Earthquake in Haiti—One Year Later

PAHO/WHO Report on the Health Situation

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Situation Overview

One year after the 12 January earthquake struck Haiti, PAHO/WHO continues to support the response through initiatives aimed at rebuilding a devastated health system and improving the health of the Haitian population. The human impact of the 7.0 magnitude earthquake had an unimaginable impact in a country marked by a high incidence of poverty. Prior to the earthquake, around 67% of the population was living on less than US$ 2 a day. An estimated 220,000 people lost their lives and over 300,000 were injured. Roughly 2.8 million people were affected and nearly 1.5 million found themselves without a home. A year later, one million people remain in temporary settlement sites throughout Port-au-Prince and other affected areas.

In the immediate aftermath of the earthquake, a complex humanitarian response was launched to save lives and assist the affected population. Four days after the disaster, PAHO/WHO began holding daily coordinating meetings as Health Cluster lead. Hundreds of NGOs and bi-lateral agencies offered support to the Government of Haiti – pouring human and material resources into the country. Ensuring the intentions of partners were appropriately aligned with the priorities of Haiti's Ministry of Health and Population (MSPP) was a key function of the Health Cluster in the initial weeks following the earthquake. The Cluster was the sole mechanism by which priorities could be outlined with MSPP and synchronized among implementing partners.

In the months that followed the earthquake, far reaching interventions saved lives and reduced the health consequences of the disaster. Key accomplishments include:

- Rapid establishment of 17 field hospitals in the most devastated areas which provided emergency medical care to thousands of patients
- Uninterrupted management of the cold chain
- Distribution of 345,000 boxes of emergency medical supplies between January and March through PROMESS, the medical warehouse managed by PAHO/WHO
- Coordination by the PAHO/WHO Health Cluster of over 400 health partners in the four months following the earthquake
- Implementation of the first phase of the PAHO/WHO, UNICEF and MSPP's post-disaster vaccination program, resulting in the delivery of over 900,000 vaccine doses to the most vulnerable children and adults
- Establishment of three distinct disease surveillance systems to track illness, share information, and alert personnel to emergency situations
- Comprehensive mapping of all health facilities in Haiti, providing the foundation for a referral system
- Coordination of the response to the cholera outbreak, and support to CTCs (Cholera Treatment Centers) and CTUs (Cholera Treatment Units)
- Provision of essential medicines and medical equipment for the treatment of cholera patients
- Organization and management of teams to investigate and control cholera outbreaks in all 10 Departments

Relief and early recovery actions have been complicated by severe weather, a cholera epidemic, and civil unrest. As efforts continue in 2011, PAHO/WHO remains committed to ensuring greater access to health care for the Haitian population and building a decentralized system for health service delivery.

Health Cluster Coordination

In Haiti, the Cluster approach improved coordination and cooperation among response actors using widely-accepted humanitarian principles. The Cluster facilitated joint strategic planning and established a clear system of leadership and accountability under the overall guidance of the humanitarian coordinator. A major success was ensuring that the international response was appropriately aligned with national structures.

In the immediate aftermath of the earthquake, PAHO/WHO was designated Health Cluster lead in Haiti. Early outcomes included: daily coordination meetings (co-chaired with the MSPP); incorporating the MSPP into health relief efforts; coordinating assessment missions, organizing and managing medical supply distribution from PROMESS (the PAHO-managed warehouse for essential medicines in Haiti); contributing expertise to epidemiological monitoring sites; helping distribute weekly epidemiology bulletin reports; contributing to the immunization campaign; and helping to organize and coordinate over 400 NGOs who were working in the health sector, many of whom had no experience with Haiti, disasters, or the Health Cluster system.

Beyond daily cluster meetings addressing information needs of partners, a small group composed of health NGOs committed to a long-term presence in Haiti was established to steer policy, procure supplies, communicate needs to the Ministry, and solve emerging problems.

Seven sub-clusters were formed, led, and coordinated by the Health Cluster. These sub-clusters included: mobile clinics, hospitals, disability and rehabilitation, health information, disease surveillance, reproductive health, and mental health and psychosocial support. The creation and coordination of these groups ensured that post-disaster interventions were efficient and targeted.

Recognizing that relief operations extended far beyond Port-au-Prince, PAHO/WHO, with support from the Ministry of Health and Population, opened a number of field offices to establish sub-national health clusters. These sites include Leogane, Jacmel, Cap-Haitien/Port-de-Paix, and Jimani. The national and sub-national clusters coordinated treatment of the injured and affected, evaluated short and medium term needs, and mapped capacity of health sector activities.

