

# Overview Of The Dominican Red Cross Emergency And Relief Operations Following Hurricane Georges

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## Abstract

On September 22nd of 1998 the Dominican Republic was devastated by Hurricane Georges. Winds reaching more than 110 miles per hour, and an aftermath that left 283 dead, this natural phenomenon became one of the worst disasters in Dominican History. The Dominican Red Cross instituted an Incident Command System. A supplies management unit was incorporated into the logistics section, and a needs assessment unit was placed within the planning section. Liaison officers were deployed to work for each of the local and international agencies involved in the incident. Emergency operations included search and rescue and EMS, shelter location, damage assessment and supplies management. Health Issues encountered included direct damage to the health infrastructure, environmental health issues including, garbage disposal and drinking water control as well as epidemiological surveillance and vector control. Challenges faced were directly related to poor communication and leading agencies, agency specific challenges related to limited resources and direct institutional damage from the hurricane

## INTRODUCTION

The island of Hispaniola is the second largest island in the Caribbean. With 48,511.44 square kilometers the Dominican Republic occupies approximately two thirds of the island and shares the other third with the country of Haiti. With a population of 7,293,390 almost one third (2,677,056) live in the capital city of Santo Domingo (1). The Dominican Republic's economy is heavily dependent on sugar, tourism and recently a rapidly growing industrial component (2). The Dominican Red Cross (DRC) was founded in 1927, recognized by the International Committee for Red Cross the same year and admitted into the International Federation in 1931. The DRC has approximately 4,500 volunteer members, of whom 2,500 are men and 2,000 women. In 1998, the society had a total of 175 employees; 120 were based at headquarters and 30 in the branch offices (3).

On September 22nd of 1998 the Dominican Republic was devastated by Hurricane Georges. With winds reaching more than 110 miles per hour, and an aftermath that left 283 dead, 595 injured, 64 missing, 865,510 displaced and 400,000 homeless persons this natural phenomenon became one of the worst disasters in Dominican History. (4) Lack of activation of the national emergency plan by governmental agencies led to improper preventative measures and subsequently made both the emergency and relief operation

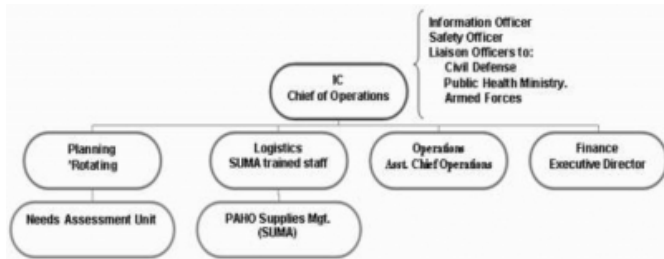
a significant challenge for all disaster agencies.

## COMMAND STRUCTURE

The Dominican Red Cross instituted an Incident Command System (ICS) (5, 6) with basic finance, logistics, operations and planning sections (Figure-1). The command structure incorporated both volunteers and paid providers in key responsibilities. The DRC Chief of Operation functioned as incident commander, the operations and finance sections were delegated to the assistant chief of operations and the executive director of the Red Cross respectively, The logistics section was staffed by supplies management trained personnel and the planning section was staffed by rotating volunteer and paid personnel as well as members of the members of the Caribbean delegation of the International Federation of Red Cross. Logistics management plays an important part in the success of any type of incident regardless of it's magnitude. (7).

**Figure 1**

Figure 1: Incident Command Structure for the Dominican Red Cross Hurricane Georges Operations



A Pan American Health Organization (PAHO) Supplies Management (SUMA) system was utilized to assist with logistics, volunteers and paid staff had trained in the this computer based logistics system since the early 1990's, and had been deployed as part of the PAHO SUMA team to several overseas disasters prior to Hurricane Georges. The incorporation of this unit allowed the use of a standardized format throughout several nation-wide distribution points. A needs assessment unit with standardized training was placed within the planning section and jointly worked with liaison officers and similar interagency counterparts including but not limited to military, Secretariat of Public Health and Office of Civil Defense officers. In terms of updating the press and citizens an information officer was staffed with multi lingual personnel they produced press releases for local and international correspondents on ongoing bases throughout the incident. These press releases were initially updated every four hours and subsequently on an as-needed basis. To favor good interagency coordination liaison officers were deployed to work in conjunction with each of the local and international agencies involved in the incident.

