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Executive Summary

Over the last ten years, the World Health Organization (WHO) and the Pan American Health Organization (PAHO) have warned about the risk of an influenza epidemic of great magnitude caused by a new virus. This came to the forefront during the SARS outbreak in 2003. The public has been aware of this potential risk, and thus, to varying degrees, countries have been taking steps to prepare for such an emergency. For example, the Caribbean has been working to build national capacity to detect and respond to outbreaks, and within the past year, a Municipal Toolkit for Leadership in a Pandemic in the Caribbean was launched containing guidelines and training materials to respond to a pandemic.

However, in April 2009, the identification of a new virus in California that later spread throughout Latin America marked the beginning of such a pandemic, generating parallel crises. The first crisis, characterized by the fear that flowed throughout the population, required immediate and effective response by governments, health authorities, communication experts and the media. The second was related to the management of the disease, including decreasing the spread, diagnosis and the treatment of patients, as well as logistics related to the distribution of medicines, supplies and human resources.

PAHO/WHO responded rapidly to the crisis generated by the disease, which soon affected all Member States over a short period of time, and supported health and other government authorities to intensify preparedness activities, create strategies for coping with virus and coordinate all sectors and international actors involved in the response. Due to the novelty of the pandemic influenza (H1N1) 2009, measures to combat the virus had to adapt to evolving knowledge and required the collaboration of a wide range of experts, including specialists in epidemiology, communication, disaster management, logistics among others. The major lines of action were:

- Emergency response
  - Mobilization of emergency health response teams
  - Prepositioning of supplies
- Outbreak investigation and surveillance
  - Strengthen regional capacity in event detection and confirmation
  - Management of data and production of reports
- Laboratory strengthening
  - Training of laboratory staff on new techniques to detect the virus
  - Purchase and distribution of diagnostic kits as well as lab equipment and reagents
- Immunization
  - Assist with vaccine procurement and strengthen vaccination against seasonal influenza
  - Prepare countries for the introduction and application of the pandemic (H1N1) 2009 vaccine
- Health services
  - Adapt and distribute treatment protocols
  - Create and implement plans to meet the demand in hospitals
Health promotion and communication

- Strengthening country capacity for developing and delivering risk-reduction messages
- Disseminate information to general public regarding disease prevention, early identification of symptoms and personal measures to limit the spread of infection

Coordination and logistics

- Operation of the PAHO Emergency Operations Center (HQ) to collaborate with Ministries of Health and other institutions
- Support the deployment of telecommunication, protection, and other supplies

As this public health emergency was unique for the Americas, the Organization commissioned an independent evaluation team to examine the overall response to the crisis and capacity to deliver emergency assistance. Some of the conclusions made after visiting nine countries are as follows:

1. PAHO’s efforts to promote the development of National Pandemic Preparedness Plans in the Ministry of Health were regarded as effective by national authorities and partners as it was an element that increased the country’s capacity to respond
2. Epidemiological and laboratory expertise mobilized by PAHO was timely and extremely helpful
3. Emergency management, logistics and the rapid distribution of Tamiflu and PPE was highly appreciated and arrived quickly

Overall, PAHO’s mobilization of a large number of technical consultants, the prompt delivery of supplies and equipment and the exchange of information greatly assisted Member States. The activities carried out over the last year did not only help countries respond to the virus, but also will contribute to future preparedness efforts. These activities were made possible thanks to funding from the US Agency for International Development, Office of U.S. Foreign Disaster Assistance of (USAID/OFDA), the Spanish Agency for International Development (AECID) and the World Health Organization (WHO).
I. Introduction

On 23 April 2009, following the notification of an outbreak of a new influenza virus along with reported deaths, PAHO/WHO immediately activated its emergency response mechanisms, including the Emergency Operations Center (EOC), PAHO’s center for strategic coordination, analysis, and decision-making during an emergency or crisis.

Later named influenza A/H1N1 (and finally named pandemic (H1N1) 2009), this pandemic had a significant impact on the entire Region, as all 35 countries in the Americas reported confirmed cases and, as of October 2009, 26 countries had confirmed deaths. The H1N1 outbreak was the first global test under the International Health Regulations and required an unprecedented response from PAHO staff in all countries.

PAHO/WHO played a major role in supporting health authorities and coordinating the international response to this event. The quickly evolving nature of this new health emergency made it imperative to step up preparedness, surveillance and communication efforts in all countries throughout the Region. In order to better understand and address the emerging threat posed by the new virus, several defined strategies were needed. With support from key donors, the following lines of action were taken in order to support affected or potentially-affected countries.

II. Lines of Action

1. Organization of the response to public health emergencies

   Major Achievements

   ❑ Timely and effective deployment of technical experts as well as supplies and medicines to country offices enhanced the response to the public health emergency.

   ❑ As the situation evolved, constant coordination with ministries of health, via teleconferences and other methods, allowed for rapid sharing of information from one country to another, thus allowing countries to share lessons related to specific activities with others.

   ❑ Activation of the Emergency Operations Center at Headquarters and its continual function throughout the emergency allowed exchange of information between technical areas, within the UN System and with other essential collaborators such as the CDC.

At Country Level

PAHO/WHO has been working with countries for several years in the area of pandemic preparedness. The development of national pandemic preparedness plans for the health sector has been a catalyst for coordination, and without these activities and PAHO/WHO technical support during the response phase, member states felt they would not have responded as well to the new health emergency in April of 2009. The pandemic (H1N1) 2009 emergency required the rapid mobilization and deployment of PAHO’s human and organizational resources under highly demanding conditions with member countries doing their part to respond to the emergency. PAHO’s regional disaster offices provided key support during the emergency. For example, in Central America, lists of country needs were compiled and contingency plans became operational while PAHO/WHO briefed agencies and participated in the development of public information material. Experts were also mobilized to Mexico, the Dominican Republic, among others to assist with response and the updating of contingency plans.
Mexico had one of the Region’s better national pandemic influenza preparedness plans. PAHO/WHO provided technical support for the development, organization and execution of simulation exercises and large-scale drills involving many states and institutions. When the new influenza virus was detected and became associated with dozens of previously healthy adults in Mexico, PAHO deployed a team of experts in emergency management, epidemiological surveillance, supply management, outbreak logistics, infection control, health care, risk communications, mental health, laboratory diagnosis, and other areas. The priority was to support national authorities to cope with the crisis management aspects of a health emergency, fueled by the lack of information on the nature of the disease, its transmissibility, its lethality, specific treatment and prevention measures.

PAHO/WHO collaboration was instrumental in supporting the ministries of health (in Mexico and other countries), the social security director general, the civil protection coordinator, and other high-level authorities, including the president. PAHO also played a key role in the field coordination of the Global Outbreak Alert and Response Network (GOARN) and provided direct technical support to key Ministry of Health divisions, including epidemiology, the national public health laboratory, emergencies and disasters program, external relations, health promotion, health services, and others. Situation reports were prepared at the Ministry of Health with the technical support of experts from PAHO, U.S. Centers for Disease Control and Prevention and Health Canada.

Following the first wave of the pandemic, in cooperation with the United Nations Economic Commission for Latin America and the Caribbean (ECLAC), PAHO/WHO conducted an H1N1 socio-economic impact assessment in Mexico. The results showed that the first wave of H1N1 caused a greater economic impact in Mexico than all natural disasters in the last decade combined, and was even greater than the powerful earthquake in Mexico City in 1985.

The provision of supplies and medicines was critical during the emergency, and PAHO/WHO had a significant role in these activities. The UN Humanitarian Response Depot (UNHRD) maintains a regional warehouse in Panama, which is managed by the World Food Program (WFP), for stockpiles to be deployed in emergency situations. PAHO/WHO worked with WFP to use their hub as a staging area for the distribution of medicines and personal protection equipment (PPE). Tamiflu and PPE were received from WHO and CDC and stored in the UNHRD prior to distribution to countries in the Americas. This allowed for a timely response to contain the spread of pandemic (H1N1) 2009 and for case management. By the end of 2009, five shipments of Tamiflu were sent to 62 destinations in 34 countries (818,060 treatments) and 21,900 PPE.

Most of the earlier pandemic preparedness efforts had focused on the Caribbean and a dynamic network of national pandemic focal points already existed. PAHO organized and participated in daily briefings for Caribbean national pandemic focal points, staff from the Caribbean Epidemiology Center (CAREC), PWR focal points and other sub-regional agencies. PAHO EOC had prepositioned PPE in nearly all countries in the Americas, and on the announcement of Phase 5, a second shipment was immediately sent to the Caribbean. Extra PPEs for training and outbreak investigation and control were dispatched. The office also contributed to the revision and improvement of the National Infrastructure Protection Plan, with a focus on training and preparation of health services. In September of 2009, Caribbean countries met in Barbados to assess the implementation of plans, the response, and lessons learned since the pandemic (H1N1) 2009 virus was detected. The three-day meeting was sponsored by the Caribbean Disaster Emergency Management Agency (CDEMA), with support from the United States and Canada.
As the virus spread in South America, PAHO convened virtual meetings with countries on a regular basis to provide technical assistance. PAHO's disaster management advisor in South America was mobilized to support the emergency in Mexico, and the Ministry of Health situation room in Ecuador was strengthened. In Argentina, there was demand for services nationally and PAHO/WHO helped the provinces to organize health care, mobilize and train human resources, and get the private sector and scientific societies involved. The PAHO/WHO Office in Brazil, through an interprogrammatic working group, set up a temporary health situation room for information management and epidemiological analysis of the influenza pandemic. Information was shared with PAHO staff, the UN system, the Ministry of Health, and the general public, through traditional and social media outlets. New technical guidelines, risk communication messages and recommendations on non-pharmaceutical interventions were widely disseminated through frequent teleconferences, Internet, direct technical support and other means. All United Nations agencies also received information, recommendations and direct support from PAHO country offices to implement prevention measures as well as to resume their activities.

**At Headquarters Level**

PAHO's response to the pandemic (H1N1) 2009 virus outbreak in the Region demanded internal mobilization of human resources and expertise from all technical areas. The Organization's response to the outbreak focused on providing technical assistance for crisis management and coordination as well as surveillance and investigation of cases. PAHO/WHO provided advice on health systems and services, information management, risk communication, and logistics, and assisted in the mobilization of funds by coordinating with important external partners. The EOC remained operational 24/7 and was the point-of-contact for information and improved communication with country and field offices as well as with other regional offices. The EOC also provided logistical support to deploy technical experts to the field and to ensure timely shipment of oseltamivir antiviral (tamiflu), personal protective equipment and another supplies needed by countries to deal with the pandemic.

In addition, PAHO purchased and distributed 3.5 million doses of seasonal influenza vaccine (see section 7 for more information on the EOC).

The PAHO/WHO Disaster Task Force, a group of over 30 technical experts at headquarters, met daily to report on developments using situation reports and to hold briefings with the media and other organizations. A website portal for the pandemic (H1N1) 2009 was created to ensure that technical information could be accessed as soon as it was available.

As part of its immediate response, PAHO/WHO deployed staff from many technical areas to affected countries. The first team arrived in Mexico on 24 April, the day after notification of the outbreak. The team offered advice and assistance in disaster management, epidemiology, health services, logistics, communication, and other fields. Nearly 100 experts were deployed from the Region to Mexico, Guatemala, Honduras, Nicaragua, El Salvador, Dominican Republic, Chile, Bolivia, Ecuador, Paraguay, Argentina and Jamaica during the crisis period.
PAHO/WHO monitored laboratories in Member States and provided technical support in distribution and use of diagnostic kits and other laboratory equipment. This included coordinating shipments of specimens from national laboratories to WHO Collaborating Centers. Technical documentation and manuals were written, revised, and updated. Laboratory equipment (with information on installation) and reagents were provided to many countries, and technical guidelines, documents, and tools also were distributed to PAHO/WHO field staff who were working with national authorities. In addition, an Internet-based self-learning program on pandemic (H1N1) 2009 was developed and launched.

2. Outbreak investigation and strengthening surveillance

Through the emergency funds provided by donors, PAHO/WHO was able to provide direct technical cooperation to member countries in the areas of influenza surveillance, alert and response to public health emergencies, clinical management, human and animal interface and risk communication (section 6), as part of a coordinated response to the pandemic (H1N1) 2009.

Starting 26 April 2009, a daily meeting was established to coordinate and organize operation centers of Ministries of Health and PAHO’s Emergency Operations Center. Also, a daily meeting, under the scope of the International Health Regulations, followed the evolution of the pandemic. During the peak of the emergency, additional personnel was required to cover 24/7 shifts at the main PAHO offices in Washington DC, that helped on the gathering, classification and event follow up.

National and international professionals with diverse areas of expertise in communicable diseases and influenza were mobilized to support surveillance and investigation. Early alert and response systems have been strengthened and crisis rooms or liaison centers were implemented for information management, decision making and reporting purposes. PAHO provided timely training when required in those areas where gaps were such as in areas of surveillance, case detection and monitoring, in line with the implementation of the International Health Regulations, IHR (2005). Key equipment and laboratory supplies where procured and distributed alongside the Region.

**Major Achievements**

- Epidemiologists from nine PAHO Country Offices were trained on the Event Management System (EMS) to track various aspects related to the management of acute public health events.
- Mobilization of technical experts throughout the Region to provide technical support to the Ministry of Health to strengthen influenza surveillance and support pandemic response.
- Daily discussion on public health events of international concern (including pandemic H1N1) was conducted in order to support national risk assessment and national control measures.
- A disease specific geospatial risk profile for influenza was produced and posted on PAHO’s web site to support national risk assessments.
- Epidemiologists from six countries were trained to set up national situation rooms to monitor the pandemic (H1N1) 2009 events and to assess the public health impact of control measures that were implemented. As a result, the countries were able to produce national reports on the pandemic.
- Other events of potential regional public health importance, not associated with pandemic (H1N1) 2009 were detected and risk-assessed.
- Management and distribution of data obtained from the Member States on the situation of pandemic (H1N1) 2009 in the countries.
- From April to December 2009 a total of 81 events of international concern were detected, verified and assessed. As a consequence, alerts and technical information regarding Public Health Risks related to those events were provided to Members States. That information helped Member States to prevent or respond to similar events that may occur in their own territory.
- Production of a weekly technical report monitoring
epidemiologic and pandemic indicators.

- Integration of regional perspective in Global Consultation on the definition of Research Agenda on Pandemic Influenza.
- Provision of technical guidelines for preventing the transmission of influenza in health care settings.
- Preparation of educational and technical materials for training on influenza, its transmission and the way to prevent it.
- Translation and edition of documents aimed at prevention and infection control of influenza in health care settings.

Impact and challenges

- A continuous investment should be made in improving the speed and accuracy of outbreak verification and dissemination of information.
- Although countries have prepared national reports on pandemic (H1N1) 2009, good quality data is still limited.
- Sustainability of laboratory activities should be considered as a priority in the post pandemic phase.
- The identification of appropriate questions for research and design of studies should continue as a priority.
- A need for a weekly report produced and posted on the Web to monitor the evolution of pandemic (H1N1) 2009 in real time; dissemination of information at country level is also key.
- Initial steps were taken toward implementing integrated epidemiological and virological surveillance of influenza. More on-site support will be required to monitor and assist implementation of enhanced surveillance in Barbados, El Salvador, Honduras and Nicaragua.
- Regional consultation on the definition of research agenda on pandemic (H1N1) 2009 as a follow up to the global meeting will be replicated in the Region in June 2010.
- Gathering appropriate evidence to establish recommendations proved to be a challenge.

3. Laboratory strengthening

Upon notification of the new virus, laboratories had to meet the needs for detecting this virus as well as increase capacity in order to receive large numbers of samples. Necessary supplies to identify the new virus, including PCR equipment and reagents, were provided to countries. This along with essential training of staff on new techniques and the use of PCR machines helped improve the capacity for detecting the new virus.

Achievements

- Monitoring and support to member country laboratories for the distribution and use of diagnostic kits for pandemic (H1N1) 2009.
- Coordination of sample shipments from national laboratories to WHO Collaborating Centers.
- Development of diagnostic algorithms and technical documents to guide national influenza laboratories in the processing of respiratory samples.
- Purchase and distribution of reagents for national influenza laboratories.
- National Laboratory personnel from eight priority countries were trained on molecular techniques for diagnosing the pandemic (H1N1) 2009 virus, including RT-PCR and conventional PCR.
Purchase and installation of RT-PCR machines for Cuba and Jamaica for the diagnosis and characterization of the pandemic (H1N1) 2009 virus.

Impact and challenges

- Every country in Latin America received diagnostic kits for the pandemic (H1N1) 2009 virus.
- Every country in the Caribbean having access to a subregional laboratory trained and equipped to diagnose the pandemic (H1N1) 2009 virus.

Pandemic (H1N1) 2009 viral isolates from Latin America and the Caribbean were shipped to the WHO Collaborating Center for the monitoring of viral changes and antiviral susceptibility.

Central American and Andean countries trained on diagnosis of pandemic (H1N1) 2009 virus through molecular methods (real time RT-PCR).

Reagents provided for national influenza laboratories in the region.