The Health Cluster worked with NGOs and the Direction de la Protection Civil (DPC) throughout the summer to prepare for hurricane season. Two events—a strong storm on September 24 and Hurricane Tomas in early November—put preparedness plans to the test. The prepositioning of supplies among NGOs, as well as the participation of Cluster leadership at the UN Emergency Operations Center, ensured assessments were quickly undertaken and health services were provided to affected people.

In late October, when the first cases of cholera were reported in Artibonite, the Health Cluster again played an essential role in the coordination and leadership of health response actions. The Cluster reacted quickly with the Ministry of Health and Population and developed several important resources for response. A website was populated with relevant information on cholera treatment prevention activities and protocols for treatment. A master list of Cholera Treatment Centers (CTC), Cholera Treatment Units (CTU), and Oral Rehydration Points (ORP) was developed, circulated, and updated daily by the Cluster. The CTC/CTU/ORP list—which includes GPS coordinates—has been essential for coordination and referral efforts.

The Cluster expanded its presence to all 10 departments in Haiti (with semi-permanent presence in eight departments) following the outbreak of cholera cases, and coordination at the national and local level continues through this initiative. Department level coordination allows for a rapid and agile response to existing and emerging areas of activity.

The Cluster ensured that issues related to the management of dead bodies were addressed by partnering with NGOs and the Government of Haiti. Finally, the Cluster helped develop a national strategy for the distribution of essential medicines and supplies in all 10 Departments by working with implementing partners, including other UN Agencies, and the Government of Haiti.

Outbreak Control and Disease Surveillance

Following the earthquake, PAHO/WHO identified the need to support Ministry of Health and Population (MSPP) efforts in epidemiological surveillance, disease outbreak, and control of any communicable disease threat.

A special focus was placed on the 1.5 million people living in IDP camps. A disease surveillance program was launched that applied lessons learned during previous disasters. In the summer of 2008, MSPP and PAHO developed a standardized reporting form for surveillance during the response to Hurricane Gustav. After the earthquake, the form was amended to include a total of 25 conditions (including symptoms, suspected infectious diseases, acute injuries, and chronic conditions). The revised forms were distributed to fifty-one hospitals and health facilities affiliated with the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). These sites became the post-disaster National Sentinel Site Surveillance (NSSS) System and were asked to report daily counts during the first three months of response.

In addition, a system for tracking illnesses and sharing information outside of the NSSS needed to be developed. The Ministry of Health and Population, PAHO/WHO and the CDC created an internally displaced person surveillance system (IDPSS) to monitor communicable diseases in temporary clinics serving IDPs. Leaders contacted 31 of the government-registered NGOs that were serving the largest camps and planning to provide long-term health services and asked them to voluntarily participate in the IDPSS program. Nineteen priority conditions were collected in a reporting form: six requiring immediate public health notifications; an additional ten suspected communicable diseases with outbreak potential; and three programmatic indicators. This system requires regular collection of data from the field using vehicles, motorcycles, and email.

An important component was to support the diagnostic capacities of the MSPP to quickly identify communicable disease threats and to be able to respond in a timely manner by facilitating access to health care services. The developed capacity in infrastructure in lab testing and outbreak response. A Health Situation Room where relevant decision makers and experts could gather to make decisions further supported the plan. Finally, the last component related to disease outbreak prevention in the IDP settlements by developing and disseminating case definition materials for diagnosis and by training. This was designed to help build capacity in the ministry and camps themselves.

The system of disease surveillance and outbreak response was reinforced in response to the cholera outbreak during late October. PAHO/WHO and the Ministry of Health and Population developed a new emergency alert system that worked to identify emerging "hot spots" of cholera outbreaks. An emergency number and email were established with guidelines for health partners on when to notify PAHO/WHO and MSPP of a suspicious rise in cases.

When PAHO/WHO was notified by NGOs or health officials of a "hot spot" in a commune or department, an outbreak response team was sent to investigate and take action. In the first two months of this system, PAHO/WHO has responded to over 200 emergency alerts.

Haiti/Dominican Republic Border Activities

Along the Haiti/Dominican Republic border, progress has been made, but the situation remains fragile as the cholera epidemic threatens a population vulnerable to disease outbreak. PAHO/WHO has worked in the area to strengthen health services, support training and nutrition, and build water and sanitation capacity since the earthquake. The situation of acute poverty, large incidence of communicable diseases, malnutrition and lack of basic services prevailing in the border towns before the disaster was exacerbated by the presence of displaced persons who increased demand for such services including health care.

Since July, the Expanded Program on Immunization (EPI), in its elimination efforts of measles, rubella and polio, concluded catching up exercises in seven of nine provinces along the extended border, as well as rapid verification monitoring through home visits. This provided coverage to 95% or more in those provinces. All border provinces have received two or more visits from the EPI consultants and have received training in the use of new indicators for monitoring the immunization management processes such as dropout rate, access rate, minimum coverage and booster coverage.

