Pan American Health Organization
World Health Organization
REGIONAL OFFICE FOR THE Americas

Humanitarian Aid and Civil Protection

Case Studies in Grenada and Saint Lucia

as part of the Project

CARIBBEAN HEALTH SERVICES RESILIENT TO IMPACT OF EMERGENCIES AND DISASTERS

Funded by the:

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PROJECT BACKGROUND

The entire Caribbean region is prone to hazards, both natural and man-made, including tropical storm systems, earthquakes, droughts, tsunamis and volcanic eruptions in some countries. The impact of climate change, manifested through factors such as sea level rise, also poses a great challenge to countries in the region. There's also the issue of emerging health threats such as Dengue and Chikungunya which also threaten the region as is evidenced by rapidly growing numbers of infected persons. Close to 70% of the 18,000 healthcare facilities in Latin America and the Caribbean are located in areas at risk of disasters. Hundreds of them have been damaged or destroyed as a result of major events, causing massive impact on health care and enormous economic loss for the health sector.

On September 7, 2004, Hurricane Ivan, a category 3 storm at the time, passed through Grenada leaving damage and losses estimated at more than US$900 million, more than twice the country's GDP. More than 80 percent of the country's infrastructure was damaged, and only two of the 75 public schools remained untouched. Severe disruption of the health sector also occurred. Sixty-nine percent of health sector infrastructure was affected by the hurricane and health services could only be provided on a limited basis. The Princess Alice Hospital, Grenada's second largest hospital was almost totally destroyed, losing 75 percent of its roof.

In 2012, Hurricane Tomas caused damage and losses in the health sector in Saint Lucia to the tune of EC$8.3 million, affecting several hospitals, including the Dennery Hospital which had to be relocated and which accounted for half of the economic impact on the sector. In December 2013, heavy rains caused severe flooding in Saint Lucia which affected nearly 20,000 persons and resulted in overall estimated damage and losses of EC$267.76 million according to the Rapid Damage and Needs Assessment report issued by the Government. Specific damage to the health sector was calculated at EC$639,067.00 for the replacement of furniture, equipment and medical supplies and losses for the sector were estimated at EC$359,667.00 which included the retrofitting of facilities, relocation of services, clean up, disease control and activities to re-establish sanitary conditions.

Despite their vulnerability, only 40 of the 131 public hospitals in the Caribbean have assessed their safety, with 86% of those achieving a Category B rating which indicates potential risk for patients, hospital staff and ability to function during and after a disaster. Only three hospitals have re-applied the Hospital Safety Index following improvements. Limited resources and lack of a formal safe hospital programme result in re-assessment of hospital safety not being considered a priority and many hospitals experience challenges in implementing safety improvement measures without external support. This inability to focus on safety does not negate the fact that the healthcare sector is critical and it is vitally important that they remain functional during and after disasters.

The Pan American Health Organization/World Health Organization (PAHO/WHO) with support from European Commission Directorate - General for Humanitarian Aid and Civil Protection (ECHO) as part of

its commitment to Safe Hospitals implemented the Caribbean Health Services Resilient to Impact of Emergencies and Disasters1 project during the period 1 April, 2013 to 31 December 2014. The Dominican Republic, Grenada, Guyana, Jamaica, Saint Lucia, Suriname and Trinidad were identified as regional beneficiaries of the project following followed consultation with the Health Ministries, other local authorities, and PAHO disaster focal points. It was noted that some of the countries have very limited human resources and/or financial capacity to conduct safe hospitals programming. Moreover, health facilities in these countries had low safety ratings, and did not participate in the DIPECHO Action Plan for the Caribbean 2011-2012.

The project targeted primarily the reinforcement of local capacities to manage and respond to emergencies. The beneficiaries were predominantly local health staff, hospital safety evaluators, and personnel from local emergency response agencies. The improved resilience and emergency preparedness of health infrastructure will benefit approximately 4,240 patients of 27 targeted hospitals in priority areas, through improved capacity and quality of emergency health care delivery. The project, implemented over a 20 month period, aimed to improve the resilience of health services to emergencies through the strengthening of capacity at the regional and national level with the following expected results:

1. Safety of health facilities strengthened in priority provinces of Dominican Republic.
2. National safe hospitals programs developed in target countries.
3. Hospitals and small/medium health facilities in the Caribbean are safer.

Grenada's General Hospital and the Princess Alice Hospital and the Soufriere Hospital in Saint Lucia are the focus of this report.

OVERVIEW OF WORKS COMPLETED IN EACH COUNTRY

Saint Lucia-Soufriere Hospital

The Soufriere Hospital was identified by the Ministry of Health as the beneficiary of the project, having scored poorly on the Hospital Safety Index. Interventions were aimed at improving the overall safety and functionality of the facility.