- It will be a challenge to sustain the added expense of shifting routine influenza diagnosis from less expensive antigenic methods to more costly molecular techniques.
- The cost of new molecular diagnostic techniques could hinder the decentralization of influenza diagnosis from national influenza laboratories to subnational laboratories.

4. Immunization

As part of PAHO’s technical cooperation activities with the Member States in response to the pandemic (H1N1) 2009, a Regional Plan for Pandemic Influenza Vaccination was developed in May 2009. The plan had two main objectives: a) strengthen immunization against seasonal influenza in the Region, and (b) support Member Countries in their preparations to introduce the pandemic (H1N1) 2009 vaccine.

Strengthen vaccination against seasonal influenza

The relationship between immunization against seasonal and pandemic influenza is based on the WHO recommendation for the countries, found in Resolution WHA56.19 of May 2003, in which introduction of the seasonal vaccine is recommended not only to reduce the disease burden of seasonal viruses and the risk of recombinant viruses circulating, but also to boost global production capacity, which would result in a greater supply of the pandemic influenza vaccine.

By December 2008, 35 countries and territories in the Region had included the seasonal vaccine in the public sector, vaccinating a wide range of risk groups, in comparison with 13 countries in 2004. The lessons learned from vaccinating some of these risk groups can be applied to immunization against pandemic influenza.

In support of the nine countries and territories that have not yet introduced the seasonal vaccine, a vaccine-procurement project was prepared, targeting the following countries: Aruba, Bolivia, Dominica, Guyana, Haiti, St.Vincent and the Grenadines, and Suriname. Countries that have already introduced the vaccine to immunize select groups received support to expand coverage to other risk groups (such as Nicaragua, Paraguay, St. Lucia, and Turks and Caicos) (see Figure 1).

A total of approximately 1.5 million doses of seasonal vaccine were procured through purchases and donations from producers, for a total of US$3.7 million. Another US$2.1 million was spent on direct procurement of the vaccine through PAHO’s Revolving Fund.

Support for the Member States to prepare for introduction of the pandemic vaccine

As part of the Regional Plan, different activities have been carried out, based largely on the recommendations
PAHO/WHO Report on the Response to Pandemic (H1N1) 2009

Figure 1: Seasonal influenza vaccine requirements, May 2009

<table>
<thead>
<tr>
<th>Countries</th>
<th>Number of doses</th>
<th>Resources mobilized (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction of the seasonal influenza vaccine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aruba (HN)</td>
<td>65,000</td>
<td>167,500</td>
</tr>
<tr>
<td>Bolivia (HS)</td>
<td>600,000</td>
<td>1,252,000</td>
</tr>
<tr>
<td>Dominica (HN)</td>
<td>20,000</td>
<td>57,818</td>
</tr>
<tr>
<td>Guyana (HN)</td>
<td>30,000</td>
<td>95,580</td>
</tr>
<tr>
<td>Haiti (HN)</td>
<td>15,000</td>
<td>31,750</td>
</tr>
<tr>
<td>St. Vincent and the Grenadines</td>
<td>4,800</td>
<td>14,540</td>
</tr>
<tr>
<td>Suriname</td>
<td>20,000</td>
<td>63,720</td>
</tr>
<tr>
<td>Extension of vaccination to other groups</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nicaragua (HS)</td>
<td>500,000</td>
<td>1,469,700</td>
</tr>
<tr>
<td>Paraguay (HS)</td>
<td>200,000</td>
<td>483,800</td>
</tr>
<tr>
<td>St. Lucia/Turks &amp; Caicos</td>
<td>14,400</td>
<td>34,833</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,469,200</td>
<td>3,671,242</td>
</tr>
</tbody>
</table>

Two Caribbean countries are pending: St. Maarten and St. Kitts & Nevis.

Vaccine bidding through the Revolving Fund: In September 2009, PAHO held an international competitive bidding for the procurement of pandemic influenza vaccines, obtaining a proposal for approximately 200 million doses of vaccine. Pursuant to the conditions for prequalification of the vaccine and compliance with the Revolving Fund’s conditions, approximately 93 million doses have been procured to date, an amount that will help cover the immunization needs of the at risk groups in most of the countries of the Region. The window for delivery began in the second week of December 2009 and continues through June 2010.

Subregional Workshops: Three subregional workshops were held, attended by 120 people, including immunization managers and the individuals in charge of
the pandemic response, as well as national officials from 40 countries and territories in the Region. The technical guidelines were reviewed and validated during the different planning workshops. Contents were developed, with emphasis on prioritizing at-risk groups, immunization strategies and tactics, planning and micro planning, surveillance of adverse events, distribution and logistics, human resources, supervision and monitoring. A document on risk communication was also drafted to support the targeting of immunization to specific groups.

Support to countries to strengthen ESAVI (Events Supposedly Attributable to Vaccinations or Immunizations) Surveillance with NRAs and EPI (HHS-CDC): A regional workshop was held with the participation of regulatory authorities and the heads of ESAVI surveillance from the ministries of health. The workshop was held in Argentina with 40 participants from 12 countries.

Access to pandemic influenza vaccines in LAC

Countries and territories in Latin America and the Caribbean can access vaccines through several mechanisms:

1. Purchase of vaccines through PAHO’s Revolving Fund
2. Donations through WHO
3. Direct procurement (Mexico and Brazil)

As mentioned above, PAHO’s Revolving Fund held an international competitive bidding for the procurement of pandemic influenza vaccines. The procurement process began in December 2009; the purchase and delivery of 93 million doses is expected to be complete by June 2010.

WHO will donate vaccines, syringes, and biohazard boxes to 10 LAC countries in order to vaccinate 10% of the population. The selected countries (Honduras, Nicaragua, Guatemala, El Salvador, Cuba, Haiti, Suriname, Guyana, Bolivia, and Paraguay) will receive an estimated 7.5 million doses of pandemic influenza vaccine. Delivery of these vaccines and supplies will take place from January–June 2010. Countries have developed national plans to introduce the pandemic vaccine with identification of the gaps by component, including the need for financial support for local and national communication plans, as well as support for the operating costs of launching the vaccination program. To date, PAHO has received national plans from 12 countries, with an estimated budget of US$8.2 million and an approximate gap of US$4.3 million (52% of the estimated total) for the above-mentioned activities.

5. Continuity of health care

Pandemic (H1N1) 2009 appeared in the Region with signs and symptoms ranging from a mild upper respiratory infection to serious pneumonia, compromising the respiratory system thus requiring hospitalization and complex clinical care in intensive care units of tertiary level institutions.

In some countries, emergency services were overwhelmed by the epidemic, due to the increased demand from patients with respiratory symptoms (in some cases exceeding the capacity of health care facilities). The demand for hospital beds, especially from adults, also increased significantly, leading to a shortage of intensive care and general hospital beds.

Health service response measures:

- The existence of specific plans for health services helped organize and implement triage measures to reduce the patient treatment burden. These measures were more effective and efficient in cases where they had already been programmed and tested prior to the pandemic.
Several countries took steps to reduce demand for hospitalization:

- Call centers were set up to address the concerns of the public and potential patients, which helped to reduce unnecessary visits to the services and facilitated patient referral;
- Basic care units (primary care, community clinics) provided services that helped reduce congestion in hospitals;
- Family physicians were mobilized to reduce the demand for care in the hospitals. The expanded home-care system was extremely useful and efficient; it is important to provide health workers who provide home care with personal protective equipment;
- Extended service hours for the public at outpatient clinics also helped decongest hospitals;
- Isolating patients at home helped limit hospitalization to necessary cases only;
- The postponement of elective surgeries freed up beds and health care personnel in the services;
- The development of criteria to determine whether to send a patient to the hospital, intensive care, or for outpatient monitoring was necessary and relieved some of the pressure on the services.

An information system on the number and location of available hospital beds was systematically updated through a call center and a computer system. Transfer of patients between different regions and hospital facilities could be coordinated.

Setting up designated areas for patients with respiratory symptoms and strengthening care in the wards for patients with acute respiratory infections helped improve the management of the services.

In regard to health workers, it was useful to:

- Develop protocols for patient care in outpatient and hospital consultations and fine-tune them as they are put into practice;
- Keep health personnel informed by diverse means -- for example, posters, videoconferencing, educational activities for clinics, telephone communication, etc;
- Identify human resource gaps in advance to take the respective steps; suspend vacations for health personnel;
- Offer psychological counseling for health workers who fear getting infected and dying, and train them in the use of PPE and other preventive measures, such as the use of soap and disinfectants.

Visits to hospital centers were useful for evaluating and clearing up questions, managing supplies, and generally managing the crisis, especially when the IHR checklists were used.

The government’s centralization of antiviral drugs was useful, despite the workload it imposed on public services.

Provide follow-up of case contacts, especially for pregnant women.

The news media was a vigilant partner in helping monitor whether the services complied with the guidelines.

In some cases, the tactic used was to divide a hospital into two in order to designate a part for the care of patients with pandemic (H1N1) 2009 virus and prevent cross-infection.

In other cases, non-hospital spaces were set up in locations such as schools, but in the end they did not need to be used.

In some Caribbean countries, triage was organized and patients waited outside to lessen the crowding in health centers.

Within a 6-week period, PAHO was able to structure an online open source training course focused on increasing the knowledge base of primary care level personnel.

**How can the health service response be improved?**

Although health personnel were able to respond to
the pandemic, there are several areas where improvements could be made for the future. It is important to develop clinical indicators that can predict the degree of severity in each individual case, so that health workers treating patients can determine who requires more immediate or aggressive treatment. A patient’s treatment should not depend on laboratory confirmation and protocols should vary depending on different groups of patients, for example, children and pregnant women. A pediatric formula for Oseltamivir is also needed.

With respect to health workers, the personal risk was a matter that had not been addressed, and it was very important when the demand for care increased. Health personnel sometimes did not comply with the recommended prophylactic measures (hand-washing, etc.) and those trained in critical or intensive care were unable to handle the increased demand. In many cases, there was no contingency plan for absenteeism of health workers. The nature of shift work must be taken into account, since rotations during emergencies make it more difficult to share protocols, guidelines and other directives. Finally, logistical aspects such as payment for overtime or additional costs should be considered for administrative personnel who must accompany the emergency personnel.

In order to design or update plans for introducing the pandemic vaccine, three subregional workshops were held with national pandemic response coordinators and EPI managers. The first took place in Panama from 21 to 23 October 2009 for the countries of Central America, the Latin Caribbean, and Mexico; the second was held from 27 to 29 October in Peru for the South American countries; and the third, in St. Kitts & Nevis from 12 to 14 November for the non-Latin Caribbean countries. PAHO also worked to develop guidelines for public information to promote the vaccine among high-risk groups.

The participants’ comments about vaccination of health personnel included the following concerns:

- The same health personnel will have to continue their normal activities in addition to providing influenza A (H1N1) vaccination.
- It is necessary to begin identifying the financial resources available and plan for the mobilization of additional funds for influenza vaccination.
- The training activities needed to make health personnel aware of the changes in the priority groups to be vaccinated, which differ from the people usually targeted, and include the priority of the health workers themselves, who in the past have not followed the recommendations to get vaccinated against seasonal influenza.
- Clear information should be provided about the two vaccines (seasonal and H1N1), since the vaccination activities will overlap and it is necessary to avoid user confusion.
- Some participants voiced a concern that the vaccine will be manufactured too quickly and there may not be enough time to properly test its efficacy or adverse effects.

**Lessons Learned**

- There was a lack of preparedness to deal with concomitant hospital infections.
Initially, physicians were unlikely to suspect that patients had the pandemic (H1N1) 2009 virus.

In some cases, the protocol for managing patients prior to hospitalization did not work well and caused a crisis—for example, when the emergency medical technicians in ambulances did not want to treat a patient for fear of the risk of infection.

Inability to handle seriously ill patients, scarcity of beds and respirators.

The pre-identified referral centers were ignored by patients, who went directly to the hospital.

Health workers wearing personal protective equipment (PPE) frightened the population.

Undersupply of PPE and lack of training and acceptance, especially in primary health care centers. In other cases, the biosafety measures were extreme, since they had been devised for an avian influenza epidemic. There were no protocols or guidelines on what protective equipment to use or in what circumstances. Biosafety measures should include the protection of health workers and patients, and should meet with the approval of health workers’ unions.

The sale of over-the-counter antivirals could quickly lead to resistance.

In some cases, there were conflicts with the medical society about public health measures or the use of oseltamivir and its possible effect in terms of greater morbidity and mortality, which had repercussions in the news media. There was an apparent lack of dialogue between clinicians and other health professionals.

Absence of plans or guidelines for the prevention and control of infections, or failure to follow recommended infection control measures.

Basic measures such as handwashing and ventilation should be stressed, in coordination with the use of sophisticated protective equipment.

6. Health promotion, communication and advocacy

Proper communication about the risks related to H1N1 and appropriate prevention measures were essential during the emergency and following the first wave of the pandemic. Posters and other forms of media helped inform the public on how to sneeze, wash hands and what to do in case of symptoms as well as specific information for vulnerable populations and health professionals. Support was also provided on how to work with the press and provide specific and accurate messages. Different sets of risk communications materials were prepared for the countries and risk communication workshops at local level and studies on perceptions were held in Ecuador, Nicaragua and Peru. Technical assistance in risk communication was also provided to communicators of the ministries of health within the region, namely Cuba, Ecuador and others.

The topic of the pandemic (H1N1) 2009 was highlighted in several high-level meetings in 2009. PAHO participated as keynote speaker and moderator for the 137th Annual American Public Health Association (APHA) Meeting, for the panel on Pandemic (H1N1) 2009. The title of the session was: Lessons learned from collective response. In the round table, representatives from Ministries of Health of Mexico and Chile also participated as panelists sharing the experiences of two of the countries that were the most affected in the Region during 2009.

In September 2009, PAHO organized a meeting to analyze the Regional experience on the pandemic H1N1 (2009), to gather and share lessons learned from the countries’ response to the pandemic, and to generate knowledge that will help in upcoming waves of pandemics. Participants from all the countries of the Region gathered in Miami and participated in interdisciplinary working groups that discussed the topics of coordina-
tion and management, epidemiological surveillance, International Health Regulation, Health Services response, Risk communication, non-pharmacaceutical measures and immunization.

PAHO also organized two high-level meetings: the Caribbean Epidemiology Center National Epidemiologist and Laboratory Director’s meeting in Trinidad and Tobago in October 2009, and the II Meeting of Chiefs of Epidemiology in Peru in November 2009. In both meetings, the topics of International Health Regulations, sentinel surveillance for influenza and lessons learned during the early stages of the pandemic were presented. The presentations were followed by discussions, in which Member States highlighted their own challenges in either of these topics. Such activities allow sharing successful experiences and reviewing the challenges that countries face while preparing for possible future waves of the ongoing pandemic.

In order to promote transparency of information among the key players in the Region, virtual technical meetings were organized with participation of the Chief of the Health Surveillance Department (or its equivalent) in the Ministry of Health, the International Health Regulation National Focal Point and PAHO/WHO country offices. During those virtual sessions, it was presented a periodical epidemiological situation update, and each week specific topics of interest were considered, such as non-pharmacological measures, and the response of the Health Services to the pandemic. Countries also had the opportunity to update their status on the pandemic while the emergency was at its highest activity level in the Region.

It is still essential to promote the adoption of behaviors that reduce the risk of transmission of H1N1 or other viruses, especially in vulnerable groups. Activities have strengthened the grassroots response to the pandemic flu and other local public health problems by focusing on health promotion with specifically designed tools.

PAHO/WHO participated in the following activities to design health education and communication tools to streamline the response of community groups.

**Online FluCOMM course on community planning for and response to the influenza A (H1N1) 2009 pandemic**

FluCOMM was designed to improve practical skills in a format that is accessible to a wide range of key groups when deciding on the grassroots response to a pandemic or other major event. FluCOMM’s educational materials (available through PAHO’s Virtual Campus) seek to provide a prestigious platform capable of reaching major segments of the population and is flexible enough to be continually updated to follow the unpredictable course of any pandemic.

In addition to the centralized models that provide knowledge and skills to understand and communicate the recommended grassroots measures, FluCOMM contains elective modules for schools, primary healthcare teams, civil society organizations, and local governments.

**Online Spanish course for health workers on occupational health and infection control**

The online course on infection control and occupational health uses animation, interactive activities, and video demonstrations to teach the basic principles of infection control in the healthcare system, the principles of isolation, sharps management, hand hygiene, exposure to and clean-up of blood and bodily fluids, proper use of personal protective equipment, and isolation precautions. The course’s target audience includes front-line workers, public health officials, and medical/nursing/allied
health professionals, among others. The Spanish version of the online course on occupational health and infection control is a joint effort between the University of British Columbia, Vancouver Coastal Health in Canada, PAHO-HQ, PAHO-Ecuador, the Simon Bolivar Andean University, and the University of Cuenca in Ecuador.

At the country level, the partners in Ecuador are working to develop a national training program on influenza prevention and control for medical/nursing/allied health professionals. The online course, developed by PAHO and its partners, will be used as the training program for this national initiative. At the subregional level, the ministries of health of Central America have expressed an interest in using this educational tool as part of their training on influenza prevention and control in the community. At the regional level, the course will be available on the PAHO website and the Virtual Campus, and the CD will be distributed to the PAHO Representative Offices.