New documents concerning micro planning and cold chain were designed as well as a proposal for a Knowledge, Attitude and Practice (KAP) study on immunization. A social communication specialist has been working on an Information, Communication and Education plan for immunization. A plan for doctors, nurses, nutritionists, dietitians and administrative personal in the use of those norms has been developed and implemented, as well as a new protocol for the management of malnourished children.

Nine national facilitators received training in the organization of hospital food and nutrition services. They in turn, trained 150 persons in nine hospitals in the five border provinces. The situational analysis of those services was completed as well as a survey on the nutritional status of newborns in those same nine and in one regional hospital.

Finally, PAHO/WHO is improving water and sanitation and biosafety conditions in the selected hospitals in order to strengthen infection prevention. Twenty hospitals at the border are involved: three regional, seven provincial (level 2) hospitals and 10 municipal (level 3) hospitals. Of those 20, thirteen have received the following interventions:

- Improvement of water supply with the objective to have a 24 hour non-stop supply through the installation of equipment such as water tanks, water pumps, change in tubing, among others. These hospitals did not have continuous water supply before the intervention.
- Improvement of water quality through water chlorination and the implementation of a surveillance system of water quality.
- Survey with recommendations to improve onsite sewage treatment/disposal.
- Improvements in the management of hospital waste with waste segregation (infectious and common waste), internal transportation routes and outside storage.

Availability of Drugs and Medical Supplies

The PROMESS medical warehouse, established in 1992 to ensure access to quality medicines and supplies, has played a vital role in the earthquake response. Overseen by a management committee led by the Haitian Minister of Health and managed by PAHO/WHO, PROMESS has served as the main storage and distribution center for medicines and supplies that were already in-country as well as those donated as part of the relief effort. In the aftermath of the earthquake, PROMESS made drugs and medical supplies available to all public health facilities and national and international NGOs that were providing free health services to the affected population.

Several days after the earthquake, the U.S. Army offered to support PROMESS in the distribution of drugs and supplies. The collaboration revolved around three areas:

- The U.S. Army provided 25 medical logisticians and pharmacists who, for several weeks, worked throughout the night to update the inventory of PROMESS.
- Through USAID, PROMESS received help to organize more effectively the supply chain management of medical items to be able to address the growing requests for drugs and supplies with the speed that the emergency required.
- U.S. forces also provided engineering support to clear the rubble around the PROMESS facilities to create space for storage of containers. In addition, they provided 24/7 security for the premises for over a month, until new walls could be erected.

In the immediate aftermath of the earthquake, PROMESS saw an average of 30-32 clients per day, such as public hospitals and international and local NGOs. During the first 45 days, PROMESS distributed more than 345,000 boxes of essential medicines and supplies, including antibiotics; vaccines; drugs for mental health conditions; drugs for treatment of TB, diabetes and malaria; and anesthetics.

In early April, MSPP extended free access to medicines until 12 July 2010. Currently, PROMESS continues to partner with MSPP for the distribution of health packages to all mobile clinics, public hospitals and NGOs. The following packages are being distributed to meet the health needs of the Haitian population:

1. **Basic Units** – Contains 24 boxes of supplies, which are packaged with medicines, IV fluids, renewable supplies, medical instruments, and clinical guidelines/diagnostics and treatment manuals. The Units can care for 1,000 people for three months.

2. **Supplementary Units** – Contains medical devices, essential medicines and equipment for a population of 10,000 for a period of three months.
3. **PROMESS Kit** – Contains donated supplies tailored to meet the needs of displaced populations. This kit is assembled by PROMESS in the Port-au-Prince warehouse.
4. **Mobile Clinic Kits** – Contains one Basic Unit and one PROMESS Kit.
5. **Emergency Health Kits** – Contains 10 basic Units and one supplementary Unit.
6. **Reproductive Health Kits** – Contains condoms, obstetric supplies, and Sexually Transmitted Infection supplies.

In March, 100 mobile clinic kits were distributed in all priority areas. By the summer, all hospitals had received Basic Units required to meet the population demand.

In late October, PROMESS was the leader in the provision of medicines and supplies to address the emergency cholera outbreak. Several large scale medical supply drops have been organized through PROMESS. For example, between November 19 and November 22, PAHO/WHO, in coordination with the MSPP and WFP, distributed 87 tons of essential medicines and supplies. This operation, which included all departments (with the exception of West), replenished medicines in areas already affected and prepositioned supplies for treatment of roughly 30% of the potential caseload over the coming months. For the West Department, medical supplies were distributed to 23 hospitals and health centers in metropolitan Port-au-Prince. Since November, over 100 tons of new medical supplies for cholera response have been distributed to all 10 Departments through PROMESS, WFP and MSPP.