Built in 1946, the Soufriere Hospital operates around the clock, serving the surrounding communities. Since its establishment, the hospital has been operating with full time doctors and nurses, nutritional staff, ambulance service, x-ray facilities, ward,

Figure 1: Roadside Elevation of the Soufriere Hospital – St. Lucia

[1]*Referred to as the DIPECHO project in this document.*

obstetrics and gynecology, general practice, midwifery, a dispensary and even a morgue.

The hospital serves a number of villages including Canaries, Soufriere/Find St. Jacques and Choiseul with a total population of 16,614 persons. It also provides health care services to the growing tourism sector in that part of the island. This map illustrates the location of the Soufriere Hospital and on the banks of the Soufriere River and its proximity to the coast.

Interventions/Retrofit works (Soufriere)

Based on assessments and the Safety Improvement Plan, the improvements recommended for the Soufriere Hospital included the following:

Figure 2: Location of Soufriere Hospital, Saint Lucia
Source: http://www.thedowntownhotel.net/about_us.htm

1) Fire safety and egress- Works included the installation of smoke detectors, fire extinguishers and emergency exit signs.

2) Walls (Interior and Exterior) – Painting of interior wall surfaces in the critical areas and the exterior surfaces at the rear of the building.

3) Roof Works – Repair works to the soffit, replacement of damaged ceiling boards and sealing of concrete roof sections.

4) Plumbing – Replacement of sink faucets, installation of the existing water tanks to rain harvest and the installation of a water filtration system (optional).

5) Interior Furnishing – Installation of storage shelves for medical supplies and repair works to damaged cabinets and shelves.

6) Security – Installation of perimeter security lights and signage.

Works supported by this DIPECHO project included the establishment of a National Safe Hospital Committee which is comprised of members from various sectors. Discussions were held with the Health Disaster Coordinator and the National Emergency Management Organisation (NEMO) to ensure that the functions and work of the committee were in-line with Saint Lucia's national comprehensive disaster management programme. A key priority identified through these discussions was the need to provide technical support for the development and implementation of national safe hospitals plans and priority interventions for vulnerable health facilities in Saint Lucia.

To date, very few physical improvements have been made to the Soufriere Hospital. However, some components of the improvement plan are currently being addressed under the DIPECHO project while others have been put on hold and included in Ministry of Health projects proposed for 2015.

Grenada General Hospital

Located in the capital, Saint George's, the General Hospital is comprised of several buildings of varying age and condition, all of which are located in proximity to the coastline. The original General hospital was located directly below Fort George, overlooking the city of Saint George's. It was built by the British and initially used as a Military Hospital. The hospital remained a military hospital under both French and British who switched control until 1864, when it was converted to civilian use.

Figure 3: Elevation of the Grenada General Hospital – Grenada

A new hospital was constructed a short distance from the old facility and overlooks the harbour and Grand Anse beach. Operations were transferred to the new facility in December 2002 and the new hospital was commissioned on 31st January, 2003. It is equipped with biomedical equipment and other medical furnishings which improved the overall capacity of the facility. Among the notable features at the hospital are piped medical gases, audio-intercom, air conditioning in select areas, fire alarm systems, elevators, standby generators and five operating theatres.

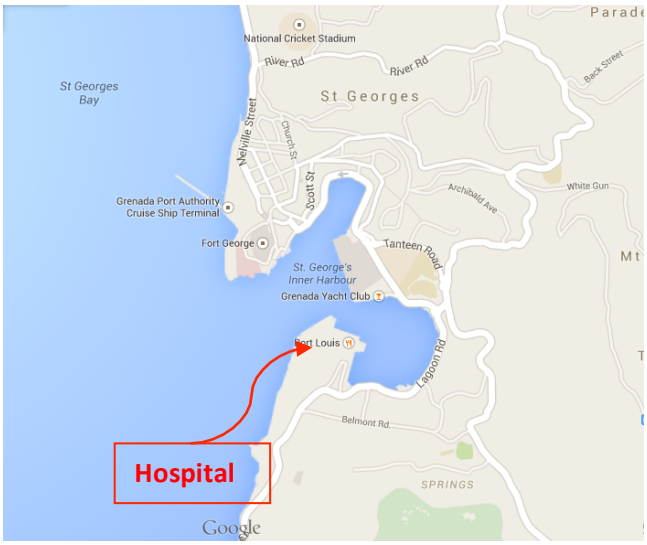

Figure 4: Location of the Grenada General Hospital

The General Hospital serves as the operational headquarters for medical facilities throughout the country. The facility has 198 beds and offers a wide variety of in-patient and out-patient medical services and also boasts a private ward of air conditioned rooms. The General Hospital provides a comprehensive list of health services including general surgery, gynecology, physio-therapy and ophthalmology.