Say-No to Influenza

The Say-No to Influenza software was designed to disseminate messages about reducing the risk of infection and transmission of the influenza A (H1N1) virus in school environments. The animated text with illustrations and audio is designed to attract and hold the attention of students aged 8-12 and is also for teachers and educators of all levels. The Spanish version will be in an interactive format for the PAHO Internet portal, as well as YouTube and on CD. The work was done by PAHO in collaboration with the San Luis Potosí Autonomous University of Mexico.

Subregional Workshop on community planning and response measures to mitigate the influenza A (H1N1) 2009 pandemic

This intensive rapid workshop is the result of a joint effort between the CDC and PAHO to prepare trainers who can reinforce the skills of the people responsible for implementing community response measures to combat the influenza pandemic. The workshop was held in Lima, Peru in the fall of 2009 and attended by 28 participants from Ecuador, Colombia, Venezuela, Paraguay, and Peru. The workshop’s topics included comprehensive activities to deal with the pandemic at the grassroots level, with special emphasis on coordination with schools, local governments, faith-based organizations, and other civil society groups and primary healthcare teams.

Dress Sally Software

The Dress Sally software uses interactive animation to enable users to dress the character Sally with personal protective equipment in order to simulate different scenarios involving the risk of infection. The material is for health professionals at both the hospital and primary-care levels. The tool will be used in connection with other applications and courses offered by PAHO and its Collaborating Centers.

7. Planning, coordination and logistics

Due to the large scale nature and unique characteristics of the emergency, coordination and logistics were especially important throughout all response efforts. The

<table>
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<th>LSS/SUMA: Important coordination tool during the H1N1 emergency</th>
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<td>The LSS/SUMA system proved to be a valuable coordination tool for dealing with the special challenges in terms of logistics and managing drugs and vaccines for the pandemic. Several countries, including Argentina, Mexico, and Panama, used LSS/SUMA to manage stocks for vaccination campaigns and the strategic distribution of vaccines. In August, as the situation peaked, Argentina’s Ministry of Health conducted training and used the SUMA system to control inventory at the central level. The Ministry also developed plans to expand LSS/SUMA to the provinces to help with receipt, distribution, and use of vaccines.</td>
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<td>Mexico also tested the effectiveness of LSS/SUMA for this type of operation. SUMA personnel provided logistics support to manage incoming medicines and supplies. In order to increase the number of people trained to operate LSS/SUMA, the Ministry of Health coordinated training sessions in Mexico City as well as in the states of Campeche, Sinaloa, and Tamaulipas. More than 165 people from 26 states participated, including staff from a wide variety of multisectoral agencies. At warehouse site visits, recommendations were made to improve management.</td>
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<td>Mexico’s experience made it possible to customize the software by defining specific supplies needed for health care during a pandemic emergency. Although LSS/SUMA does not replace existing inventory systems, it has proved to be a valuable tool for ongoing monitoring and management of warehouses and pharmacies.</td>
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center of coordination and planning was the Emergency Operations Center (EOC) at PAHO Headquarters. The EOC enhanced communication with countries and other regional offices as well as with other agencies. It also provided logistical support to facilitate the deployment of technical experts to the field, assuring the timely delivery of shipments of TAMIFLU (Oseltamivir 75mg) and Personal Protection Equipment (PPE) as well as other supplies to countries to ensure that systems were in place to deal with the emerging outbreaks in the countries. Thanks to several years of emergency preparedness activities, which coincided with the rise of the threat of avian influenza, countries in Latin America and the Caribbean had well-developed influenza preparedness plans and these were activated.

The other major task of the EOC was information management and the rapid gathering, analysis and distribution of vital information. Demand of up-to-date details on the emergency came from within PAHO as well as outside including from various agencies as well as the media. Requests came not only through the reception of emails – EOC processed over 5,000 emails between April and June as shown in the graphic below – but also, through press briefings and teleconferences.

The EOC hosted daily meetings of the PAHO Headquarters Disaster Task Force (average participation around 25 to 35 persons representing different technical areas within PAHO) with the purpose of providing prompt coordinated support to the Country Offices in the Region affected by a major disaster. Elluminate software was used extensively to efficiently share technical information to a wide number of countries. Web conferences for the largest such virtual meeting ever held by the organization with over 80 sites taking part virtually in a meeting chaired by the Director for all country offices, Ministries of Health and HQ.

The EOC provided continuous reporting on the evolving situation and situation reports were prepared at the start of the emergency and distributed to field staff, donors, and other humanitarian organizations. A total of 18 reports were sent during the first weeks of the emergency in English, Spanish and French. A website portal for H1N1 was created to ensure that technical information was available as soon as they were obtained while the EOC Intranet site was updated with guidelines, contacts, resources, etc.

Inter-departmental coordination at HQ

In the past, most emergencies (particularly those of natural origin) were handled by PAHO’s Disaster Pro-
gram. However, the massive support needed to respond to the pandemic and the serious impact on member countries required extensive coordination among almost all areas at headquarters level. Individuals from areas such as communicable diseases, human resources, vaccines, health services, and public information worked together to provide essential materials to country staff, deploy experts, collect and provide up-to-date information to the external world and strengthen health services and laboratories.

III. Conclusion

This unique experience and the possibility of a second wave of the pandemic, led to several activities to analyze the Organization’s response to the health crisis and its capacity to deliver assistance.

At two meetings, the Organization evaluated what went well and what improvements would lead to a better emergency response. Overall, participants agreed that a variety of stakeholders must be coordinated for an effective response and that information exchange is essential via reporting, teleconferences and web-based conferencing technology sessions. At another meeting in Barbados to discuss the experience throughout the Caribbean, most countries concluded that they were somewhat prepared to respond to a potential crisis and that country-level experiences offer unique lessons on best practices. There is no one-size-fits-all approach to address the problem and policies must be tailored to match national realities.

Additionally, an external evaluation of PAHO/WHO looked at response actions and mechanisms at the country level and at headquarters. Overall conclusions were that in spite of some difficulties, member states and key stakeholders highly valued the support PAHO/WHO Country Offices provided to the ministries of health. Future actions should consider the large demands made by the press and media and prepare for surge capacity of the EOC and other areas of work. Information must be comprehensive and be coordinated and disseminated from one location in order to avoid confusion.

The massive impact of pandemic (H1N1) 2009 throughout the Region sparked a feeling of urgency and interest in the donor community and many donors provided funds to the Organization to rapidly respond to this novel influenza virus. Funding was used to response, enhance surveillance, laboratory capacity, coordination, risk communication, immunization and health services and its implementation has required close follow up over the past year. Reports have been gathered from all countries and technical areas in order to collect stories on the impact of funding and PAHO/WHO collaboration during the response to H1N1. The annex to this document contains individual country reports that provide in depth information illustrating how humanitarian funds were used to combat this public health emergency.

Lessons Learned in the Management of the Pandemic (H1N1) 2009 Emergency from a Headquarters Perspective

- Simplify PAHO’s emergency norms and procedures, including flexibility in the use of resources; ensure these procedures are widely disseminated.
- Increase the capacity of all staff at headquarters for emergency response and EOC activities.
- Designate media/public spokesperson(s) at outset of crisis, both at HQ and in affected countries; provide media and risk communication training as needed.
- Develop a system for crisis information management and designate a group leader to coordinate information and dissemination.
- Create provisions for covering regular duties of staff members assigned to the EOC during emergencies until they can resume routine responsibilities in their units as well as ensure the overall well-being of staff.
ANNEX 1

CARIBBEAN REPORTS
COMMONWEALTH OF THE BAHAMAS

IN THIS BOX, PLEASE DESCRIBE YOUR THREE MAJOR ACHIEVEMENTS/IMPACTS/ACTIVITIES

- Highlight 1 – Enhanced the capacity of the national health authorities to perform preliminary laboratory testing and diagnosis of this novel virus under conditions that are compliant with acceptable bio-safety standards.

- Highlight 2 – Strengthened the capacity of the national authorities to effectively respond to the pandemic through training of multiple health staff in H1N1 detection, management and surveillance as well as through the provision of supporting equipment for surveillance and media production.

- Highlight 3 – Increased awareness, knowledge and information in relation to H1N1 through a series of training workshops for community leaders, key stakeholders in the Uniformed Branches as well as the Education Sector, hence, expanding the knowledge base of key segments of the population and building community confidence and essential partnerships.

In three pages maximum,

- **Describe the impact of PAHO’s cooperation in the first 6 months**

The impact of PAHO’s technical cooperation during the first six months of the H1N1 pandemic was considerable and highly effective on many fronts. We provided updated and cutting edge technical information and guidance to the Ministry of Health on a number of wide-ranging issues, including the management of H1N1 outbreaks on cruise ships that called in the Bahamas. Additionally, we were able to rapidly respond to many needs of the Ministry of Health through the provision of antiviral agents, such as Tamiflu; personal protective equipment; specimen collection swabs and laboratory media, etc. The Ministry of Health was exceptionally pleased with the breadth of assistance that it received through our facilitation of their access to international experts, such as infectious disease specialists, epidemiologists, maritime experts, etc from the US Centers for Disease Prevention and Control, PAHO’s Headquarters, the Caribbean Epidemiology Center,

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Report on Funding for Pandemic Influenza H1N1
etc. Our facilitation of numerous training seminars for the wider public and private health sectors as well as our provision of technical presentations at some of these seminars was highly lauded by the Ministry of Health. The cumulative impact of these interventions did significantly contribute to The Bahamas being well prepared to mount an effective response to the H1N1 pandemic and to mitigate any possible disastrous effects in its population.

- What were the major challenges?

The major challenge, which we encountered, was our inability to disburse any of the Grant Funds for a number of weeks, owing to the fact that key Ministry of Health decision-makers as well as their usual support staff were away during the long summer vacation, and hence, we had to await their return before being able to move forward.

1. Response to public health emergencies
   Grant funds were utilized to increase awareness, knowledge and information among a wide cross-section of the community, including Local Government Officials, Civil Aviation Authorities, National Telecommunications Staff, Environmental Health Services personnel and key stakeholders in the Uniformed Branches of the Government [Customs, Police and Immigration] regarding the H1N1 situation and advising these audiences of their important roles in this public health emergency. This was accomplished through a series of training workshops, which were repeated in selected Family Islands, taking cognizance of the archipelagic nature of the Bahamas. The overall response to these workshops was excellent and there was a demonstrated willingness on the part of both the private and public sectors to work together for the benefit of the wider Bahamian community.

2. Outbreak investigation and strengthening surveillance
   Following the initial announcement of the global H1N1 pandemic, extensive training workshops were convened for physicians and nurses, with an emphasis on case detection, clinical specimen collection, patient management, surveillance requirements, etc. These workshops and seminars also provided the opportunity to ensure that all health staff were knowledgeable about and well-versed in the use of those protocols, which had been devised for the surveillance, investigation and treatment of the H1N1 illness. In anticipation of a possible second outbreak wave, a massive training effort was mounted in September 2009 to ensure that the entire education sector and all educators were in receipt of relevant information necessary to protect their own health as well as that of the nation’s students and to be able to effectively respond to any outbreak situations in the school population.

3. Laboratory strengthening
   The laboratory capacity for H1N1 diagnosis was significantly enhanced in the Bahamas through the procurement biological cabinets, room pressure monitors and an advanced model fluorescent microscope. These additions not only facilitated improved H1N1 diagnosis, but also assured that the diagnostic work was being performed under highly acceptable bio-safety conditions.

4. Immunization
   Although no Grant Funds were provided for vaccine, syringes or cold chain procurement, there was much concern about H1N1 vaccine availability and costs. A plan of action for the Introduction of H1N1 Influenza Vaccine was developed by the National Authorities and

Pan American Health Organization
Report on Funding for Pandemic Influenza H1N1
forwarded to the PAHO’s Regional Immunization Program in Washington, DC, USA. Although initially expected in late December 2009, 30,000 doses of H1N1 vaccine were only received on 20 January, 2010, resulting in some delay with the implementation of the proposed vaccination program.

5. Continuity of health care
The H1N1 outbreak did not result in any significant burden being placed on the routine provision of healthcare in the Bahamas. However, Grant Funds from this component were used to support those training workshops that were conducted for physicians and nurses. PAHO, on an ongoing basis, provided the management of the Public Hospitals Authority with pertinent information for their consideration in relation to bed allocations, etc in the event that there were large numbers of cases requiring hospitalization. Preparedness plans had been devised and tested to mitigate any challenges that may have arisen should the health effects of the H1N1 virus been disastrous.

6. Health promotion, communication and advocacy
Although no Grant Funds were assigned for this component, the national authorities expended significant resources and effort on their communication strategy in relation to the H1N1 crisis. The radio and television media were utilized to broadcast many different announcements and service messages to the Bahamian population. In addition, posters and flyers were created for dissemination in classrooms, health care facilities and business houses. A communication strategy was developed by the national authorities.

7. Planning, coordination and logistics
Grant Funds were used to support a series of planning workshops, both within the Ministry of Health for all of the public health sector partners as well as between the Ministry and other key Ministries such as Education. During these workshops, the opportunity was taken to update and to communicate the country’s disaster mitigation strategy. Funds from this component were also utilized to procure two lap-top computers and media production supplies.

Dr. MJ Lewis
22 January, 2010
Highlight 1
The Ministry of Health (MOH), in line with its national communication strategy to address influenza pandemic, embarked on a national campaign to inform individuals, households, workers and by extension, the general community on behaviors and practices which are important in protecting themselves and their families from the virus. This included reproduction of customized posters, radio ads and innovative TV Ads. (Copies enclosed). The MOH enhanced surveillance at health facilities combined with its public information messages effectiveness resulted in record numbers of persons with influenza-like illness (ILI) and/or severe acute respiratory infection (SARI) access health services.

Highlight 2
A three day training for health care workers from the four regional hospitals was held in July 2009 in Belize City. The main objectives of the workshop were: to learn about best practices of an occupational health and infection control program; to sensitize health personnel to status of Influenza Pandemic; to increase knowledge and skills on infection control principles and proper selection of personal protective equipment (PPE); to learn how to assess risks for potential communicable disease exposure in clinical settings.

Subsequent to the workshop, a team that attended the training embarked on a program to replicate the training to all the health regions in order to strengthen their preparedness level. Last year the entire staff of 2 health regions, Northern Health Region and Southern regional Hospital received the training. This activity without doubt has increased the preparedness capacity of health regions to respond to an influenza pandemic.

Highlight 3
A risk communication workshop was held facilitated by Jody Lanard. The objective of the workshop was to develop skills for the development of risk communication during an emergency situation such as H1N1, and was geared toward technical advisors, health educators, public relations personnel of MOH, as well as PAHO Advisors.

One of the key successes in the response to the H1N1 event in April was the excellent communication that was established from the onset with the media and general public by the MOH. This workshop further enhanced the capacity of individuals that participated in communication activities, e.g. personnel that were interviewed on radio/TV and participated in press conferences.
1. **Response to public health emergencies**

   The MOH was quick to respond to the need to implement measures to prevent the spread of the virus in case of an outbreak. Actions included interventions targeting the general public but also health care workers.

   A three days training for health care workers from the four regional hospitals was held in July 2009 in Belize City. The main objectives of the workshop were: to learn about best practices of an occupational health and infection control program; to sensitize health personnel to status of Influenza Pandemic; to increase knowledge and skills on infection control principles and proper selection of personal protective equipment (PPE); to learn how to assess risks for potential communicable disease exposure in clinical settings.

   As follow-up to the workshop a core team replicated the training to all the regions ensuring enhanced preparedness at national and sub-national levels. The entire staff of the Northern Health Region and Southern Regional Hospital received the training.

2. **Outbreak investigation and strengthening surveillance**

   The Ministry of Health (MOH) elevated its alert country-wide in response to the threat of the new Influenza A H1N1. Heightened surveillance was established at the northern (border with Mexico) and western borders, as well as, at the Phillip Goldson International Airport.

   PAHO supported this effort through the installment of necessary infrastructure and equipment to facilitate surveillance at the 6 foreign entry locations. This included the installation of a 3 room pre-fabricated housing unit for isolation of potential cases at the Phillip Goldson International Airport.

   One of the emergency response measures implemented was enhanced surveillance at health facilities country-wide. As a result, there was an increase in samples collected from patients that fit the cases definition.

   PAHO provided the funds for the shipment of suspected case samples to CAREC for testing. This support allowed for expeditious shipment of samples. The financial and logistical support was instrumental in obtaining reliable and timely results for epidemiological purposes.

3. **Laboratory strengthening**

   Nothing to report

4. **Immunization**

   Nothing to report
5. **Continuity of health care**

In an effort to improve the response to the people of Belize ensuring protection of all staff involved, availability of necessary supplies to mitigate the spread of the Influenza A H1N1 virus was necessary. PAHO supported the procurement of medical supplies and equipment (liquid hand soap, dispensers) for all health facilities (including laboratory) and MOH surveillance staff at the land borders, international airport, and 2 sea ports.