Restoration of Basic Health Services

The earthquake unleashed a catastrophic toll on health institutions. Eight hospitals were totally destroyed, and 22 seriously damaged in the three departments most affected by the earthquake (West, Nippes, South-East). In the Action Plan for National Recovery and Development of Haiti, the Government underlines the importance of rebuilding 30 of the existing 49 hospitals and related training structures in the three departments most heavily affected by the earthquake. Humanitarian and health partners have worked hard to ensure basic services are provided through field hospitals, mobile health clinics, and the creation of referral networks to functioning hospitals. The administrative infrastructure for the country was not spared, with the MSPP offices destroyed—causing the death of around 200 MSPP staff—and medical and nursing schools damaged.

One of the first activities of PAHO/WHO after the earthquake was the reactivation of the Venezuelan Humanitarian Fuel Program, aimed at allowing operation of key services at health facilities, particularly surgical units. Three deliveries were made with fuel totaling more than 50,000 liters between the end of January and March 2010.

Soon after the earthquake, PAHO/WHO took the lead of the Hospital sub-Cluster to ensure coordination of foreign medical teams that came to the country to offer services. In this context, PAHO/WHO led an evaluation related to the situation of sanitary institutions after the quake. The same action was carried out in relation to the Mobile Clinics' sub-cluster.

Regarding mobile clinics, support was provided to the health authorities for the following:

1. Defining the health package to be provided free of charge by the mobile clinics.
2. Organizing the mobile clinics' health services provision and their integration into a reference system to allow the patients to access health services at different levels of care depending on their needs.
3. Establishing an information system to record the mobile clinics' activities.
4. Coordinating integration of different players working on mobile clinics, including the Cuban Brigade.

PAHO/WHO defined the parameters that would allow for a Free of Charge Obstetric Care (SOG) for pregnant women and newborns to be revamped. The SOG was made operational again after February 2010 with a simplified activity reporting mechanism.

The SOG not only continued to provide free of charge obstetric care to pregnant women right after the earthquake, but during 2010 it expanded the content of the health package, becoming the SOG-2. Sixty three health institutions are currently providing services under the Program all over the country. As a result, the number of institutional deliveries has increased from an average of 2,953 per month in 2007 to an estimated 6,828 per month in 2010 in participating institutions.

The average rate of emergency cesarean in institutions with SOG is 10% as compared to the national estimate of 3% , while institutional maternal mortality is 120 per 100 000 births in institutions SOG as compared to the national es-

timate of 630/100.000 and the institutional neonatal mortality is between 25 and 30 per 1000 in institutions SOG, as compared to the national estimate of 32 per 1000.

The implementation of the SIG (Soins Infantiles Gratuits), which provides free care for children under five thanks to an agreement with public and private hospitals similar to that of the SOG, has also been undertken since he earthquake. The twenty seven largest hospitals in the country are currently providing services under the SIG.

Since its inception in June 2010 by the Ministry of Health, funding facilitated the training of care providers, the development of triage centers and quality care initiatives, the purchase of medication and a better organization of the pediatric services with a new focus on the population. The SIG received a large enthusiastic public acceptance. During the first three months of operation, It created a positive impact on participating institutions and the heath care providers managed this challenging task with creativity and enthusiasm. More than 15,000 children beyond the base line numbers have had the opportunity to access quality care with dignity thanks to the SIG so far.

PAHO/WHO has also been actively involved in the definition of a new contracting model for purchasing health services. The model, agreed upon with the MSPP, allows for:

1. Providing free of charge health care at the point of service.
2. Ensuring health institutions' cost recovery with no need for them to charge the patients.
3. Strengthening national health authorities' stewardship and bargaining power.
4. Integrating health providers under a single system through the provision of the same health package.

Radiology

PAHO/WHO, in cooperation with the International Atomic Energy Agency (IAEA), provided basic radiology services to hospitals inside and outside Port-au-Prince, including a donation of eight mobile X-ray machines, four automatic film developers, and related supplies, which have been delivered to strategic health facilities designated by the MSPP. Following their delivery, successful installation of digital X-ray machines, film based X-ray machines, and automatic film developers was completed.

PAHO/WHO has managed and distributed supplies for these X-ray machines such as X-ray films, developer liquids, lead aprons, protective panels, and personal dosimeters through PROMESS. Training is ongoing for personnel on proper use of the portable machines, radiation protection, storage of films and chemicals, darkroom techniques, machine maintenance, patient positioning, and use of different film screens and speeds.

Reactivation of the Health Information System

Haiti's Health Information System was disrupted by the catastrophe. MSPP lost 200 staff when its building collapsed; many health staff at hospitals and health centers were affected, and a number of them left their posts.