**EMERGENCY AND HEALTH OPERATIONS**

Emergency operations included initial search and rescue of displaced and stranded families and individuals as well as emergency medical care to sick and injured victims. Hard to reach locations made the provision of adequate emergency medical care difficult to accomplish, in many instances local community members with little to no training engaged in search and rescue efforts and provision of first aid for the injured until medical personnel arrived. Foreign medical assistance was present a few days after the incident. The Dominican Red Cross interacted closely with the New York Office for Emergency management (OEM) Urban Search and Rescue (USAR) Task Force one, through this collaboration, surgical and pediatric services of an affected hospital in the east coast were temporarily re-instated, and several co jointed search and rescue and damage assessment

missions were undertaken. Epidemiology and disaster experts sent by the French government also assisted in the relief efforts.

Damage assessment and needs analysis operations were performed on regular basis throughout emergency, relief and recovery stages of the incident (8). The objective of needs assessment was to mobilize funds, collect the necessary materials and supplies to assist disaster-affected populations, ensure rapid re-habilitation of basic services, and plan future action (9, 10).

Health Issues encountered included direct damage to the health infrastructure (Table-1), environmental health issues including, garbage disposal and drinking water control as well as epidemiological surveillance and vector control. A total of 85,420 victims were affected by this incident, the majority (41 816) inhabited the southern coast of the country (table-2). The major health issues encountered in shelters within the first three weeks of the incident were: diarrhea (902 cases), acute respiratory infections (355 cases), conjunctivitis (350 cases) and fever (350 cases) (table-3) (4, 11).

**Figure 2**

Table 1: Health Installations Affected by Province (Source: Panamerican Health Organization)

| Province               | Number of buildings |
|------------------------|---------------------|
| Azúa                   | 7                   |
| Barahona-Bahoruco      | 6                   |
| Distrito Nacional      | 13                  |
| Duarte-Independencia   | 2                   |
| El Seibo               | 4                   |
| Hato Mayor             | 3                   |
| La Altagracia          | 10                  |
| La Romana              | 7                   |
| La Vega                | 5                   |
| Monseñor Nouel         | 4                   |
| Monte Plata            | 5                   |
| San Cristóbal          | 2                   |
| San Juan de la Maguana | 6                   |
| San Pedro de Macorís   | 9                   |
| Sánchez Ramírez        | 4                   |
| <b>Total</b>           | <b>87</b>           |

**Figure 3**

Table 2: Regional distribution of victims of Hurricane Georges (SOURCE: Dominican National Armed Forces Secretariat 7-X-1998)

| Region            | Deaths     | Injured    | Missing   | Sheltered     |
|-------------------|------------|------------|-----------|---------------|
| National District | 20         | 0          | 0         | 11 853        |
| East              | 31         | 491        | 5         | 16 982        |
| South             | 202        | 93         | 53        | 41 816        |
| Central           | 30         | 11         | 6         | 14 769        |
| <b>Total</b>      | <b>283</b> | <b>595</b> | <b>64</b> | <b>85 420</b> |

**Figure 4**

Table 3: Health Issues encountered in shelters after hurricane Georges, From September 25 to October 1. (Source: Pan-American Health Organization \*Dermatitis, Burns, Injuries, Gastroenteritis and Tonsillitis)

| Illness                     | National District | Azúa | Barahona | San Juan de la Maguana | La Romana | Hato Mayor | Total |
|-----------------------------|-------------------|------|----------|------------------------|-----------|------------|-------|
| Acute Respiratory Infection | 79                | 40   | 241      |                        | 94        |            | 355   |
| Conjunctivitis              | 119               | 92   | 102      |                        | 5         | 37         | 350   |
| Fever                       | 118               | 27   | 2        | 167                    |           | 36         | 350   |
| Diarhea                     | 286               | 77   | 102      | 241                    | 48        | 148        | 962   |
| Dengue                      |                   |      |          |                        |           |            |       |
| Vomiting                    |                   |      |          |                        |           |            |       |
| Other*                      |                   |      | 11       |                        |           |            | 11    |

### SUPPLIES MANAGEMENT (SUMA) AND HURRICANE GEORGES

The Pan-American health organization Supplies Management System, (12) was created as a standardized tool to assist and improve the management of supplies and recourses arriving both at the local and international level to an area or country affected by a disaster. For the first time in the Dominican Republic SUMA was implemented in a real disaster situation.

