Medical personnel among evacuees assisted the local professional staffs.

Eight evacuees were admitted to the fixed hospitals including an obstetrical patient who delivered while at the hospital. A total of about 150 evacuees were treated at the PDH. Nearly all the admissions were for febrile symptoms - no definitive diagnoses were established.

Food was furnished by the American Red Cross and was prepared in the junior high school by school personnel. Communications were by telephone although a car from the Police Department was on stand-by in the event radio communication became necessary. (Since the disaster, local physicians are planning for a radio communication system, wherein they may communicate from car to car and with a central location, for use in medical emergencies.) Transportation for professional staff was provided by automobile agencies in Opelousas but transportation for patients was not adequate.

Materials from the PDH used were: cots and blankets, the collapsible water tank, and certain drugs for the treatment of the febrile conditions.

Human suffering was alleviated by the use of the PDH in Opelousas.

COVINGTON, LOUISIANA -- PDH Serial No. 56/91

A PDH was set up in the Baptist Church in Covington after the St. Tammany Parish Hospital was filled. This was done under the general direction of Sheriff George Broom, after the Larose tornado and in accordance with the St. Tammany plan for disaster. Weather advisories at the time indicated that the hurricane eye would pass near Covington and that tornadoes were likely. As it happened, the storm turned and damage to the Covington area was superficial and only about twelve slightly injured casualties received treatment in the PDH. However, Covington acted in the face of a strong possibility that it might encounter the same type of emergency that occurred at Raceland.

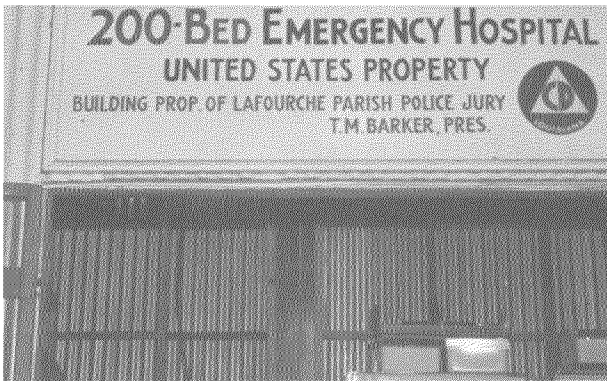
ABBEVILLE, LOUISIANA -- PDH Serial No. 57/250

Abbeville used about two dozen cots and blankets, some alcohol, some bandages, and one tank of oxygen from its PDH. Dr. C. J. LeBouef used these materials in the first aid station set up at the high school auditorium which provided shelter for several hundred people during the hurricane.

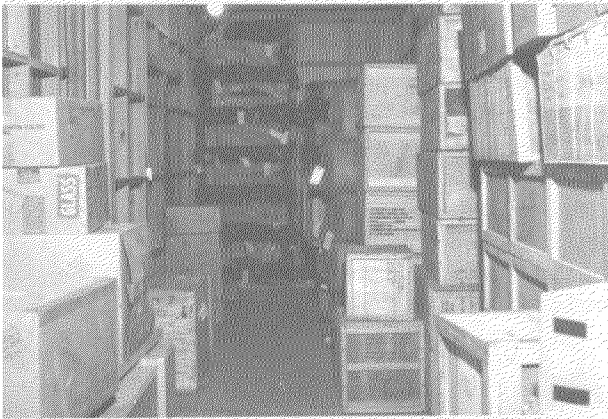
FRANKLIN, LOUISIANA -- PDH Serial No. 57/393

MORGAN CITY, LOUISIANA -- PDH Serial No. 57/698

At Franklin and Morgan City most of the population was evacuated. When weather reports indicated that these towns were in danger of flooding, as much of the PDH supplies and equipment as possible were loaded on National Guard trucks and moved to Lafayette to prevent storm damage. This was done on orders of the Parish Civil Defense Director without central office clearance. The custodians should have been notified before this action was taken.



Entrance to storage building in which PDH is stored. Storage sites must be suitable for long term storage.



The PDH is stored in 660 crates and boxes requiring about 2800 cubic feet of storage space.



The pre-selected operating site requires at least 15,000 sq. ft. of space for full 200-bed operation.



Delicate surgical supplies and equipment require careful unpacking when setting up PDH for emergency use.