MSPP asked for support from PAHO/WHO and other partners including UNFPA, UNICEF, U.S. Centers for Disease Control and Prevention (CDC), and the Clinton Foundation to establish a Health Information Situation Room as the basis for a system for collecting and managing health information. The information collected has provided an overview of the needs, epidemic trends and services available to enable the MSPP to take evidence based decisions.

Since April 2010, PAHO/WHO, in cooperation with the U.S. National Library of Medicine (NLM), has been working to strengthen and build the capacities of the Haitian Government and the health sector that will permit and sustain the collection and management of disaster and health information over time. The initiative seeks to build a national disaster library focused on health information needs in emergencies. The library will identify, collect and facilitate access, exchange and dissemination of information that may help in decision-making processes aimed at reducing risks and disasters. Operational information describing the past event and its medical and public health consequences will be a focus of the collection, including needs assessments, situation reports, maps and other operational decision-making tools, scientific literature and local knowledge.

The national disaster library will build on results and achievements from NLM, PAHO/WHO and the Regional Disaster Information Center's (CRID) activities in the

Americas during the last decade, particularly the "culture" of disaster information management that has begun to develop as a result of many initiatives.

Blood Banks

The MSPP National Blood Safety Program (NBSP) was created to establish standards for safe blood transfusions, increase voluntary blood donations and facilitate access to safe blood for patients. In the past five years, blood collection rose by 250%, the number of blood units increased from 9,000 to 22,000 and voluntary blood donations went from 4.7% to 70%. The NBSP hoped to reach the goal of 100% voluntary donations by 2010, but their efforts have been seriously hampered by the earthquake's destruction of the building housing the National Center for Transfusions and the NBSP building itself. For the first eight days after the earthquake, no blood was available for transfusions. PAHO/WHO played a critical role in coordinating and distributing blood donations from other countries, and in six weeks, 2,500 units were received and distributed to hospitals in Port-au-Prince and the metropolitan area.

Specialized Health Care

Basic Package of Health Services/Mobile Health Units

A system of mobile health units was put in place to facilitate access to health care for displaced Haitians. PAHO/WHO is helping the MSPP coordinate the work of international and national agencies and NGOs that have brought in health personnel and equipment to provide primary health care services in the affected areas.

A number of international agencies continues to provide mobile health services, including the Cuban Medical Brigade, Partners in Health, Aide Médical International, Merlin, Médecins Sans Frontières, the International Federation of the Red Cross and its National Societies, and Médecins du Monde, among others.

Child and Adolescent Health

PAHO/WHO has work with the Academy of Pediatrics (AAP) in translating the Children and Disaster Manual into French and Creole. An assessment of neonatal health was conducted and a plan was produced for capacity building at the country level. Areas of action for improving child health include clinical training (including neonatal health); actions to improve family and community health; promoting key family practices and linking them to health services; expanding mobile units for health promotion and education services; and strengthening child development activities.

Nutrition

Prior to the earthquake, there were 16 NGOs working on nutrition in eight departments. The Nutrition Cluster was activated 10 days after the earthquake and PAHO/WHO and the MSPP acted as facilitators for health partners involved in nutrition. All the previous work done in 2009 served as a base and source of information to organize Cluster activities. At its peak, more than 25 NGOs were part of the Nutrition Cluster. PAHO/WHO ensures the provision of treatment and management of children hospitalized with severe acute malnutrition. This involves providing essential drugs and supplies and training. Strategies included the Coverage Nutrition Program, which helps prevent malnutrition by providing children between 6 and 59 months, as well as pregnant and breastfeeding mothers with nutritional food (energetic biscuit rich in proteins). Ready-to-use artificial milk, for children under one year old who have been left without breastfeeding as a consequence of the earthquake (orphans, traumatized mothers, etc.), was made available.

A joint agreement between MSPP/UNICEF/WFP/PAHO/WHO has been made to support adequate nutrition for breastfed babies and children. In addition, recommendations have been made on nutrition for breastfed babies and those who are HIV-positive. Finally, PAHO/WHO has partnered with the MSPP on the following initiatives:

- Training of Trainers on acute malnutrition treatment in outpatients: a total of 24 people have been trained, 18 MSPP staff in the different departments, five MSPP staff at central level and one PAHO/WHO nurse.
- Training of Trainers on acute malnutrition treatment in hospitals: a total of 25 people trained, 19 MSPP

staff in the different departments, five MSPP staff at central level and one PAHO/WHO nurse.

- Training on acute malnutrition treatment for outpatients and hospitals: a total of 43 people trained, 40 members of NGOs which are counterparts of the MSPP, two MSPP staff at central level and one PAHO/WHO nurse.
- Training on breastfeeding and use of ready-to-use artificial milk for infants. A new nutritional survey was carried out in affected areas from 24 April to the end of May, organized by UNICEF and the MSPP, with the participation of CDC, NGOs working on those areas and the collaboration of the WFP and PAHO/WHO.