6. **Health promotion, communication and advocacy**

Public Service Announcements (PSAs) for radio and TV were developed and aired focusing on three messages: clean hands, cough etiquette and seeking medical attention if one develops influenza like illness. The media campaign was supplemented by the Ministry Response Team (MRT) members and the PWR appearing on morning and night radio and TV talk shows.

7. **Planning, coordination and logistic**

From the onset of the threat of the influenza epidemic, the PAHO Country Office worked very closely in all aspects of response activities with the MOH and other partners. The country office led by the Influenza Pandemic Focal Point supported planning and coordination of the response. The MOH personnel participated in sometimes daily virtual technical sessions coordinated from the PAHO/WHO Office of Caribbean Program Coordination (OCPC) in Barbados and in others organized by the PAHO Area of Health Surveillance and Disease Prevention and Control (HSD).

Resource mobilization both internally at the PAHO country office and with other UN agencies was undertaken to support public education efforts and procurement of medical and laboratory supplies.

The role of the PAHO country office was very key as the channel for updated information and for the dissemination of situational updates to PAHO Headquarters and other external agencies. The allocation of the emergency funds was undertaken with close consultation of the country office.
CPC – Caribbean

Highlight 1
- Development of Sub-Regional Policy Guidelines on the Management of Cruise Ships with Influenza-like Illness Traversing the Caribbean

Highlight 2
- Improved capacity of Ministries of Health to store pharmaceutical products such as antiviral medications

Highlight 3
- Strengthen Sub-regional Emergency Operations Center (EOC) capacity to respond effectively to emergencies, including pandemic influenza

1. Response to public health emergencies
(Some funds were re-allocated to component 5 to contribute to the procurement of thermo-hygrometers)

2. Outbreak investigation and strengthening surveillance
(No fund allocated)

3. Laboratory strengthening
(Fund not spent)

4. Immunization
(No fund allocated)

5. Continuity of health care

Thermo-hygrometers, which allows for quick, simultaneous readings of temperature and humidity were purchased for 21 countries in the Caribbean. This instrument will enable Ministries of Health to stock medicines, especially Oseltamivir sent by PAHO/WHO, in appropriate storage conditions and extend its shelf-life for up to two years. The accompanying operation manual provides an overview of its functions and how to program the device. The package also contained the PAHO/WHO Recommendations on Guiding Needs Planning and Antiviral Inventory Management (Oseltamivir).

To assist health care facilities in managing large influx of patients with suspected or confirmed H1N1, supplies such as masks, gloves, and hand sanitizers were procured and distributed to some counties. Assistance to Saint Lucia was increased when one of their hospitals (St Jude Hospital) was caught on fire in September 2009.
6. **Health promotion, communication and advocacy**

To increase general awareness of the public to prevent the transmission of pandemic influenza A (H1N1), three Public Service Announcement (PSA) videos were developed and distributed to Caribbean countries. The PSAs included 30-minute videos on “Basic Hygiene Measure”, “Seeking Care” and “Hand Washing”.

To target healthcare workers, a 20-minute educational video was produced on Occupational Health and Infection Prevention in Healthcare Facilities. It outlined learning objectives, key concepts on prevention and infection control measures, step-by-step procedures on hand hygiene, and use of personal protective equipment among health care workers. *(This educational video can be viewed at http://www.youtube.com/watch?v=A1WG5qTjpZ4)*

In collaboration with the Caribbean Community Secretariat (CARICOM), a sub-regional meeting on Regional Guidelines for Cruise Ships in the Caribbean was hosted in the OCPC on 31st July 2009. The meeting was attended by stakeholders from the health sector and the cruise ship industry, including the Caribbean Tourism Association to discuss the proposed Cruise Ship Protocol for the Influenza H1N1 outbreak. A draft Policy Guidelines on the Management of Cruise Ships with Influenza-like Illness Traversing the Caribbean was developed.

7. **Planning, coordination and logistics**

Support was given to the Caribbean Disaster Emergency Management Agency (CDEMA) to integrate pandemic influenza in their Regional Coordination Plan (RCP). An operational contingency plan for pandemic influenza was incorporated in the RCP which supplements its overall procedures.

To strengthen disaster response support in the sub-region, the logistics preparedness of the OCPC-PED Emergency Operations Center was upgraded. Audio-visual and additional telecommunication equipment were installed; storage capacity was enhanced; and technical documents reproduced to better equip the EOC for disaster events. EOC staff were trained on communication use (e.g. use of satphones, radios, and GPS) and warehousing.
1. Public health response to H1N1 Influenza

PAHO/WHO support helped revise National Plans to deal with emergencies and design the multisectorial plan to combat influenza A (H1N1); the plan was implemented throughout the country with the preparation of human resources for its execution.

The cooperation helped strengthen the National Focal Point and the provincial Analysis and Trends Units, facilitating systematic maintenance of the surveillance system and the analysis of reliable and timely data, updated daily, to inform decision-making at the three levels of the system in response to the events that have taken place.

2. Prompt investigation of outbreaks and improved epidemiological surveillance

Transportation was provided for the national rapid outbreak response team, so it could respond to emergency requests from authorities at points of entry (airports and ports); a system of mobile care units was also provided to treat patients in their homes and assess compliance with the established contingency plans.

With the strengthening of human resources, a countrywide response system was set up to respond to influenza cases and outbreaks; this included the control of foci, outpatient care, and hospitalization.

The capacity of the national epidemiological surveillance system was expanded by strengthening the automated components of the infrastructure, which aided in the compilation of data and information, epidemiological studies, and the preparation of reports for decision-making.

3. Laboratory

To strengthen the diagnostic capability of the influenza reference laboratory and step up active surveillance of the population, diagnostic equipment and kits were procured for the respective tests, not only for admitted patients but also for compliance with the established investigation plan.
The general training program set up to respond to this emergency received support, including the training of lab technicians in the use of the new diagnostic equipment (PCR-RT) for new influenza viruses.

4. Immunization

No funds were programmed.

5. Health care

With respect to the need to strengthen the work teams to respond to the pandemic, supplies and medical equipment were procured, including personal protective equipment for patients and health workers. Materials with information on influenza A (H1N1) were also distributed.

6. Health promotion, communication, and public education

A workshop was held for reporters and journalists from the country’s major media to communicate the risks involved with influenza.

Information on influenza was compiled and an information packet was prepared to present treatment guidelines, medical procedures, and preventive and educational measures, as well as regularly published technical documents. It was also necessary to include information on the International Health Regulations as a code of conduct for the countries. The packet was distributed to every municipality in the country.

In coordination with the National Health Promotion and Education Center, brochures and posters were designed on issues related to influenza, and TV and radio spots were broadcast on national television and radio.

7. Planning, coordination, and logistics

Strengthening of the Emergency Operations Center (EOC) in the Ministry of Public Health included logistical support for telecommunications through the purchase of teleconferencing equipment and a computer network system reinforced with a high-speed server and large data and information storage capacity.

The Emergency Situation Room of the PAHO/WHO Representative Office in Cuba was strengthened and the process for periodic delivery of updated information for decision-makers was streamlined.

The interagency cluster for health disasters is organized and coordinated by the PAHO/WHO Representative in the country.

The country has integrated the National Pandemic Preparedness Plan into its National Emergency Plan.
The office of the PAHO ECC Barbados is responsible for ten countries/territories which make up the ECC and the logistics of receiving and finalizing proposals to support these countries proved very challenging given the short time line to obligate funds. The issue of procurement from different sources was also a source of concern, and led to delays in getting the much needed items to countries.

Three Major Achievements:

1. Front line staff trained
2. Lab capacity for H1N1 surveillance strengthened
3. Community information supported

Eastern Caribbean Countries (ECC)
1. **Response to public health emergencies**

These emergency funds were used to assist countries in strengthening its national surveillance capacity at designated points of entry, to detect, prevent and protect against, control and respond to the international spread of disease while avoiding unnecessary interference with international traffic and trade at designated points of entry.

A number of training workshops were held for front line staff at designated points of entry, to support Ministries of Health in its surveillance activities for H1N1 and also to the development of National plans of action for designated points of entry, to meet core capacity requirements under the International Health Regulations 2005.

2. **Outbreak investigation and strengthening surveillance**

   *No funds allocated for this component*

3. **Laboratory strengthening**

Under this component, funds were used to strengthen the laboratory capacity to respond to the threat of the H1N1, by assisting in the purchasing of laboratory equipment for Barbados that would have gotten the major portion of these funds. Other supplies procured were sampling kits and reagents.

4. **Immunization**

   *No funds allocated for this component*

5. **Continuity of health care**

These funds were used to provide country support in strengthening of health care delivery at the Community level as well as hosting of community investigation workshops for health personnel, first responders and disaster management organizations in response to H1N1. Supplies for health care workers such as disposable gloves, N95 mask disposable gowns, hand sanitizers were purchased.

6. **Health promotion, communication and advocacy**

Funds were used to develop promotional material, fliers and banners, along with public service announcements and other educational materials for distribution in the community to support the educational programs for H1N1 virus.

7. **Planning, coordination and logistics**

Under coordination, support was provided for mobilization and telecommunication at the PAHO office by the purchasing and retrofitting of communication devices.
In three pages maximum,
- Describe the impact of PAHO’s cooperation in the first 6 months
- What were the major challenges?

1. Response to public health emergencies

Challenges
- Haiti’s MoH had no treatment (Antiviral such as oseltamivir or Zanamivir) to take care of the clinical management of cases if complications occurred.
- Also, MoH did not have Personal Protective Equipment (PPE) in sufficient quantities to give to its health personnel

PAHO’s cooperation
- PAHO provided the country with more than 30,000 treatment of oseltamivir
- PAHO also provided the country with PPE in order to address the risks in health institutions

2. Outbreak investigation and strengthening surveillance

Challenges
- Haiti’s Directorate of epidemiology has been dealing with a lot a difficulties (lack of human and financial resources) in order to implement an efficient surveillance system.
- Great difficulties occurred with regards to surveillance of the entry points of the country, especially the Dominican Republic border has many points of entry and the international airport; in the first months after the pandemic debut, many people were arriving in Haiti by commercial airlines / buses / cars from affected areas such as USA, Canada and DOR, raising the importance of reinforcing the surveillance at the entry points.
- Strengthening surveillance was also an issue for the 12,000 military/police of the UN stabilization mission in Haiti (MINUSTAH): MINUSTAH’s population was very mobile inside Haiti.

Highlight 1
- PAHO provided the National Public Health Laboratory with an RT-PCR machine for in-country diagnosis of A/H1N1

Highlight 2
- Haiti’s National Influenza Preparedness Plan was launched by the PAHO Director and Haiti’s Minister of Health and disseminated

Highlight 3
- PAHO has supported the country with more than 30,000 Oseltamivir treatments
and outside of Haiti, with daily movements to the different departments, to the Dominican Republic, and all over the world through the daily commercial flights from Haiti to the USA, Panama, France and Canada. Conditions of living of the military/police population were particular: it consisted of living in confined spaces with a high level of contact between the militaries/police.

**PAHO’s cooperation**
- PAHO supported the MoH in reinforcing surveillance in health institutions and all entry points (airports & border) of the country through the epidemiologic surveillance system.
- A form specifically designed to detect new Influenza A/H1N1 was distributed to all institutions. MOH Epidemiology, together with PAHO, was doing a daily monitoring and analysis of the reports.

### 3. Laboratory strengthening

**Challenges**
- The country has only one structure, the National Public Health Laboratory (LNSP) with capacity to receive specimens from both the Haitian population and MINUSTAH. However, the LNSP was only equipped to diagnose the type of influenza (A or B) by immunofluorescence.
- Immunofluorescence was not sufficient to diagnose A/H1N1 in-country and an RT/PCR machine was absolutely required and there was none in the country. In addition, no funds were available to purchase one at the MoH level.

**PAHO’s cooperation**
- At first, with the absence of a RT PCR machine, PAHO assisted the National Laboratory by covering all shipment costs of suspected cases sample to the reference laboratory at CDC Atlanta
- After a few weeks, PAHO provided the country with an RT/PCR machine in order to make in-country diagnosis of A/H1N1. In addition to the RT/PCR machine, training was also provided to the lab personnel. A/H1N1 funds were used to fly in RT/PCR experts from Puerto Rico to properly calibrate the machine.

### 4. Immunization

**Challenges**
- The country had no immunization plan nor resources regarding seasonal flu or A/H1N1

**PAHO’s cooperation**
- PAHO provided technical support to the MoH Immunization Directorate in order to develop a dissemination plan for the A/H1N1 vaccine (as per the donation of WHO Director General to Haiti)
- PAHO also offered support to in country UN sister Agencies for providing seasonal flu vaccine
5. Continuity of health care

Challenges
- Neither the health institutions nor the isolation wards were fully equipped. For example, they lack respirators and PPE was extremely limited.
- None of the MoH health institutions are equipped with a functional ICU. Therefore, no hospital was in a position to manage cases of severe respiratory distress.

PAHO’s cooperation
- PAHO worked together with many of the major public and private hospitals in order to make the best use of what was in place to address the pandemic.

6. Health promotion, communication and advocacy

Challenges
- Communication in Haiti was a major challenge against a backdrop of flu not being considered by many as a major threat compared to other health issues such as HIV/AIDS, TB and others

PAHO’s cooperation
- PAHO supported MoH in covering all costs regarding edition, printing and dissemination of the National Influenza Preparedness Plan (NIPP) documents to MoH Directorates and all multisector partners
- PAHO supported the MoH by printing thousands of H1N1 posters in French (ordered from WDC) to be disseminated in all health institutions and also in other public places
- PAHO participated in press conferences and Haitian journalists workshops in order to disseminate proper information through local radio stations
- MoH participated in PAHO eilluminate sessions on A/H1N1
- PAHO and MINUSTAH, in association with MoH, held joint information sessions for the military and civilian staff of MINUSTAH in June 2009
- PAHO gave weekly briefings to sister UN Agencies in Haiti at the weekly UNCT and SMT meetings

7. Planning, coordination and logistics

Challenges
- Coordination was a major issue on 2 levels:
  o Level 1: coordination of MoH and other ministries & partners (agriculture, finance, social affairs, NGO’s, etc…)
  o Level 2: coordination of MoH, PAHO, MINUSTAH and other partners

PAHO’s cooperation
- Level 1: PAHO has supported the MoH in a major effort to include all sectors’ response to the H1N1 pandemic through the dissemination of the NIPP (that was elaborated with the participation of all major line ministries)
- Level 2: PAHO had established a Flu taskforce that included PAHO, MoH, MINUSTAH, and the Cuban Brigade in order to address the coordination for all H1N1 response activities. This taskforce met daily at PAHO Haiti office at the beginning of the epidemic and later met weekly
JAMAICA

Highlight 1
- National Preparedness and capacity to respond to A/H1N1 infection was significantly improved.

Highlight 2
- Epidemiological surveillance of A/H1N1 infection became operational through strengthening of ARI/SARI sentinel sites and the National Influenza Center.

Highlight 3
- Epidemiological weekly reports are produced on a regular basis and shared with PAHO/IHR.

1. Response to public health emergencies

Achievements
- The National Influenza Preparedness and Response Plan was updated.
- A national simulation exercise to test the National Plan was carried out.
- A training of national and regional health authorities on Health Services preparedness for unusual or unexpected cases of SARI was conducted.

Impact and challenges
- PAHO support helped in identifying gaps in the health sector’s preparedness and in filling those gaps.

2. Outbreak investigation and strengthening surveillance

Achievements
- The National Rapid Response Team was trained on outbreak investigation and response.
- Regular feedbacks on A/H1N1 epidemiology and surveillance reports were shared with the National Surveillance Unit to assist in improving their quality.
- Short term consultancy services were provided to the National Surveillance Unit in order to support data editing and analysis and to assist in the establishment of a reporting system based on PAHO/WHO recommendations, and thus allow the monitoring of trends in A/H1N1 infection spread, severity and impact.
- ARI/SARI sentinel sites were equipped and their staff trained in order to assist in the collection of samples for A/H1N1 laboratory confirmation.

Impact and challenges
- ARI/SARI sentinel sites are operational, epidemiological investigation of A/H1N1 suspected cases has improved and weekly epidemiological reports are produced using PAHO/WHO recommended formats. However, due to shortage of staff in the National Surveillance Unit, publication of weekly reports was delayed in the first months of the pandemic.
3. Laboratory strengthening

Achievements
- Laboratory equipment, including a PCR machine, and reagents were procured for the National Influenza Center (NIC).
- The NIC senior manager was sponsored to attend an international course on BSL3 requirements.

Impact and challenges
- Local capacity for the detection and confirmation of A/H1N1 was strengthened with reduced turnaround time.

4. Immunization

Achievements
- Provided information on the status of vaccine shipments
- Assistance with the calculation of vaccine needs for priority groups
- Supported request for the procurement of vaccines via revolving fund
- Support to training on issues related to H1N1 vaccine.

5. Continuity of health care

Achievements
- Updated PAHO/WHO treatment protocols and algorithms were regularly disseminated.
- PAHO made a donation of Tamiflu tablets to the MOH from the Regional Stock in Panama.
- PPE kits were procured for health care providers.