The Hospital Safety Index (HSI) was applied to the facility in 2008and it noted vulnerabilities to earthquakes, volcanic eruptions and landslides to which the entire island is susceptible. The hospital's close proximity to the coastline makes its vulnerability to tsunamis and storm surges even more significant.

Princess Alice Hospital

Princess Alice Hospital is located in the north eastern portion of the island in the parish of Saint Andrew and is the second largest hospital on the island. The hospital was commissioned by Princess Alice on March 4th 1950. The facility serves a population of 27,000 to 30,000 people in Saint Andrew and also that of its surrounding parishes namely Saint Patrick, Saint John and Saint David to a lesser extent. Hurricane Ivan significantly damaged the facility's roof and reduced its bed capacity from 67 – 19. Patients at the facility were either discharged or transferred to the General Hospital. The hospital remained non-functional for several weeks after Ivan. Following extensive repairs, the hospital resumed normal activities.

Figure 5: Princess Alice Hospital

The facility is comprised of one long building which houses the wards and a smaller administrative building. The roofs of both buildings are wood–framed gable with galvanize sheeting. A small portion of the roof on the main building is concrete. The Hospital Safety Index (HSI) was applied to the facility in 2009 and its score merited its inclusion in this project. The facility has the same level of vulnerability to natural hazards such as earthquakes, hurricanes and volcanic eruptions as all of Grenada. As the facility is located inland, vulnerability to tsunamis and storm surges is non-existent. Additionally, as the area of the hospital is flat, landslide exposure is low.

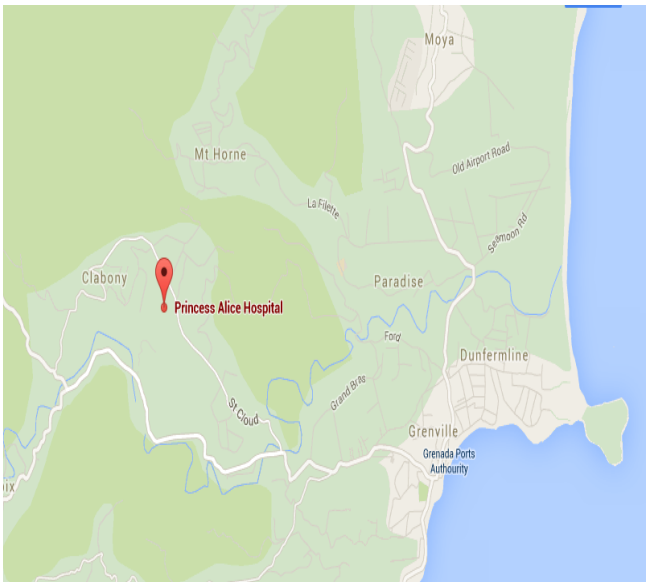

Figure 6: Location of Princess Alice Hospital

Based on the HSI, non-structural safety issues facing the facility related to the back-up generator having to be manually switched on and off, potable water storage, items such as medical gas cylinders and office furnishing and equipment not being properly anchored, air conditioning units not being properly secured,

and windows and doors not being secured properly or shuttered. Functional safety issues identified related to the facility not having an updated disaster plan and the functions, location of and equipment available to the Emergency Operation Centre (EOC).

Interventions/Retrofit works (General Hospital and Princess Alice Hospital)

The DiPECHO project has also facilitated some functional improvements to the General Hospital and the Princess Alice Hospital with the establishment of a Hospital Disaster Committee and the development of Hospital Disaster Plans focusing on fire prevention, suppression and evacuation. Plans to guide improvements at both facilities were also developed. Works, guided by the Safety Improvement Plans and supported by the DIPECHO project at the General Hospital include improving electrical capacity, provision of an oxygen plant, improvement in emergency operational capacity as well as enhanced fire response capabilities. Developing fire prevention and suppression is of great importance to health facilities given the poor development of general fire services in Grenada. Functional improvements at the Princess Alice Hospital focused on properly securing shelving for pharmaceuticals and increasing the potable water storage capacity. Additionally, the facility now has access to medical gases with the installation of an oxygen plant at the General Hospital.

Although additional works are needed in both facilities, there is a strong partnership between PAHO and the Ministry of Health with the general consensus being to ensure that the interventions outlined in the Safety Improvement Plans are fully addressed. This is an important step in ensuring that the desired safety levels are met and that there is local commitment towards the upkeep, maintenance and continued improvement of healthcare facilities in Grenada. The Government of Grenada has committed to ensuring that additional improvement works are carried out at both hospitals. These are being financed through local revenue and the works are being guided by the Safety Improvement Plans and verified by technical expertise provided by PAHO.