Psychosocial and Mental Health Response

Since the earthquake, psychosocial interventions have been coordinated through the Cross-Cluster Working Group on Mental Health Psychosocial Support (MHPSS) headed jointly by UNICEF and IOM. At one point this working group included more than 110 organizations who provided mental health care and psychosocial support. PAHO/WHO serves as a leader in this working group and is actively partnering with the Ministry of Health to support psychosocial projects.

The earthquake has compounded pre-existing mental health problems and vulnerabilities. Despite the resilience of most people, the population has to cope with cumulative risk factors for mental health problems: exposure to severe loss and trauma, poor living conditions, basic and

unaddressed psychosocial needs, ongoing sexual and other violence, massive material and personal losses, uncertainty about future, family disruptions, and limited community involvement.

PAHO/WHO, UNICEF, and IOM have been working with MSPP to reinforce a national plan for mental health and psychosocial support. A three-month work plan was organized by the Mental Health and Psychosocial Support (MHPSS) sub-cluster in April, and was implemented over the summer by health partners.

The plan aimed to coordinate and promote the launch of the national plan, and establishes systemic relationships for interfacing with the Health, Protection, Education, Nutrition, and CCCM Clusters.

Due to the earthquake the percentage of people with a severe mental disorder (e.g. psychosis and severely disabling presentations of mood and anxiety disorders, including severe post-traumatic stress disorder) has significantly increased over and above an estimated pre-earthquake baseline of 2–3%. In addition, the percentage of people with mild or moderate mental disorders, including most presentations of mood and anxiety disorders (such as mild-moderate post-traumatic stress disorder), has substantially increased above an estimated pre-earthquake baseline of 10%, as projected by PAHO/WHO.

Since the disaster, there has been substantial demand for mental health care and psychosocial support and people have been attending mental health services (for anxiety, depression, grief process, PTSD, psychosis) at the few places where they were available and accessible. Current government mental health services in Haiti are limited to two mental hospitals located in the West Department. The Ministry of Health and Population does not have mental health units at general hospitals.

PAHO/WHO and the Ministry of Health and Population will be working to achieve the following priorities in the year ahead:

1. Provision of mental health care access at second health care and primary health care level.
2. Ensuring that general (non-specialized) health workers become skilled in basic mental health care.
3. Increasing the number of mental health staff across the country.

Control of Vaccine-Preventable Diseases

National Post-Disaster Vaccination

After the earthquake, the National Immunization Program (DPEV, from the French acronym), with support from PAHO/WHO and United Nations Children's Fund (UNICEF), developed a National Post-Disaster Vaccination Plan. The main objective of this plan was to minimize the occurrence of vaccine-preventable diseases in the aftermath of the earthquake. This plan included immediate provision of Td/TT vaccine and tetanus antitoxin to persons injured during the earthquake and those undergoing emergency surgeries, including amputations. It also included vaccination against diphtheria, tetanus (and whooping cough for children), measles and rubella, the provision of vitamin A supplements and albendazole, as follows:

- Children aged 6 weeks to 8 months – DTP.
- Children aged 9 months to 7 years – DTP, MR and vitamin A supplements.

- Persons aged 8 years and more – Td.
- All children aged >=2 years – Albendazole.

The main vaccination interventions were planned in two phases:

Phase 1. Vaccination of displaced population living in temporary settlements in disaster affected communes (second administrative level or district equivalent). These include Port-au-Prince, Petionville, Delmas (including Tabarre and Cite Soleil), and Carrefour in the Metropolitan Area; Croix de Bouquet, Léogâne, Gressier, Grand Goave and Petit Goave in the Ouest Department and Jacmel in the Sud Est Department. Even though vaccines are offered to the entire population in the camps, children have been the main focus. The target population was initially estimated at around 1.4 million people (around 250,000 children aged 6 weeks to 7 years) living in over 300 sites, using data from the Office for the Coordination of Humanitarian Affairs of the United Nations (OCHA).

The estimates by age group were done by applying the age distribution in the general population. One of the biggest challenges has been determining the target population, given the transient nature of some of the population and sites and the appearance of spontaneous new sites in several localities. By early June 2010, this phase was finished and over 900,000 persons had been vaccinated, representing around 62% of the estimated target age group in the vaccinated settlements.

Phase 2. This phase aimed to provide a similar package of interventions (OPV instead of vitamin A) to all people living in the affected areas, not only those living in settlements. This will provided a second dose of DTP/Td and MR for previously vaccinated persons and an additional opportunity for those not living in tents or those missed in Phase 1. Vaccination strategies will include fixed and mobile posts and intense social mobilization activities.