Impact and challenges
- Knowledge and skills of health care providers in proper methods and procedures for A/H1N1 diagnosis and management were improved but there was no mechanism put in place to monitor consistent use of PPE by the health staff and their adherence to other infection control measures.

6. Health promotion, communication and advocacy

Achievements
- Risk communication training was provided for policy makers, senior MOH staff, hospital staff and the media was carried out with assistance from a Communication Specialist.
- Health education of the general public on H1N1 risk reduction measures was intensified through the media and dissemination of IEC materials.

Impact and challenges
- Public awareness about A/H1N1 transmission and public health preventive measures was increased among health care providers and the general public.
7. Planning, coordination and logistics

Achievements
- PAHO staff regularly participated in the meetings of the MOH-Emergency Operations Center (EOC).
- PAHO brokered close collaboration between the MOH and ODPEM (office of disaster preparedness and emergency management) in charge of inter-sectoral coordination during national disasters and emergencies.
- PAHO country office coordinated well with CAREC and HQ on different technical missions to support the national preparedness and response.

Impact and challenges
- The MOH-EOC was activated in the early days of the pandemic and has closely worked with ODPEM. However, limited human resources in the MOH/Health Emergencies Department hampered timely coordination and implementation of the simulation exercise.
ANNEX 2

CENTRAL AMERICA REPORTS
1. Public health response to the influenza A (H1N1) virus.

- In light of increases in cases of influenza-like illness and in mortality from confirmed cases of influenza A (H1N1), in July 2009 the Ministry of Health requested PAHO cooperation to develop response plans. Dr. Leonardo Hernandez of PED was assigned to attend to this request.
- In addition, at the request of the Ministry of Health, the Representative Office in Chile assigned Drs. Osvaldo Salgado and Ivan Cruz, of the country’s Ministry of Health, to convey their experiences in managing the influenza epidemic in Chile. These doctors met with the Minister of Health and her work team, as well as with the Managing Physician of the Costa Rican Social Security Fund (CCSS) and her work team. They also met with directors from the CCSS and private-sector health facilities and, finally, were speakers at a meeting of representatives from the Central American ministries of health. Financing for these consultants was provided through this component.

2. Immediate investigation of outbreaks and strengthening of epidemiological surveillance

- This component included support for the Health Surveillance Department of the Ministry of Health to upgrade its basic skills in handling surveillance information on cases of influenza-like illness, data analysis, and the dissemination of information through periodic epidemiological bulletins.
- The development of case investigation was also supported, providing laboratory supplies for sampling and personal protective equipment. Finally, assistance was provided for technical meetings to develop surveillance guidelines.

3. Laboratory

- This is the component that received the most investment, since the Ministry of Health’s National Influenza Center lacked supplies for processing samples to confirm influenza cases. Given this situation and the need for rapid results, funds were invested in the purchase of
supplies for immunofluorescence tests, as the first step in diagnosis. In the case of positive results for influenza A, the PCR test for determining the sub-type was immediately performed.

- It should be mentioned that since 11 July, sampling at the national level is done only for patients with severe acute respiratory infection. This has resulted in a marked reduction in the shipment of samples to the laboratory.

4. **Immunization**

- This activity was not carried out in the country.

5. **Health care**

- This component included support for the country to hold a meeting with the regional directors of the Ministry of Health, attended by the Vice Minister, Director-General, and Director of Health Surveillance, to study the guidelines for the health sector response to the epidemic. The analysis focused specifically on matters related to the guidelines to follow at points of entry to the country (airports, ports, and border crossings).
- In addition, PAHO/WHO financed a workshop to assess initial aspects of the country’s management of the epidemic, organized by the Minister of Health with authorities from the Costa Rican Social Security Fund and Directors of Health Surveillance, Health Access, and Health Promotion in the Ministry of Health,

6. **Health promotion, communication, and sensitization**

- At the request of the Ministry of Health, contracts were issued for printing of posters and other media to inform the public about ways to prevent influenza, such as the protocol for sneezing and the correct way to wash hands, as well as instructions on what to do in the event that a person shows symptoms of influenza-like illness.

7. **Planning, coordination, and logistics**

- At the request of Ministry of Health authorities, a staff member from the Costa Rican Social Security Fund participated in the influenza update event “Lessons learned and preparing ourselves for the future,” organized by the Secretariat of Health of Mexico in Cancun.
- Also provided were payment for transportation and delivery of oseltamivir and personal protective equipment sent by our office from Panama and Washington, respectively.
1. **Public health response to the influenza A (H1N1) virus**
   - Preparation of proposal for a National Plan for Influenza A (H1N1)
   - Procurement of selected supplies for strategic sites for the response, including two of the principal correctional centers

2. **Immediate investigation of outbreaks and strengthening of epidemiological surveillance**
   - Training in the International Health Regulations for new managers and epidemiologists at the regional and departmental levels
   - Direct technical assistance for the investigation of outbreaks and data collection, management, and analysis;
   - Provision of necessary equipment and supplies to the Ministry of Health for investigation of outbreaks and data processing
   - Support for information systems

3. **Laboratory**
   - Procurement of supplies for Ministry of Health laboratory
   - Facilitating circulation of current information

4. **Immunization (not applicable)**

5. **Health care**
   - Training for new managers and other health workers in responding to a new flu outbreak
   - Procurement of selected medical supplies and equipment, including personal protective equipment

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6. Health promotion, communication, and sensitization
   - Design, preparation, publication, and dissemination of graphic materials (maps) on influenza A (H1N1) and seasonal flu
   - Training of facilitators (ecoclubs) in health promotion and the prevention of influenza A (H1N1)
   - Support for the plan for social communication in health

7. Planning, coordination, and logistics
   - Provide logistical support for mobilization, installation of equipment and telecommunications
Guatemala

Highlight 1
- Improved epidemiological surveillance, based on active surveillance of respiratory syndromes such as influenza-like illnesses and severe acute respiratory infections, with measures such as detection of these syndromes in clusters or among health personnel, and detection of pneumonia in previously healthy young adults, with monitoring of resulting deaths.

Highlight 2
- Building of capacity in the National Laboratory for diagnosis of the new subtype, with conventional and real-time PCR techniques.

Highlight 3
- Improvement of response capacity in medical care units, by adjusting the supply and demand for antiviral and biomedical equipment, and by developing protocols and guidelines for medical care.

Based on the declarations by Mexico and WHO on the new subtype of influenza, pandemic contingency plans were implemented in Guatemala, putting the structures in place to begin the activities established in plans and protocols.
The main challenges were
1. Organization and coordination of the response at the inter- and intra-ministerial levels
2. Resource management
3. Coordination and management of human resources
4. Having basic inputs, especially oseltamivir.

1. Public health response to the influenza A (H1N1) virus

Before identifying the first case of influenza A (H1N1), given the declaration of the yellow alert issued by the National Emergency and Disaster Response Coordinator (CONRED) through the National Pandemic Commission, rapid response groups at the central level and specialized groups for cascade training and supervision were mobilized immediately in the different departments and health areas.

Main activities in this component:
- Review of the National Plan for a potential pandemic
- Updating of protocols for epidemiological surveillance, based on the operational definitions suggested by PAHO/WHO, the collection of samples, and management of suspected cases
- Formation of national teams with a focus on training and supervision
- Immediate mobilization of health teams for rapid response and training in the different health areas
- Identification of needs with respect to drugs such as antivirals, antipyretics, antibiotics, symptom relievers, etc., by health area and hospital
- Identification of needs for the collection of samples and for consumables in the laboratories
• Meetings to coordinate with the rest of the public health sector, medical societies, associations, laboratories, clinical experts, agencies, etc

2. Immediate investigation of outbreaks and strengthening of epidemiological surveillance

A situation room in the Emergency Operations Center (COE, the Spanish acronym) was put into operation, with personnel contracted to support the identification, analysis, and reporting of cases and contacts.

A study of the epidemiological characteristics and clinical manifestations was included. Guatemala already had two parallel epidemiological surveillance processes for seasonal influenza in place through two projects in specific health areas, which facilitated the active surveillance work. With the support of the agencies, computer systems were developed for case monitoring (both clinical and laboratory surveillance) and reporting.

Main activities in this component:
• Rapid mobilization of response teams for outbreaks
• Direct technical assistance for the investigation of outbreaks and data collection, management, and analysis
• Training in the systems developed to support epidemiological surveillance in order to detect events that could indicate the emergence of cases fitting the operational definitions
• Assistance with personal protective equipment and supplies
• Assistance with equipment and supplies for the implementation of the situation room
• Case reporting as stipulated in the International Health Regulations 2005
• Coordinated efforts with hospitals to define and implement triage procedures

3. Laboratory

Since the National Public Health Laboratory was in the process of certification as the National Reference Center for Influenza, it already had computerized surveillance processes. However, as with other countries, it did not have the necessary techniques and reagents for identify the new virus.

Main activities in this component:
• Rehabilitation of areas and installation of real-time PCR equipment
• Training in the use of new techniques for identifying the virus
• Implementation of new techniques for detecting the influenza A (H1N1) virus at the national level and improving biosafety measures in the transporting of samples
• Rapid training for laboratory staff in use of diagnostic equipment for new influenza viruses

4. Immunization

The support has been focused particularly on the development of a National Influenza A (H1N1) Vaccination Plan.

Main activities in this component:
• Participation of a delegation from Guatemala in the Subregional Workshop for planning the introduction of the pandemic influenza vaccine, Panama–October 2009
5. Health care

Within the Ministry of Public Health and Social Welfare medical units, particularly hospitals followed the provisions in their contingency plans, initially including the cancellation of programmed events in order to be ready for expected cases. However, the number and severity of cases was not as expected.

Main activities in this component:
- Purchase of selected medical equipment and supplies, including personal protective equipment
- Formulation, dissemination, and adaptation of directives on the procurement and storage of specific pharmaceutical products and medical supplies for the novel influenza A (H1N1) or other new flus
- Training managers and other health workers to respond to a new flu outbreak
- Evaluation and updating of existing plans for managing a significant increase in the number of patients requiring medical care
- Strengthening the country’s capacity with antivirals for adults and children
- Supporting the setup of a triage system in referral hospitals to improve health care in the case of a significant increase in patient load
- Implementation of measures to protect the health of health workers (personal protective equipment and other supplies, up-to-date information, production of informational materials, including posters)

6. Health promotion, communication, and sensitization

Management of the media was a great challenge, given the amount of information circulating on the Internet and in the mass media. Proper communication of risks required a specific subcommission to develop a campaign in this area. In addition, health promotion and health education were coordinated with municipal entities to offer guidance in the implementation of mitigation measures, such as the closing of schools, the cancellation of public events, etc.

Main activities in this component:
- Design, preparation, publication, and dissemination of graphic materials on influenza A (H1N1) and the seasonal flu
- Adequate contact with the media and the translation of specific materials for the indigenous population
- Improvement of procedures and the capacity to formulate, update, and disseminate messages on reducing flu-related risks
- Getting ecoclubs involved as health promoters
- Special attention to specific groups such as the elderly, children, people in detention centers (prisons), and different ethnic groups
HONDURAS

Highlight 1
- Development of laboratory capacity for diagnosis of the pandemic virus

Highlight 2
- Consolidation of sentinel surveillance and intensified surveillance

Highlight 3
- Strengthening of the rapid response teams of the 20 departmental health regions for implementation of the IHR 2005

1. Public health response to the influenza A (H1N1) virus

From the beginning of the influenza A (H1N1) outbreak in 2009, PAHO provided assistance to both the United Nations system and the Ministry of Health of Honduras. Listed below are the most important activities that posed significant challenges, not only because of the pandemic and the organization of the response, but because there had been political instability in the country:

- Updating the country's national pandemic plan
- Updating the pandemic plan of the United Nations system
- Technical preparation of the health authorities for press conferences
- Technical preparation for social communicators in risk communication
- Implementation of the IHR 2005 in departmental health regions and coordination with government institutions
- Strengthening of the National Liaison Center (direct technical assistance, equipment, and supplies)
- Harmonization of international cooperation, including different agencies to support the Secretariat of Health in procuring critical supplies and in risk communication and other activities
- Procurement of 20,000 doses of oseltamivir and personal protective equipment
- Training in case management for clinical personnel in public and private facilities in the most important cities in the country

2. Immediate investigation of outbreaks and strengthening of epidemiological surveillance

- Standardization of protocol for the investigation and control of outbreaks
- Provision of materials, supplies, and equipment for members of regional and local rapid response teams
- Consolidation of sentinel surveillance, including surveillance of SARI, which did not previously exist
- Design of a single surveillance form for ILI/SARI
- Expansion of intensified surveillance in all regions of the country
- Development of a database
• Continuous improvement in quality of epidemiological information processing and analysis
• Consolidation of mechanisms for the dissemination of information to clients and key users through the National Liaison Center
• Operations research development (study of first 100 cases, others)

3. Laboratory

• Strengthening of immunofluorescence technique in the national laboratory
• Implementation of RT-PCR technique
• Improvement of capacity for taking and shipping samples for sentinel and intensified surveillance
• Management of critical supplies for detection of the pandemic virus
• Capacity-building for human resources in the RT-PCR technique through international experts and internships at the Gorgas Institute
• Upgrading of the physical space of the National Virology Laboratory for molecular biology
• Procurement of furniture and equipment for implementation of the RT-PCR technique
• Consolidation of the laboratory's NIC status

4. Immunization

• Definition of national guidelines for use of the pandemic vaccine
• Support for the country in management of donated pandemic vaccine

5. Health care

• Training in aspects of case monitoring and management for health care personnel from regional and national hospitals
• Definition of national guidelines for managing cases at the different levels of the system
• Strengthening the capacities of hospitals in the implementation of pandemic response plans through focused visits, integrating this activity with plans to implement the IHR 2005

6. Health promotion, communication, and sensitization

• Training media workers in how to communicate about the pandemic
• Implementation of the national IEC strategy
• Daily dissemination of updated information to scientific associations and the 20 departmental regions
• Design and printing of educational material
• Training workshops on influenza for businesses, schools, and other institutions
• Support to the Ministry of Health’s Bureau of Health Surveillance for constant communication with the regional network of epidemiologists and with hospitals, using Elluminate
• Holding forums with interdisciplinary and intersectoral participation to bring staff up to date on different aspects of the course of the pandemic
• Training workshops for personnel of the United Nations system
7. Planning, coordination, and logistics

- Support for updating and adapting the national pandemic plan
- National assessment of the response to the pandemic through national meeting of directors, epidemiologists, microbiologists, and regional and hospital clinicians in the 20 health regions.
- Assessment of the capacity for detection, evaluation, and response to PHEIC at the national, regional, and local levels and at points of entry
- Active participation and facilitation of the GOARN mission in the country
- Interinstitutional coordination (reported under item 1)
MEXICO

Highlight 1
- Publication of timely and essential epidemiological bulletins during the first phase of the pandemic and periodic dissemination of key technical and scientific information for personnel in the health sector.

Highlight 2
- Adoption of the LSS-SUMA System by the Secretariat of Health as the official supply management system in epidemiological emergencies and disasters in the 236 health districts, 32 states, and at the national level.

Highlight 3
- Standardization of health sector criteria for managing the pandemic by offering courses on safe hospitals in epidemiological emergencies and district response for mitigating influenza A (H1N1) in the context of health promotion and primary health care. Course participants included the principal representatives of the health sector in the 32 states and of other institutions such as the Mexican Social Security Institute, the Department of the Interior, the Secretariat of Defense, the Secretariat of the Navy, the National Civil Defense System, and the Institute for Social Security and Services for State Workers, among others.

1. Public health response to the influenza A (H1N1) virus

The PAHO/WHO response in Mexico was immediate mobilization of financial and technical resources, which was appreciated by the national authorities in the different technical areas and administrative levels of health in the country. From the moment the Secretary of Health declared a national emergency, PAHO offered its full cooperation. The technical contingent of PAHO/WHO sent to Mexico for the period April to December included 46 consultants in different areas, for a total of 1,270 consulting days, distributed according to the phases of the influenza and the country’s need for cooperation from the PWR.

PAHO/WHO cooperation in the immediate response was comprehensive including aspects related to management of the emergency and the response; strengthening of epidemiological surveillance in humans and animals; strengthening of diagnostic capacity, both clinical and laboratory; the health systems and services response; risk communication targeting political and technical decisionmakers, the media, and the general public; strengthening of health promotion and prevention measures, including vaccination; strengthening of logistics for emergencies and maintenance of the strategic reserve; mental health in emergencies and crises, and operations research on community and services.

This technical cooperation was concentrated in April and May as the logical response from the Organization in the first phase of the pandemic. Subsequent cooperation focused on health care and maintenance of initial commitments, as well as the response to new peaks in the epidemic.
2. Immediate investigation of outbreaks and strengthening of epidemiological surveillance

In the area of epidemiology, epidemiological surveillance systems, data analysis, and epidemiological information were strengthened. At the start of the epidemic, mobilizing experts required the organization and immediate implementation of a crisis room and the creation of a joint team with the national authorities for routine information analysis, operational decision-making, and the preparation of daily reports and press releases. Field investigations were designed and protocols and questionnaires were prepared for the community, hospitals, and verbal autopsies of the dead.