With the aid of PAHO on September 23rd a SUMA central module version 5.1 was installed at the headquarters of the Dominican Secretariat of the Armed Forces, were the national center of operation was located. The Dominican Red Cross provided personnel with extensive hands on experience in supplies management and PAHO SUMA as well as provided several physical locations for SUMA

distribution deposits.

### CHALLENGES FACED

The principal pre-event challenges faced were directly related to inadequate communication and notification on behalf of the National Institute of Meteorology and other key government agencies leading to lack of activation of the national emergency plan and improper preventative measures including shelter detection and activation. Agency specific challenges included the mobilization of more than 3,350 volunteers, transportation issues, communication deficiencies associated to direct system damage, logistic challenges associated with the interaction of numerous national and international agencies and the fact that volunteer personnel with key tasks had to be replaced once needed in their non-volunteer duties.

### CONCLUSION

Hurricane Georges constituted one of the major disasters in Dominican history. The Dominican Red Cross played an important roll in the management of this devastating incident. Innovative disaster management methods were implemented by the DRC allowing better organization, resource allocation and subsequently better results.

Post event analysis was utilized to locate agency specific and country-wide deficiencies. With the help of the local government and several international development agencies significant funding has been allocated to the development of a stronger disaster management infrastructure with the hopes of reducing the burden of any future naturally occurring or man made disastrous event.

### References

1. Oficina Nacional de Estadísticas (ONE) República Dominicana. Población estimada de 1999-2000 Según Provincias y Municipios. Retrieved July 15th 2001 from <http://www.one.gov.do>
2. Pan American Health Organization. Basic Country Health Profiles for the Americas Dominican Republic Summaries, 1999. Retrieved July 15th 2000 from <http://www.paho.org/English/SHA/prfldor.htm>
3. Hurricane Georges, Red Cross response, International Federation of Red Cross (1999).
4. Evaluation of preparedness and response to hurricanes Georges and Mitch: conclusions and recommendations. 16-19 February 1999, Santo Domingo, Dominican Republic Pan American Health Organization/World Health Organization. *Prehospital Disaster Med.* 1999 Apr-Jun; 14(2):53-65.
5. Maniscalco PM, Christen HT. EMS incident management: creating organization out of chaos. *Emerg Med Serv.* 1998 May; 27(5):55-9.
6. Huser TJ. Implementing the incident command system in the healthcare setting. *1997-98 Winter; 14(1):48-54.*
7. 1997-98 Winter; 14(1):48-54.
8. Maniscalco PM, Christen HT. EMS incident management: emergency medical logistics. *Emerg Med Serv.* 1999 Jan; 28(1):49-52.
9. From the Centers for Disease Control and Prevention. Needs assessment following hurricane Georges--Dominican Republic, 1998. *JAMA.* 1999 Mar 10;281(10):890-1.
10. Needs assessment following hurricane Georges--Dominican Republic, 1998. *MMWR Morb Mortal Wkly Rep.* 1999 Feb 12; 48(5):93-5.
11. Malilay J. Public health assessments in disaster settings: recommendations for a multidisciplinary approach. *Prehospital Disaster Med.* 2000 Oct-Dec;15(4):167-72.
12. From the Centers for Disease Control and Prevention. Deaths associated with Hurricane Georges--Puerto Rico, September 1998. *JAMA.* 1998 Nov 25; 280(20):1736-7.
13. SUMA: Humanitarian Supplies Management System. Retrieved March 8th 2002 from <http://www.disaster.info.desastres.net/SUMA/eng/about.htm>

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