Sustainable Development and Environmental Health

Right after the earthquake in Haiti, PAHO/WHO started to develop cooperation strategies to address not only immediate emergency rescue operations and disaster relief efforts, but also long-term interventions contributing to promoting health and sustainable development. Health partners identified priority areas of concern and aligned coordination efforts around the following four areas:

1. Gender-based violence (GBV)
2. Communication for Development and Community Mobilization
3. Water and Sanitation (WASH)
4. Workers' Health

PAHO/WHO has played an instrumental role in supporting program activities related to these four areas. All activities have been carried out under the coordination of the Health Cluster taking into account the WHO mandate in WASH under the UN Humanitarian Reform. Coordination with other Clusters and subclusters has also been carried out.

Gender-Based Violence

The Health Cluster has been working during emergency response and recovery to ensure availability of clinical care for survivors of sexual violence. Procuring medicines and supplies, and ensuring health staff knows where to refer survivors for help with psychosocial, legal and other needs is a key component of this initiative. At present, the response to gender-based violence in Haiti is being coordinated through the Protection Cluster, which has a GBV

sub-cluster headed by UNFPA and UNICEF focused on protection issues.

GBV has been addressed during strategic and coordination meetings with all agencies providing health services to ensure that health provisions for survivor of sexual violence are addressed. Provision of care and referral to GBV survivors has been included in the minimum package for primary health care services, developed by the MSPP with the support of PAHO/WHO.

Communication for Development and Community Mobilization

Basic communication channels broke down during the emergency, preventing the flow of communication and information related to health services and health messages to displaced groups living in temporary shelters.

In partnership with the Collaborating Centers in the region, PAHO/WHO facilitated communication materials, relevant to the context in Haiti, that were available in French or could be adapted to Creole. PAHO/WHO also worked with UNICEF and the Department of Health Promotion and Environmental Protection from the Ministry of Health in the development of a Plan of Health Communication Interventions following the earthquake. PAHO/WHO continues to work with AMARC (World Association of Community Radios) and grassroots organizations to rebuild long-term development communication initiatives in Haiti. Youth groups in Haiti were part of the emergency response effort right after the earthquake.

Water and Sanitation

The earthquake damaged Haiti's power and water and sanitation systems, and the deterioration in quality of these vital utilities presents a major health risk. PAHO/WHO estimates diarrhea accounted for16% of the dealths in children under 5 in Haiti before the earthquake.

Priorities in the area of water and sanitation include access to safe water, sanitation (including management of medical waste) and hygiene in hospitals/health care centers, as well as access to safe water for communities (especially through coordination of water quality monitoring). In partnership with MSPP and DINEPA, a general framework of monitoring water quality has been developed.

A key objective has been to achieve proper chlorination for 50 DINEPA trucks temporarily supplying water to public facilities, and PAHO/WHO is assisting DINEPA with chlorination of water by providing HTH to water trucks at filling stations. Each day 4.2 million liters of clean water was delivered to affected communities. Efforts to recruit and train attendants at filling stations are ongoing and Technischen Hilfwerks (THW), a German NGO, is working with PAHO/WHO to conduct water analyses.

Raw water first analysis has been conducted followed by a raw water routine monitoring for main chemicals. PAHO/WHO similarly supports Haiti under the coordination of the Representative of PAHO/WHO in the Dominican Republic. Prevention of infections in hospitals at the border has been addressed, including aspects related to water and sanitation and criteria for Safe Hospitals. Major challenges remain in the area of water.

The disposal of medical waste from hospitals and health facilities poses an environmental risk that PAHO/WHO is working to mitigate. After the earthquake, overwhelmed

health facilities did not dispose of medical waste properly, which is essential to controlling the spread of diseases transmitted by rodents and mosquitoes. PAHO/WHO provided public health institutions and NGOs with 20,000 plastic bags for safe disposal of medical waste and 1,000 sharp containers for disposal of needles and other sharp items.

During the initial emergency response, PAHO/WHO paid for two pits to be dug in the Truitier Municipal Dump (TMD), one for excreta and the other for Health Care Waste. PAHO/WHO contracted, trained and vaccinated the Haitian Department of Solid Waste Management (SMCRS) agents to collect health care waste from hospitals to be transported to the pits dug at TMD.

In May, WHO/PAHO began working with the WASH Cluster, SMCRS, DINEPA, and World Vision, to coordinate plans for emergency liquid waste containment and treatment at the TMD waste disposal site in Haiti. The site only has capacity to manage solid waste, but since the earthquake, it has taken significant amounts of liquid waste from Port-au-Prince. Key objectives include preventing the spread of liquid waste and reducing risk to the local population through separation of harmful solid and liquid waste. The actions taken will directly benefit approximately 2,500 people currently living in settlement camps directly affected by the waste disposal site, as well as users of latrines in camps in Port-au-Prince.