The priority objective of the field activities was to directly obtain basic information from hospitals, based on interviews and contacts with hospitalized patients, and to train national teams in the proper technique for collecting samples. One of the most serious commitments of PAHO/WHO was to keep the crisis room operational, compiling data daily and disseminating it to key decisionmakers. Cooperation for the analysis of available epidemiological information on influenza was strengthened, making use of epidemiological bulletins, presentations, and the database from the first phase of the epidemic (April-October 2009). One of the greatest challenges was working with the national and state levels in health and agriculture in investigation and development of plans that included zoonoses within the framework for early warning of epidemics to permit adequate preparation and response.

3. Laboratory

4. Immunization

PAHO/WHO provided support for a national workshop for planning the introduction of pandemic influenza vaccine, where the technical guidelines for countrywide vaccination were presented and discussed, in addition to discussions on information system for recording the doses administered, key messages for vaccination, the importance of the social media campaign, the system for recording adverse events, and the priority groups to vaccinate. The following were adopted as the main objectives of vaccination in the country: a) to protect the integrity of the health system, and b) to reduce mortality and severe morbidity associated with pandemic influenza. Participants in this workshop included the people in charge of vaccination from the secretariats of health (SSA) in the 32 States, the Mexican Social Security Institute (IMSS), the Secretariat of National Defense (SEDENA) the Institute for Social Security and Services for State Workers (ISSSTE), the Secretariat of the Navy (SECMAR), the National Center for Epidemiological Surveillance and Disease Control (CENAVECE), the General Bureau of Epidemiology (DGE), Communications offices of the SSA, the Federal Commission of Protection against Health Risks (COFEPRIS), and other institutions.

5. Health care

Strengthening health services involved a multiphase strategy to respond to the needs created by the pandemic. The first phase consisted of working with the federal Secretariat of Health to understand the federal approach to managing the pandemic and the role of each sector in the response to the emergency. The emphasis in the first phase was training and the dissemination of federal guidelines to health workers through different media (face-to-face courses, bulletins, workshops, virtual courses), activities that are continuing with greater emphasis on the state level. The second phase was work with the states, where it became clear that more work was needed at the local level and that federal strategies needed to be adapted to state realities. The third phase was aimed at responding to needs and gaps in primary care, developing primary health care skills, taking the key messages to technical
personnel at the primary care level and to community coordinators for health districts—work that should continue. In the health services, there has been cooperation primarily with the Secretariat of Health, IMSS, and ISSTE, thus strengthening interaction among the three largest health subsectors in Mexico. There has been cooperation throughout the health services network from primary health care up to general and specialized hospitals, developing the “Safe Hospitals in Epidemiological Emergencies” strategy at the national level. There has also been support for mental health activities for health workers involved in the institutional and community response to the H1NI pandemic, especially during the first months of the emergency.

6. Health promotion, communication, and sensitization

Health promotion and the issue of health care were addressed in phases, strengthening both the state and district levels. Guidelines were disseminated in coordination with the General Bureau for Health Promotion, working directly with the majority of local jurisdictions and with all the states of the federation. National capabilities were strengthened in aspects related to risk communication, especially relationships with the media.

Institutional studies and investigations are being supported in the health services and the IMSS to measure the population’s perception of messages for health promotion and influenza prevention. Cooperation in response to the epidemic has included advocacy to increase the scientific and technical evidence on the impact on vulnerable groups such as pregnant women, the obese, and people with chronic illnesses. Periodic dissemination of key technical and scientific information to health sector personnel has been established and maintained (documents, CDs, etc.)

7. Planning, coordination, and logistics

PAHO/WHO has worked closely with its national counterpart in an improved relationship recognized by national authorities and technical personnel alike. This has created new opportunities for cooperation at the district and municipal levels, demonstrating that Mexico accepts and requires cooperation that bolsters its health processes and helps it advance into new work areas.

One example was support for the Global Lessons Learned Meeting in Cancun, Quintana Roo, which took place in early July 2009.

The cooperation to strengthen logistics and strategic reserves included acceptance of the SUMA strategy and the development of the Mexican model, LSS/SUMA, strengthened in CENAVECE and extended to the 32 states of the federation. As a result of the cooperation, the National Health Council decided that the LSS-SUMA system should be adopted by the 32 states as the official tool of the Secretariat of Health for managing emergency epidemiological supplies for disasters. Moreover, cooperation of PAHO/WHO with the Federal Secretariat of Health, through CENAVECE, led to operational influenza response programs at both the federal and state levels.

The Emergency Operations Center of the PWR-MEX was set up and strengthened with the procurement of equipment to manage the coordination and support of emergency activities in a timely manner.

At the request of the Government of Mexico and with its support, a joint ECLAC/PAHO/WHO team reassessed the economic impact of influenza A (H1N1) on the country.

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NICARAGUA

Highlight 1
- Ministry of Health leadership in the response to the health emergency

Highlight 2
- Active community participation in the emergency response teams

Highlight 3
- Low morbidity and mortality

1. Public health response to the influenza A (H1N1) virus

a. Impact
- Creation and training of emergency response teams with active participation of the community and the primary health level;
- Review and adaptation of the National Pandemic Response Plan;
- Simulation exercises to implement and improve intersectoral coordination of pandemic preparedness plans in the SILAIS and municipalities

b. Challenges
- Maintain active intersectoral coordination at all levels
- Political backing to keep the emergency response teams active

2. Immediate investigation of outbreaks and strengthening of epidemiological surveillance

a. Impact
- Rapid mobilization of emergency response teams;
- Direct technical assistance for investigation of outbreaks and collection, management and analysis of data;
- Immediate support for the Ministry of Health with equipment and supplies for the investigation of outbreaks and data processing;
- Response to emergency requests from Ministry of Health authorities to respond to outbreaks, advising them on the implementation of containment measures at points of entry (international airport, ports, and border crossings with Honduras and Costa Rica)

b. Challenges
- Obtaining financing for the immediate investigation of outbreaks and containment measures
- Ongoing training of human resources in the investigation of outbreaks and containment strategies
3. Laboratory

a. Impact
- Procurement of materials, reagents, and other basic laboratory supplies for etiological diagnosis of the new influenza A (H1N1) virus;
- Rapid training in use of the protocol for detection of the new influenza virus using RT-PCR;
- Facilitating the circulation of information and samples from the national level to the CDC

b. Challenges
- Protecting human resources trained in the diagnosis of the new virus;
- Maintaining the supply of materials and reagents for identification of the new virus;
- Guaranteeing the quality of diagnoses

4. Immunization

5. Health care

a. Impact
- Procurement of selected supplies and medical equipment, including personal protective equipment;
- Training for directors and health workers in the organization of emergency response services;
- Training of health workers in the “Protocol for the management of patients with human influenza A (H1N1)”
- Setting up of triage areas in health facilities for patients with respiratory issues;
- Implementation of protective measures for health workers (PPE and other supplies, up-to-date information, production of informational materials, such as posters)

b. Challenges
- Ongoing training for health workers on the organization of services and patient care;
- Keeping the health services supplied with the consumables, equipment, and medical supplies essential for patient management and the protection of health workers

6. Health promotion, communication, and sensitization

a. Impact
- Design, preparation, publication, and dissemination of educational materials on influenza A (H1N1) and seasonal flu;
- Contact with the media to report on the global status of the pandemic;
- Strengthening procedures and the country’s ability to formulate, update, and disseminate messages on reducing risks related to flu

b. Challenges
- Supporting the country in the preparation of a risk management strategy
- Obtaining financing for measures to keep the population informed about prevention measures

7. Planning, coordination, and logistics

a. Impact
   - Implementation of the Emergency Operations Center (COE, Spanish acronym) in the Ministry of Health;
   - Improvement of the Emergency Operations Center in the PAHO Representative Office;
   - Organization of the GOARN team for the country

b. Challenges
   - Keep the COE in the Ministry of Health operational
   - Follow up on the recommendations of the GOARN team.
Panama

**Highlight 1**
- Strengthening basic skills for surveillance, detection, reporting, and rapid response at the national and provincial levels

**Highlight 2**
- Analysis and dissemination of information from other sectors related to health

**Highlight 3**
- Strengthening the response at the primary care level, with emphasis on the indigenous regions, for the contingency of an unusual outbreak of SARI

**Background**

With the confirmation of outbreaks of influenza A (H1N1) virus in Mexico and the United States, on 24 April 2009, the Ministry of Health of Panama (MINSA) issued the first alert for cases of febrile respiratory disease caused by this virus and other atypical cases. A day later, Dr. Margaret Chan convened a meeting of the WHO Emergency Committee, which determined that the situation constituted a public health emergency of international concern.

As a result of the declaration of influenza A (H1N1) as a public health event of international concern, on 26 April 2009 the President of the Republic of Panama, Mr. Martín Torrijos, activated and chaired the National Intersectoral Commission (CNIIA) for comprehensive planning of state actions to respond to the threat of avian and/or human influenza pandemic, in which 20 government entities participated.

In coordination with Panamanian authorities, the PAHO/WHO Representative Office in the country formed working groups to support (1) the activities of the National Intersectoral Commission and the National Technical Commission (TSC), the operational arm for the guidelines issued by the CNIIA; (2) technical assistance activities for epidemiological situation analysis; (3) technical assistance activities to improve rapid response from the health services, especially at the primary care level, for the prevention and containment of the pandemic; and (4) technical assistance activities for risk communication.

This report emphasizes the response in Panama supported with funds from the Office of U.S. Foreign Disaster Assistance of the U.S. Agency for International Development (OFDA/USAID), the department of Humanitarian Action of the Spanish Agency for International Cooperation for Development (AECI) and WHO.

1. **Public health response to the influenza A (H1N1) virus**

The public health response helped finalize the preparation of emergency pandemic response teams and supported the immediate activation of the National Intersectoral Commission (CNIIA) for comprehensive planning of government actions to respond to the threat of avian and/or human pandemic influenza and of the National Technical Commission (TSC), which serves as the operational arm for guidelines issued by the CNIIA. The funds received were used as follows:

- Personal protective equipment (PPE) was procured and distributed for use by personnel working in health care centers in the Ngäbe-Buglé region.
• Drinking water storage tanks were acquired and installed in strategic sites with high concentrations of people at high risk of contracting the disease: prisons in La Chorrera, Colón, La Joya, and La Joyita.

• Telecommunications and electrical equipment requested by the Ministry of Health was procured to facilitate activation of the Ministry communications network for containment of the pandemic.

2. Immediate investigation of outbreaks and strengthening of epidemiological surveillance

In order to strengthen epidemiological risk assessment activities, PAHO/WHO supported capacity building for case detection, monitoring, and epidemiological surveillance, with emphasis on severe acute respiratory infections and influenza A (H1N1).

This included the procurement of equipment and supplies to improve the work in epidemiology situation rooms both at the central level and in all the health regions. The material procured included computers, updated software and hardware, televisions, GPS, fax machines, and projectors.

3. Laboratory

Given the need to strengthen virology laboratory capacity at the Reference Center of the Gorgas Commemorative Institute of Health Research (ICGES), Tissuelyser II equipment was procured. This equipment permits greater efficiency and speed in laboratory diagnosis of DNA, RNA, and protein in multiple samples in the field.

4. Immunization

On 20 May, 2009, the President of Panama, Mr. Martín Torrijos Espino, delivered isolates of the influenza A (H1N1) virus to PAHO/WHO to contribute to scientific research for the reduction of This strain was cultured by the ICGES Department of Genomics and Virology.

5. Health care

To support the response, PAHO/WHO held joint workshops with the Secretariat of Health for Emergencies and Disasters (SISED) and other entities of the Ministry of Health for health professionals at the central and primary care levels. Workshops were held in the health regions of Azuero, Veraguas, and Coclé and in all the hospitals in metropolitan Panama. In all, 200 health professionals from the Ministry of Health, the Social Security Fund, the SISED, Panamanian Red Cross, System 911, the National Civil Defense System (SINAPROC), the Fire Department, the National Police, and the National Naval Air Force Service participated. The workshops bolstered the response at the central and primary care levels to an excessive demand for services related to SARI, developing capacities for care of the population affected by the combined effect of seasonal influenza viruses, the outbreak of influenza A (H1N1), and other causes of respiratory infection. The workshop stressed the need for ongoing confirmation of the services’ response capacity to this contingency:
- Course on preparedness for health facilities in the primary network for cases of pandemic influenza and severe respiratory infection (SARI). The topics discussed were: outpatient management of asymptomatic patients, use and indications for antivirals, home monitoring, standard precautions, and special precautions.

- Seminar-workshop on outbreaks or unusual events in public health and for the dissemination of pre-hospital treatment protocols for cases of human influenza A (H1N1) virus for agencies involved in the immediate response to emergencies and disasters. Basic concepts were presented on clinical management of human influenza cases, as well as biosafety and occupational health measures, including the correct procedures for putting on and taking off personal protective equipment (PPE).

6. Health promotion, communication, and sensitization

With regard to communication, support was provided for the preparation of educational materials for the community and health workers. They included (1) the initial flyer on swine flu; (2) The pamphlet “Protective measures to reduce the risk of contagion from influenza A (H1N1) in educational institutions;” (3) Educational leaflets, posters, and other materials in subsequent months; and (4) Displays on the introduction of the pandemic vaccine, targeting specific population groups (pregnant women, patients with chronic diseases, health workers). Support was also provided for printing and disseminating the following educational materials:

- Materials (decals, posters, displays) for Ministry of Health campaign on actions to contain pandemic influenza A (H1N1)
- Document entitled “Practical guide for mental health in disaster situations”, which complements and sums up in practical terms procedures from the manual on “Mental health protection in disasters and emergency situations”, and
- Design and printing of the document “Protective measures to reduce the risk of contagion from influenza A (H1N1) in educational institutions: Guide for educators”, with advice and practical ideas for classrooms.

7. Planning, coordination, and logistics

PAHO/WHO supported a workshop by the National Technical Commission on Health entitled “Lessons learned from the response to the pandemic influenza A (H1N1) virus.” Among the points stressed were the following:

- The importance of the country having a national response plan for an influenza pandemic caused by avian H5N1 virus, facilitating start-up activities
- The need to actively incorporate a mental health team in from the outset
- Integration of health information systems among the different levels of the Ministry of Health and among institutions
- The need for a periodic review of regional action plans for a pandemic of this nature
- The need for protocols for the monitoring and evaluation of interventions at all levels of care
- The need to have ongoing training for health workers and all people involved in the response
ANNEX 3

SOUTH AMERICA REPORTS
Argentina

- During the crisis the country was capable of responding to the pandemic, which also served as a simulation exercise in the event of a more severe wave or new public health crisis.
- The country’s response displayed considerable public-private mobilization and interaction.
- The entire PAHO Country Office demonstrated technical-administrative integration, teamwork, and solidarity in addressing the problem, under the Representative’s stalwart and constant coordination.

Introduction

Argentina has good health and living conditions and great health care capacity, despite major regional inequalities in access and health levels. The country was preparing for a potential influenza pandemic and had a good contingency plan (see www.msal.gov.ar), decrees, and financial resources from its own budget, with special funding from bilateral cooperation for implementation. In particular, it already had diagnostic and case management capacity, due to the annual waves of seasonal influenza in the country, as well as institutions capable of training human resources and conducting operations research.

PAHO had been assisting and cooperating with the country in preparation for the pandemic, especially by strengthening laboratory capacity and providing training in surveillance, case management, and risk communication. In addition to regular resources, it had special country support resources for strengthening sentinel surveillance in both health services and laboratories. At the beginning of the pandemic, these resources were made available to the country, while additional emergency resources were mobilized regionally and globally. The PAHO/WHO Representative Office (PWR-Argentina) received and delivered US$180,000 to Argentina under this category.

The following report is a summary of the PWR-Argentina’s contribution to major national efforts to handle the first months of the pandemic. The team of the PAHO/WHO Representative Office in Argentina and national authorities and technical personnel agree that the cooperation was timely, flexible, and effective.

1. Public health response to the influenza A(H1N1) virus

The country was in the midst of its first major dengue epidemic as well as an election campaign when the influenza pandemic struck. Even so, health authorities willingly faced the problem and were open to PAHO/WHO cooperation. There was turnover in the highest health authorities in the middle of the pandemic’s peak, but in general, the response was sustained, and PAHO was a key close actor that worked with both administrations.
The multiplicity of actors, spokespeople, and conflicting messages posed a significant challenge and led to public misunderstanding and fear. PAHO/WHO in the country took the initiative of preparing educational material, which was constantly reviewed and updated, and making it available on a massive scale.

Achieving an adequate, timely response from the health services is another challenge for the country every influenza season, and all the more with the new virus. There was demand for services nationally and a timely response by PAHO in helping the provinces organize health care, mobilize and train human resources, and get the private sector and scientific societies involved in the response.

2. Prompt investigation of outbreaks and strengthening of epidemiological surveillance

PAHO offered and made direct technical support available, mobilizing national and international experts to strengthen surveillance, investigate cases and outbreaks, and train local teams in surveillance and investigation. It provided support and constant assistance to the operations of the national situation room and its relations with other countries and PAHO and WHO Headquarters. It supported operations research in several provinces. It advised the commission that was created with the National Ministry of Health (MSN) and the scientific societies for characterizing the pandemic, conducting a mortality study, etc. It hired personnel to carry out different surveillance activities. It facilitated the travel of technical support teams to the affected provinces. It contributed equipment and supplies for surveillance operations. It supported the integration of epidemiological surveillance and laboratories, the use of data for decision-making, and the preparation of reports for assorted purposes.