SUCCESS AND CHALLENGES

The flash flood event of December 2013 severely affected Saint Lucia, particularly the Soufriere Hospital and surrounding areas, resulting in attention and resources, monetary and human, being diverted to response and recovery and away from the PAHO-DiPECHO project. Moreover, the outbreak of Chikungunya and the preparedness on Ebola Virus Disease also became top priorities for the health authorities. Consequently, the project timeline and budget were impacted.

However, there were evident successes which served to establish a strong foundation on which improvement works and maintenance activities can be based, monitored and assessed. The PAHO-DIPECHO project resulted in the formation of National Hospital Safety Committees which in the absence of a formal safe hospital programmes is a step in the right direction. The development of national Safe Hospital Plans and the need for technical support in this regard was identified as a priority during committee meetings. As a result, detailed Safety Improvement Plans for the identified health facilities in Saint Lucia and Grenada were developed.

The DIPECHO project has allowed for the strengthening of relationships between PAHO and the Ministries of Health in the region. As PAHO continues its efforts to make healthcare in the region safer and more resilient, such relationships will be important.

The application of the HSI and subsequent development of Safety Improvement Plans will allow monies to be directed to areas of concern. Enhancements in these areas are expected to improve overall safety of the health facilities. In addition, the project supported the development of a Hospital Fire Prevention and Evacuation Guide and the development of fire response plans for the Soufriere Hospital which will allow for improved capacity to respond to fire related hazards.

Hospitals in the Caribbean continue to face high staff turnover which impacts on the sustainability of many project activities. Oftentimes, persons trained in the application of the HSI and Ministry of Health administrators would leave their posts or be transferred to different ministries. This creates the need for repetitive training and orientation programmes as well as provisions for new persons to quickly familiarise themselves with aspects of ongoing projects. Moreover, continued collaboration by other agencies become a challenge as new staff takes time to understand and get fully involved in project activities.

One of the most significant challenges for the MOH was in the procurement process. Many of the items were not available locally and had to be sourced overseas. In addition, payments were late in coming and the procurement process was lengthy and unsupportive of the country limitations.

LESSONS LEARNT

The DIPECHO project proved essential in helping to address the safety issues observed in the health facilities selected for retrofitting. However, given the limited funding, physical improvements could not readily show any significant impact, mainly because of the extent of the works required to allow for any increase in safety levels in the selected facilities. In the case of the Soufriere Hospital in Saint Lucia, the funds may have been better used in a facility that did not have as many issues. It is therefore important that projects of this kind establish clear guidelines for the selection of appropriate facilities taking into consideration the allocated funding, the project timelines, the need for quick wins and the extent of the improvements needed/recommended. It is also important that the weighting assigned to retrofitting works be based on data available on the condition of health facilities in the Caribbean.

The methodology applied through the DIPECHO project has laid the foundation for future projects of this kind. The safety improvement plans developed were concise and well-structured and constitute a useful tool in guiding the works needed in the facilities. This is a significant output of the project that has been tested and proven to be beneficial. The improvement plans were developed based on the application of the Hospital Safety Index for small health facilities and served as a guide for the identified improvements.

Of significance is the fire and evacuation component of the project and its benefits for critical facilities. Given the lack of proper and standardised building and fire codes in the region and very limited fire response capabilities, any increase in fire prevention and suppression capabilities at healthcare facilities is crucial. Additionally, given the condition and location of many health facilities, very good evacuation plans are essential as shelter in place may not be an appropriate action.

Projects of this nature should be implemented within a longer timeframe, especially if assessment/baseline information has to be captured and analysed. This aspect is time consuming and the reports have to be reviewed and accepted by the various stakeholders. The common outcome is that there is little time remaining for procurement and installation and to see the results of the applications, within the project timeframe.

RECOMMENDATIONS

The DIPECHO project allowed for the identification of safety concerns and issues at the Soufriere Hospital in Saint Lucia and the General and Princess Alice Hospitals in Grenada. The improvement plans developed through the project are serving as an important guide for works aimed at improving the safety of healthcare facilities in both countries. Budgetary constraints are slowing the implementation of some of the works; however, progress has been made and more is expected in 2015.

There is a need to re-examine the procurement procedures and to ensure that national stakeholders are more familiar with the process and the requirements. Oftentimes, supplies needed for projects such as this

have to be procured from outside of the country or even the region and this may result in delays which in turn impact the timeframe and success of the project.

There is much more to be done at the 35 health facilities in Saint Lucia to achieve the desired outcomes of the Safe Hospitals Initiative but the groundwork has been laid. The application of the Hospital Safety Index has proven that this is a necessary step in defining priority based improvement plans, agreed to by all key stakeholders. The efforts needed to make the Soufriere Hospital safer are significant and will require a thorough structural assessment and a drainage and hydrology study.

Similarly, more work is needed at both hospitals in Grenada to improve their safety. However, the Safety Improvement Plans are available to guide future works. Moreover, the groundwork has been laid for similar safety improvement works at other healthcare facilities.