Two settlement ponds were constructed over the summer with the capacity to hold and treat 25,000 cubic meters of sludge. 2000 meters of road and a turning circle were constructed in June and July for the efficient and safe disposal of liquid waste by waste disposal trucks. WHO/PAHO and the WASH cluster are working with the MSPP, along with THW and other partners to establish a laboratory that can test water quality.

Response to Cholera

Haiti is now facing one of the most severe outbreaks of cholera that has been seen in the last century. This outbreak is made more complex by the humanitarian situation which resulted from the earthquake. The living conditions of the population in Haiti, particularly those in displaced people's camps, make the country extremely vulnerable to cholera spread. Treating people has also challenging because health workers are inexperienced and the existing health system was weakened by the earthquake.

Since 19 October, when the first cases were confirmed, the humanitarian response has been led by the Ministry of Public Health and Populations with technical support from the Pan- American Health Organization/World Health Organization (PAHO/WHO).

The Ministry of Health's National Cholera Response plan aims to protect families at the community level; strengthen primary health centers already operating across the nation; and establish a network of CTCs and strengthen hospitals for treatment of severe cases.

Currently, cholera services are being organized at three levels: CTCs, which are large stand-alone tents with an average capacity of 100-400 beds; Cholera Treatment Units (CTUs), which are typically in or next to health facilities and have a smaller capacity than CTCs; and Oral Rehydration Points (ORPs), which treat patients with non-life-threatening conditions. CTUs are designed to allow hospitals or health centers to continue to function while providing care for cholera patients. This was a lesson learned from St. Marc where health facilities were quickly overwhelmed by cholera patients.

The PAHO/WHO-led Health Cluster holds regular meetings to coordinate cholera response operations, and a small committee of NGOs operating CTCs has been formed. The Health, WASH and Camp Coordination Management clusters developed an operational plan to ensure a predictable and coordinated response to the outbreak. This plan supports MSPP and other government ministries in carrying out the National Cholera Response Plan.

Both the Health and WASH clusters are carrying out activities in health centers (CTCs, CTUs, ORPs), as well as prevention in community settings, including in Internally Displaced Person Sites coordinated by Camp Coordination/Camp Management (CCCM) Cluster.

PAHO has also deployed eight field teams to the departments of Les Cayes, Grande Anse, Jeremie, Jacmel, Port de Paix, Nippes, Fort Liberte, Cap Haitien to cover alerts, epidemiology and Health/WASH response both at hospital and community levels. Each field team consists of a Logistician/WASH and a Medical/Epidemiologist (Nippe and Ouest that are missing the Log/WASH officer). A total of 11 international and 3 national staff are currently on the ground.

PAHO has also provided medical supplies to 15 CTCs managed by the Cuban Brigades and developed technical documents/guidelines for treatment of patients, basic kit for patients discharged, health promotion and prevention measure of cholera, kit for dead bodies management and others.

Looking Towards the Future

Going forward, the Health Sector will work to improve access to and quality of primary healthcare. The MSPP strategy for reconstruction (Plan Intérimaire du Secteur Santé) which has outlined the parameters of rebuilding the Haitian health system and addresses the following objectives: ensuring provision of health services in settlement sites; ensuring continuity of services in all structures of the Health Sector, including emerging needs; identifying affected structures and developing reconstruction plans; rehabilitating affected structures of priority; facilitating financial access to services and ways to support vulnerable groups such as pregnant women, children under five, disabled peoples, and people with psychological trauma caused by the earthquake; maintaining and reinforcing governance and capacity of the MSPP to implement essential public health functions at all levels; reinforcing the MSPP capacity for disaster response; reinforcing public hygiene and sanitation measures; and building capacity through government and non-government partnerships.

Reconstruction of damaged hospitals and development of new hospitals is an essential activity for the health sector – particularly as it relates to emergency room care. It is essential to ensure that all new health facilities and the reconstruction of the existing health structure incorporate mitigation measures to make them resistant to future events. Nine departmental hospitals have been identified to be strengthened in an effort to decentralize the health care system. Building health care capacity will be done through trainings for mid-level health professionals.

The provision of health services will become more challenging as NGOs begin to leave Haiti and funding sources are depleted. Coverage offered by mobile clinics in settlement sites will be reduced and efforts must be made to reinforce fixed health facilities to address gaps in coverage. The challenge in the coming year will be ensure that the transition from provision of humanitarian relief towards the rebuilding of a more sustainable health sector is made. This has become more complicated with the cholera outbreak, which has shifted resources from reconstruction to triaging of sick patients. In the year ahead, health partners in Haiti will need to strike a balance between addressing both immediate, and long-term needs of the country.

Contact Information
Pan American Health Organization
Emergency Operations Center, Washington DC
www.paho.org/disasters
eoc@paho.org