3. Laboratory

At the start of the pandemic, Argentina had three national influenza centers (NICs) and a sentinel surveillance network (that was only partially functional). The authorities decided to make the Malbrán Institute the sole reference laboratory, rapidly overwhelming it and leading to the decision for extensive and inopportune decentralization to several regional/provincial laboratories.

PAHO contributed international experts, hired special staff for the NICs, facilitated training and supervision, purchased equipment and supplies, and improved the laboratories’ diagnostic response during the pandemic. At the same time, it attempted to strengthen sentinel surveillance by sending in experts who provided direct technical cooperation and input on maintaining surveillance processes.

4. Immunization

The country was already providing seasonal influenza vaccination every year for the traditional risk groups, progressively increasing coverage. Total coverage is not known because both the
National Ministry of Health (MSN) and several provincial ministries and social programs (Social Security) obtained vaccines and there is no comprehensive registry of their use.

In 2009, the MSN doubled the number of doses purchased and used almost the entirety of its stock. Several provinces and social programs had similar experiences.

Faced with the new virus, the country agreed to accept the new vaccine and, with the support of PAHO/WHO and the National Advisory Committee, it defined risk groups, strategies, and timing and calculated the number of doses necessary. Vaccination should be carried out in the first half of 2010, before the austral winter season. Furthermore, no extraordinary resources were used for vaccination activities.

5. Health care

At the request of the MSN, PAHO supported the creation of a Health Services Coordinating Committee to prepare several action protocols for health services at the different levels of care (one for hospitals and one for the first level of care). These protocols and guidelines were adaptations of the technical documentation provided by PAHO and used tools to calculate the necessary expenditures for dealing with the pandemic.

These guidelines were approved by COFESA (Federal Council on Health). The commission toured the different provinces to present the guidelines and organize services in conjunction with local professionals to provide a better, more coordinated response.

In addition to making the technical materials available, PAHO supported the continuing participation of technical personnel in the commission and the participation of local and international consultants who supported the work directly in the provinces. It also facilitated the entry and distribution of Tamiflu in the country.

6. Health promotion, communication, and sensitization

The Center for Information and Knowledge Management was part of the Crisis Committee of the Representative Office in Argentina, which responded to the U.N. Interagency Group and the national partners in the face of the pandemic.

In addition to several activities within the United Nations system, the Center for Information and Knowledge Management prepared information kits customized with the logo of each institution and distributed them to all the country’s ministries of health (national and provincial), so that they could obtain, reproduce, and disseminate the materials at the provincial/local level. The MSN did not use the materials, but several provincial ministries did, and the one for the city of Buenos Aires was used by free and cable TV channels, NGOs, hospitals, social programs, libraries, universities, schools, public transportation, businesses, street food vendors, restaurants, hotels, hairdressers’, gyms and clubs. The team prepared content with messages in different indigenous languages to be used in MSN projects involving indigenous people, and also designed a page on its website devoted to the pandemic at www.paho.org/arg. Additional promotional material is attached as a reference.
7. Planning, coordination, and logistics

The country activated its interinstitutional crisis committee immediately following the WHO alert and set up its national situation room. From the very beginning, the Representative and the Representative Office were present and there was a constant exchange of information and technical support. In addition to the Representative Office subgroup, which had already been preparing for the pandemic at the internal level for the United Nations system and the country, the Representative, responding to the WHO alert, created a permanent expanded response team and activated the mechanisms to provide the response, which included not only the entire team, but international advisers in several fields as well.

PAHO supported the central command of the national response and progressively included the affected provinces. Its administration supported the purchase of equipment and supplies, the mobilization of experts in the country, training, the hiring of additional human resources, etc. Furthermore, given the difficulties the MSN had implementing a CDC (U.S. Centers for Disease Control and Prevention) grant, the PAHO administration supported the preparation, negotiation, and approval of an agreement between the MSN and PAHO for the administration of this grant, which is being executed in 2010 in preparation for the new flu season.
Impact of PAHO cooperation in the first six months

The support during the immediate reaction was crucial, both for providing a real response in the service area and for giving national and departmental health authorities reassurance and expertise.

In the first case, PAHO arranged for and facilitated the entry of oseltamivir into the country in quantities sufficient for responding to an extreme scenario and keeping the country supplied for several weeks. At present, stocks are sufficient for a second wave.

Sufficient personal protective equipment (PPE) was acquired and delivered to the Ministry of Health and Sports (MSyD). Technical information and updates on the course of the epidemic in the countries of the Region were provided so that national authorities had parameters to use in modifying their decisions.

The technical information compiled by PAHO Headquarters (WDC) and shared with Representative Offices permitted an orderly flow of information and prevented e-mail systems from collapsing from an overload of traffic.

Experience sharing by professionals was facilitated throughout the Region; thus, these discussions among peers facilitated adjustments in decisions/proposals of MSyD authorities.

1. Public health response to the influenza A(H1N1) virus

The response to the pandemic was not the same in all departments (provinces), in part, not only because of the number of people affected and the severity of the illness, but also because of their degree of H5N1 preparedness. The level of complexity of the health services also had an influence.
Santa Cruz had the most cases and in fact, is where the first case in the country was reported. The sensitization of health authorities to public health emergencies after the dengue epidemic at the beginning of the year enabled the authorities to react swiftly, using the guides that the Organization made available. La Paz had the highest mortality in hospitalized patients.

The MSyD gradually assumed leadership of the response at the national level, despite the small number of people assigned to the issue.

Work was done to develop standard criteria for responding, once cases were detected in the schools and other educational facilities; however, local pressures kept the criteria from being used as anticipated. Despite school closings in some departments, the virus continued to spread.

2. **Immediate investigation of outbreaks and strengthening of epidemiological surveillance**

The situation forced the opening of the National Liaison Center (CNE) and launch of its activities. The CNE received reports from the Departmental Health Services (SEDES), consolidated them, and kept the information on Bolivia up to date, using International Health Regulation standards. In Santa Cruz, a daily reporting system was set up to monitor the health services’ response capacity. These achievements should be replicated in the country’s different departments, while improving the capacity for analysis and publication.

3. **Laboratory**

With regard to diagnostic processes, aid was provided for obtaining the necessary supplies for quality diagnosis in the country and to shorten diagnosis time, eliminating the exclusive dependence on international reference centers. Thus, three laboratories now have the ability to perform tests using RT-PCR.

4. **Immunization**

A donation of 600,000 doses of seasonal influenza vaccine by PAHO was arranged, the first national influenza vaccination campaign targeting risk groups was held, and the 2010 seasonal influenza vaccine was introduced for children from 6-23 months, adults over 60 years of age, the chronically ill, and health workers.

In addition, training was provided to national and departmental authorities from the Expanded Program on Immunization (EPI) on how to prepare the national pandemic influenza vaccination plan. There was participation in the meetings of the National Immunization Committee (CNI) to determine the priority groups to be vaccinated and monitor aspects of the influenza A(H1N1) pandemic response preparedness plan.

5. **Health care**

Once the epidemic began, oseltamivir was obtained and distributed to the Ministry of Health and Sports, which in turn distributed it according to the reported use by the departments. PPE was also distributed at the same time, using the same methodology. Specific treatment guides were
prepared, based on those for the response to H5N1. As new information arrived, it was incorporated into treatment protocols. This information was disseminated through workshops held in each department.

Although the protocols focused on hospital care, information was designed and distributed to the public on the first steps to take in caring for a family member with a probable A(H1N1) infection.

Many health facilities made temporary arrangements for the triage of patients who were probably infected. Structural (permanent) changes have been made at the Viedma complex (Cochabamba). Most of the referral health services with beds equipped isolation rooms. In some cases, this was a temporary adaptation, and in others, greater use was made of rooms already assigned to this purpose.

The processes for patient referral between services in increasing order of complexity improved over time, but overwhelmed the referral hospitals.

In the intensive care units (ICUs), treatments were gradually adjusted, since many patients had underlying problems, making it necessary to respond individually. This experience was systematized with the help of a Chilean doctor specializing in intensive care and this protocol is being reviewed more extensively with other professionals in charge of ICUs at the national level.

In the beginning, treatment of ambulatory patients was delayed while awaiting laboratory results. It became necessary to proceed with treatment based on clinical information, and this resulted in excessive demand for treatment in the hospitals since people went directly to the hospitals and not to services at a lower level of complexity. This was also due to the centralized management of the drug.

No adverse drug reactions were reported.

6. Health promotion, communication, and sensitization

In the area of health promotion and disease prevention, the health and education sectors worked together on an initiative known as the "Plan for the Prevention, Detection, and Referral of Cases of A(H1n1) Flu in the School-Age Population." The Child Health and Communicable Disease areas, as part of the healthy schools component of the Environmental Health Program, developed an operational proposal that included hand washing, the preparation of alcohol gel, referral to health services, and the publicizing of seven key health and nutrition practices for young children (community nutritional IMCI Integrated Management of Childhood Illness). This package was implemented in schools in Santa Cruz (680), Cochabamba (121), La Paz (458), and El Alto (87), making it possible to reach approximately 1,500 schools.

The proposal to stress hand washing in the schools to reduce transmission was adopted at several schools with positive, even unexpected, results. Preliminary observations recorded a reduction in the incidence of diarrheal diseases (to be corroborated).
Communication efforts began with the preparation of a strategy for A(H1N1) flu and raising awareness about it. This was followed by the selection, validation, and preparation of communication materials [A(H1N1) prevention posters, hand washing posters, brochure on influenza, a CD for children with games to promote healthy habits]; three television spots on hand washing; publication of the materials on the PAHO website; and workshops with journalists and experts on the issue about the proper handling of information about “influenza A.” The National Plan for Risk and Outbreak Communication was also prepared, which involves the heads of communication from the Ministries of Education, Defense, Foreign Affairs, and Planning.

7. **Planning, coordination, and logistics**

In the PAHO/WHO Representative Office-Bolivia, a technical committee was formed for planning response activities and developing a work plan that included the lines of intervention, and for coordinating with the Epidemiology Unit in the Ministry of Health and Sports for the respective monitoring.

In addition, PAHO/WHO participated in meetings of the National A(H1N1) Response Committee, and the necessary support was provided through the Decentralized Technical Cooperation offices, in conjunction with the SEDES.

As part of interagency coordination, information was provided to U.N. System personnel, the plan was reviewed, and official U.N. physicians were updated on severe acute respiratory infections (SARIs). Information management and activity coordination was done through the United Nations Department of Safety and Security (UNDSS) and the United Nations Emergency Team (UNETE), with support from the United Nations Information Service (UNIS).
Brazil

Highlight 1
- Strengthened national laboratory network for influenza A(H1N1) diagnosis.

Highlight 2
- Activities for risk communication supported.

Highlight 3
- Translation into Portuguese of technical documents and their dissemination on institutional website.

1. Public health response to the influenza A(H1N1) virus

During the first days of the pandemic in Mexico, there was constant contact with the central office, and epidemiological information was shared with Brazilian Ministry of Health (CIEVS/SVS/MS) authorities. A significant challenge at the beginning was responding to the demands of the mass media, for which daily press conferences were held (in the first two weeks) reporting on the first results of the operations research in Mexico, epidemiological data, and general measures and recommendations for the population. An interprogrammatic group was activated in the Representative Office in Brazil to monitor the clinical course of the pandemic and interact with national counterparts.

2. Prompt investigation of outbreaks and strengthening of epidemiological surveillance

Considering the recommendations for responding to the pandemic, the Brazilian Ministry of Health (MS) strengthened epidemiological surveillance at ports and airports through the Health Surveillance Agency (ANVISA) and the Strategic Health Surveillance Information Center (CIEVS), which coordinates national surveillance of events of public health concern. CIEVS is part of the liaison center for implementation of the International Health Regulations, and it monitored the pandemic daily, evaluating and applying the standards and case definitions for surveillance, prevention, and treatment strategies. Representatives from CIEVS and ANVISA participated in the weekly conferences at PAHO Headquarters that the Headquarters team held with all the countries of the Region, reporting on the course of the pandemic and the recommendations for surveillance, prevention, and health care.

3. Laboratory

PAHO funds were allocated for meetings of the directors of the principal national laboratories and for procurement of the supplies necessary for diagnosis of the specific type of influenza. These meetings made it possible to support the standardization of techniques for correct diagnosis and were led by the national influenza reference laboratory at the Oswaldo Cruz Foundation.

Pan American Health Organization
Report on Funding for Pandemic Influenza H1N1
4. Immunization

Seasonal influenza vaccine for people over 60 years of age and children is part of the basic series provided for by the Brazilian Ministry of Health. Plans were developed to procure the specific influenza A(H1N1) vaccine through the Revolving Fund.

5. Health care

The Ministry of Health, through press releases, disseminated information on disease prevention measures, made recommendations, and provided information about the network of state and metropolitan health networks with the capacity to provide care and treatment for cases. Similar instructions were given to the national primary health care network by the family medicine teams widely established in the country, which make up the primary care network of the Unified Health System. An important aspect was the dissemination of information on dosing and presentations of oseltamivir as an antiviral capable of preventing serious forms of the disease when administered in a timely manner. The transparent information on epidemiological data, associated risks of mortality, laboratory information, and information on intervention and care for serious cases—which the Secretariat of Health of Mexico provided and disseminated—was extremely useful to Brazil’s Ministry of Health for the development of its intervention strategies.

6. Health promotion, communication, and sensitization

A window with information on the influenza pandemic was created on the PAHO-Brazil website. This information included press releases, epidemiological data, and technical documents. Some of this was linked to contents disseminated by the website of our Headquarters office as well as that of WHO. Documents identified as a priority were translated into Portuguese, some of them at the request of the Ministry of Health. Furthermore, experts in the area of risk communication were available to work and share experiences with the communication team of the Secretariat of Health Surveillance of the MS. Brazil did not take steps to restrict or cancel flights from Mexico.
7. Planning, coordination, and logistics

The PAHO Representative Office in Brazil, through the interprogrammatic working group, set up a temporary health situation room for the systematization, document archiving, and epidemiological analysis of the influenza pandemic. This information was shared with the staff inside the Representative Office, the United Nations system, the Ministry of Health, and the general public, through Web 2.0.
1. Public health response to influenza virus A (H1N1)

Under the leadership of the Division of Health Planning and the Epidemiology Department of the Ministry of Health, in 2005 the country produced a Preparedness Plan for Pandemic Influenza, an initiative driven by the emergence of human cases of H5N1 avian influenza in Hong Kong. This plan provided five areas of and the overall coordination by the Minister of Health once person to person transmission was confirmed, until another government authority was assigned. The updated Plan was approved by Supreme Decree No. 86 of 23/10/2008.

The detection of swine influenza H1N1 in Mexico immediately activated all coordination mechanisms to prevent the disease from entering the country, with the support of PAHO from both Headquarters and the Country Offices, accompanied directly by the National Health Authority. PAHO also participated in the Committee for Crisis Response of the UN System and coordinates the specific technical group related to the Pandemic. The country implemented an intense communication campaign and took preventative actions at points of entry into the country, particularly at international airports. Evidence emerged that the entrance was through the South – the Lakes Region - where the morbidity was one of the highest. PAHO financial and technical support was requested for that particular Region which led to strengthening of the health sector in the lakes region in order to detect, respond and monitor epidemics.

The management of the pandemic was structured on the basis of four stages namely: Slow the onset of cases, ensure the operation of the health network, reduce the number of sick people and reduce the health, social and economic impact. The way the Ministry of Health tackled the entire course of the pandemic was highly successful. This fact was fully recognized not only within the country but by various external entities from other countries and by international technical cooperation institutions.
2. Immediate investigation of outbreaks and strengthening of epidemiological surveillance

During the month of April, a Regional Workshop for the Review of the Operational Guidelines for Sentinel Surveillance of influenza like illnesses and serious respiratory infections was held in the city of Santiago de Chile. In the month of May, the Ministry of Health (MINSALUD) updated the Clinical Guide for Case Management. PAHO’s staff maintained constant communication with health authorities and sent an epidemiologist from headquarters to visit the country, which actively joined the work at both the national and local level. Isolation areas were implemented in 60 hospitals and they were equipped with all the conditions to make lab tests and initiate treatment. PAHO mobilized experts and technological resources which assisted local staff to evaluate the actions that were implemented to prevent and then control the epidemic. The National Link Center (“Centro Nacional de Enlace”) operated in full coordination with PAHO and with 15 Regional Link Centers (“Centros de Enlace”), maintaining updated information on the course of the disease which helped align control activities. The strengthening of the Sentinel Surveillance of the Emergency Centers was supported and the local and regional staff were trained.

A Workshop on Outbreak Research was organized in coordination with the Department of Epidemiology, with the participation of officials from all regions of the country and from various units related to the topic including laboratory services. At the same time, research was conducted about the development of the epidemic, identification and description of outbreaks, and clinical severity. It included research of hospital contacts, work and school absenteeism as a consequence of the epidemic and effectiveness of alternative strategies for prevention/control in educational establishments, among others. Situation rooms were also implemented in two regions ("pilots"), namely Los Lagos and Los Andes and strengthened institutional capacity through the recruitment of staff.

3. Laboratory

With strong technical and financial support from PAHO, the country strengthened its diagnostic capacity at both the national reference level represented by the Institute of Public Health and the regional level. Six regional laboratories (Antofagasta, Los Andes, Concepción, Temuco, Valdivia and Los Lagos) were fully strengthened with equipment and reagents and trained technicians; they had the collaboration and mobilization of CDC experts mobilized by PAHO. The country already has the capacity of technical molecular diagnostic for case confirmation and typifying strains and has a network system that allows immediate knowledge of test results.

4. Immunization

PAHO provided technical information on the availability of vaccines and the effectiveness (or lack of) of seasonal influenza vaccination in preventing the H1N1 virus.

5. Health Care

PAHO supported the purchase of 2,500 items of personal protective equipment (PPE) for health personnel. It also supported the purchase of antivirals, the reviewing of the instructions for use of
antiviral treatment, and everything related to the development and dissemination of standards and protocols for the management of patients and collecting and sending samples. Also PAHO actively participated in the process of training of personnel and in terms of information systematization.

The country had a Plan to Upgrade its Assistance Program enabling Outpatient Specialty Centers, extending opening hours at clinics and personnel recruitment, enabling at least one APS Center per commune to specifically treat patients that present influenza like symptoms, defining TRIAGE, implementing a Centralized Management Unit of beds and the distribution of treatments for Hospitals and Clinics, both public and private.

6. Health Promotion, communication and awareness

Since the disease was detected in Mexico, the country's highest political authority decided that the Minister of Health was to lead all the actions to establish comprehensive and ongoing information to the community. PAHO took an active part in the process of articulation with the health authorities, and prompted that the SNU channeled through the PAHO’s country office any consultation or intervention related to the topic. Posters, leaflets, flyers were produced and daily press conferences were generated. PAHO’s country office was constantly consulted by the media, and the authority of the Ministry of Health was the authorized spokesperson to report on the situation. PAHO strongly supported training and updating processes in risk communication and maintained permanent contact with the CNE.

PAHO was highly effective in maintaining consistent and timely updated scientific and technical information about the development of the Pandemic and the measures for their control.

7. Planning, coordination and logistics

The whole process of prevention and care of the pandemic led by the Ministry of Health had the ongoing direct support of PAHO’s country office as well as headquarters. There was a huge mobilization of human, physical and financial and resource acquisition, in support to identifying suppliers of equipment and supplies.

In the framework of SNU, PAHO led the process of prevention and care through the Interagency Crisis Group.
ECUADOR

Highlight 1
- Strengthening Ministry of Public Health governance and leadership and the technical cooperation role of PAHO/WHO.

Highlight 2
- Increasing public confidence in the health authorities through appropriate internal and interinstitutional coordination and clear, timely, and transparent information management.

Highlight 3
- Increasing the response capacity of higher-complexity health services.

1. Public health response to the influenza A(H1N1) virus

The Ministry of Public Health (MSP), with PAHO support, had begun preparations for addressing a potential avian influenza pandemic, pursuant to the recommendations of the World Health Organization (WHO). With the appearance of the influenza A(H1N1) virus, the MSP reactivated its processes, adapting them to the circulation of the new virus, the geographical proximity of the virus’s origin, and the WHO alerts.

Based on the organizational structure for avian influenza, the MSP reactivated its National Interinstitutional Commission, and the National Emergency Operations Committee (COE-Nacional), in which PAHO actively participated. Also involved are the Ministry of Internal Coordination, the Armed Forces, the Ministry of Agriculture, the Ministry of Environment, the Ministry of Education, the Ministry of Tourism, and others; the MSP was the lead agency. The MSP also reactivated its internal Influenza Commission, which includes the PAHO consultants as a priority and integrated approach to cooperation.

The President of Ecuador decreed a national emergency to facilitate the mobilization of resources, and a media campaign was begun that included production of information through various media, targeting different audiences.

Protocols and the National Plan were updated during the different alert phases.

PAHO mobilized resources to plan and carry out the first activities.

Handling the pandemic gave the MSP a platform for exercising governance and leadership of sector institutions. Noteworthy in this area was the immediate standardization of epidemic management criteria among the different institutions, including those of the private sector.
2. Prompt investigation of outbreaks and strengthening of epidemiological surveillance

Based on the surveillance protocols for influenza-like illnesses (ILIs) and severe acute respiratory infections (SARIs), recently updated as part of the preparatory phase, strengthening of the sentinel hospitals was initiated; the protocols were modified and disseminated; and staff were trained in case identification, reporting, and investigation. PAHO was an active part of this process.

Referral hospitals were selected in the two largest provinces (Quito and Guayaquil), concentrating technical competency for patient care. Triage units were set up in both.

A satellite telephone was provided for monitoring the emergence of cases at the national level, and posters with algorithms were prepared for distribution to all health services.

Experts were mobilized to share the lessons that had been learned in Mexico.

3. Laboratory

The national public health laboratory network was reinforced to enable it to process samples from suspected cases from around the country.

Techniques were adopted for molecular diagnosis and case confirmation and typing of the circulating strains using real-time polymerase chain reaction (PCR) in the laboratories of the National Institute of Hygiene and Tropical Medicine (INHMT) in Guayaquil and Quito, following on-site training of technical staff, which permitted immediate use of the new equipment with the new techniques recommended by WHO.

Funding was provided for operating costs in connection with the RT-PCR equipment, diagnostic reagents, other basic supplies, and transport of samples.

Biosafety measures were improved for the collection of samples and their transport, handling, processing, and storage.

Coordination between the INHMT (National Influenza Center) and the Centers for Disease Control and Prevention (CDC) was facilitated for the validation of results. PCR equipment and materials for compliance with international regulations for the transport of infectious substances were donated and training provided.

4. Immunization

The country has participated in the training workshops held by the Immunization Unit of PAHO.

Specific technical guidelines have been drafted for the vaccination campaign.

The country is increasing its storage capacity with its own resources.
5. Health care

Measures were proposed for transmission control at mass events held at the start of the pandemic. MSP received support for issuing new case management protocols (for ambulatory and hospital management). For each new pandemic phase these were updated for managing patients with influenza A(H1N1)-associated pneumonia and respiratory management of patients with influenza A(H1N1)-associated pneumonia. The measures were validated in coordination with intensive care physicians, pediatricians, and infectious disease specialists from the country’s principal public and private Institutions.

Emergency efforts were begun to procure antivirals (MSP purchase and PAHO donation), distribute health service protocols, train health workers, and procure equipment needed for patient care, including personal protective equipment.

With the collaboration of the Pan American Association for Infectious Disease (API), under the coordination of the MSP, several training sessions were conducted for health workers at private institutions to improve timely detection and treatment, as well as reporting. Furthermore, information dissemination and training were done in collaboration with the Association of Private Clinics and Hospitals of Ecuador (ACHPE). A tool was made available to the MSP for calculating needs, and guidelines and instruments were prepared for setting up the triage areas at the Dr. Eugenio Espejo Hospital, the national referral center.

Technical cooperation was provided for conducting a survey in all provinces and systematizing the information, using special software.

The treatment protocols included the referral of mild cases to home-based isolation, with assistance from the Basic Health Care Teams (EBAS).

6. Health promotion, communication, and sensitization

Information management, spearheaded by the MSP, was one of the achievements of the pandemic response. PAHO/WHO was an active participant in the MSP’s Strategic Communication and National Influenza Committees.

The information produced made it possible for the public to receive information about the nature of influenza A(H1N1), the principal measures for preventing it, its symptoms, action to take if infected with the influenza A(H1N1) virus, as well as Ministry of Public Health efforts to handle the emergency through a website and a hotline (1-800) for questions from the public. This led to a public that was on the alert but calm, putting the measures publicized into action. Information was timely, clear, and transparent and was disseminated through press conferences, daily bulletins, audio and video spots, printed matter (posters, pamphlet with frequently asked questions, a guide for journalists, material for the education sector), and meetings with journalists.
Information for health professionals was produced and disseminated: frequent questions and answers, treatment protocols—which were updated on two occasions—and measures to prevent infection in health facilities.

Training was provided for the spokespeople for the epidemic, defined in the crisis communication standards and guidelines, emphasizing the importance of transparency, timeliness, trust, analysis of public concerns, and keys to getting the messages across.

It should be pointed out that communication was monitored, which involved analyzing the information in the press, as well as a study of the knowledge, perceptions, and practices related to the influenza A(H1N1) pandemic in the cities of Quito and Guayaquil. This enabled the authorities and technical personnel to adjust their pandemic response strategies.

Also important was the systematization of the pandemic response experience, to document the action taken and the factors that contributed to its outcomes through discussion with the different actors participating in the response.

7. Planning, coordination, and logistics

During the emergency response, the MSP was at the head of the National Emergency Operations Committee (COE), with the participation of other ministries (Domestic and Foreign Security, Education, Defense, Agriculture) and the National Secretariat of Risk Management, and technical support from PAHO. These COEs made general decisions about how to deal with the epidemic, bringing in other agencies and public and private health institutions. Initially, the activities focused on the containment phase at Quito and Guayaquil airports, border posts in Carchi and El Oro provinces, and at the ports of Guayaquil, Esmeraldas, Manta, and Puerto Bolivar, sending human resources to all these sites.

Primarily, it was the provinces of Guayas, Carchi, Esmeraldas, Manabí, and El Oro, along with the health authorities that activated the health sector COEs (COE-S) to strengthen the interinstitutional response, making use of information resources and readying ambulances from the MSP and other institutions.

The MSP reactivated the National Influenza Commission, made up representatives from the epidemiological surveillance, health services, environmental health, and communications areas, which worked together with the PAHO consultants.

MSP activities were reported to the Situation Room, which worked continuously, staffed by trained health workers who compiled information and monitored the provinces via the Internet, using video conferences to link up with the Provincial Directorates.

Biosafety training and equipment were provided to personnel in the EBASs. Workshops on damage assessment and needs analysis (DANA) for the health sector used a DANA tool adapted for the emergence of influenza. Training was provided on the use of surveillance and containment protocols. The EBAS teams made home visits.
The Disaster Focal Points supported activation of the Hospital Emergency Plans, which were updated using the criteria in the National Influenza Plan. Active observation and surveillance teams were organized in Quito and Guayaquil hospitals, which monitored travelers in ports and airports using devices to monitor body temperature.

PAHO led the U.N. Crisis Committee for dealing with the influenza A(H1N1) pandemic, creating internal protocols in the framework of the guidelines for the government health sector.
Guyana

IN THIS BOX, PLEASE DESCRIBE YOUR THREE MAJOR ACHIEVEMENTS/IMPACTS/ACTIVITIES

WDC WILL PLACE MAP HERE

- Capacity of the National Public Health Reference Laboratory (NPHRL) strengthened
- Increased Surveillance
- Health Workers trained to use PPE, and treatment for Pandemic Influenza (H1N1) made available

In three pages maximum,

- Describe the impact of PAHO’s cooperation in the first 6 months
- What were the major challenges?

1. Response to public health emergencies
   The main accomplishment in this component was the finalization of the composition of health teams for emergency pandemic response in Guyana. In this regard the PAHO/WHO team supported the National Influenza Preparedness Committee from the MOH on H1N1. This committee comprised of the key stakeholders from the health sector and civil society to manage the epidemic. The National Influenza Pandemic Plan was reviewed, revised and updated. The National Disaster Preparedness Plan was also reviewed.

2. Outbreak investigation and strengthening surveillance
   The PAHO/WHO Influenza Focal Point worked very closely with the MOH counterparts in the strengthening of surveillance activities. Technical support was also provided to different regions (2, 3, 4) as well as to the Georgetown Public Hospital Corporation (GPHC) in relation to outbreak investigation, data collection, management and analysis. The PAHO/WHO Country Office provided training for the immediate implementation of an improved National Epidemiological Surveillance System which included recommendations for better data collection and reporting.

   In many instances, health workers in the regional services received special training for strengthening the capacity for H1N1 surveillance. Resources available for Pandemic Influenza H1N1 were used to purchase computers, multifunction printers/fax machines, radio phones for 3 points of entry and other devices to strengthen the capacity of the MOH.

Pan American Health Organization
Report on Funding for Pandemic Influenza H1N1
The Health Systems and Service (HSS) Program, reviewed and discussed with the Chief Medical Officer (CMO) and other technical counterparts all guidelines and protocols for H1N1. These were disseminated to the National Committee for H1N1.

Funding for pandemic influenza H1N1 was used to purchase Personal Protective Equipment (PPE) and other important items of support, including: ventilators and other oxygen equipment. In all health facilities around the country, Oseltamivir was made available and PPE kits distributed. The MOH completed the checklist on the status of Health Facility Preparedness for an Influenza Pandemic and based on the findings, an Action Plan was prepared. A special form for the Medical Records of Patients was designed and implemented. Further, thirty (30) Medical Extenders (MEDEX) health care providers received special training in Pandemic Influenza.

6. Health Promotion, Communication and Advocacy

Training workshops were conducted for MEDEX students, General Practitioners, Regional Health Officers, Environmental Health Officers, and Administrative Staff on Pandemic Influenza H1N1. These workshops included Risk Communication; Sample collection in suspected H1N1 cases; and demonstration of proper use of PPE.

IEC materials were developed and printed. These included posters to demonstrate proper hand-washing procedures, Health Alerts and Information on Influenza A (H1N1) these were also distributed to the points of entry, hospitals, health centers and clinics. Relevant information is being circulated among the technical team to facilitate comprehensive dissemination of information. There was a high level of participation from the country team in all H1N1 Illuminate Sessions.

The training workshop with Links Media was realized from January 26-29-2010 with participation from Ministry of Health, Ministry of Education, University of Guyana, Regional Health Services, Ministry of Tourism, Red Cross, Georgetown Public Hospital corporation, Environmental Protection Agencies and some few members of the National Influenza Pandemic Subcommittee. The workshop was to develop the Operational Communication Plan.

In many cases the Minister and other high level Officials publicly recognized the role of PAHO/WHO in supporting the response to Pandemic Influenza H1N1. The media coverage was an important part of this recognition as seen in the attached article from a local newspaper on “Public Education Crucial to Addressing Swine Flu”

7. Planning, coordination and logistics

Monthly meetings were scheduled by the National Influenza Preparedness Committee to assess the status of the country for appropriate actions.

Mr. Colin Browne, Public Health Specialist from the PAHO/WHO Office for the Eastern Caribbean Countries (ECC) visited Guyana (December 14-19, 2009) and conducted an
to collect and analyze data. Emergency requests by the authorities at points of entry in the
country for technical support were also accommodated as follows:

- Computer Systems, stretchers, health information cards as outlined in the
  International Health Regulations.
- Three Health professionals were hired to provide 24 hours coverage at the Cheddi
  Jagan International airport.
- Information updated and disseminated to the airport and this port of entry.
- Patient triage procedures defined and implemented.

The Director of the National Public Health Reference Laboratory (NPHRL), the
surveillance officer from the Ministry of Health and the Influenza Focal Point at the
PAHO/WHO Guyana Country Office attended the 10th meeting of Caribbean National
Epidemiologists & Laboratory directors held in Trinidad & Tobago (October 11-17, 2009)
which was organized by the regional office of PAHO/WHO. The Ministry of Health
through support from PAHO/WHO designed and implemented a “Daily Syndromic
Surveillance Tally sheet” and other relevant forms.

2. Laboratory strengthening

PAHO/WHO supported the country through the Caribbean Epidemiology Center (CAREC)
for H1N1 testing. Other important Technical cooperation provided included, support to the
NPHRL to increase the capacity for the diagnosis of Influenza in general and H1N1 in
particular; for this reason the funding for Pandemic Influenza H1N1 was used for the
procurement of fluorescent microscopes, RT DNA PCR machine and the Applied
Biosystems Step One plus. This equipment has the capacity to screen for H1N1 as well as
other viruses and sets the stage for further advancement and broadening of the testing
capability in influenza and other areas. Additionally, there was collaboration with Guyana
and CDC Atlanta, which funded the reagents, other consumables and training for the
NPHRL staff. Specific PAHO/WHO technical cooperation included increased training for
the technicians in the NPHRL to handle the H1N1 samples.

4. Immunization

The focal point for vaccines and immunization used the opportunity for
strengthening the capacity of the National Program for response to seasonal
influenza and procured the containers for transporting these vaccines. The country
was therefore, able to vaccinate over 95% of its target population for seasonal
influenza. Guyana’s Immunization Plan for Influenza A H1N1 was also reviewed,
revised and updated.

5. Continuity of health care
assessment of the main points of entry to determine the degree of readiness to implement the International Health Regulations 2005 (IHR). Recommendations were made to address any weaknesses identified.

The CMO of Guyana also participated in workshops in Miami which shared lessons learned and identified future challenges for pandemic influenza. In addition, health personnel from Guyana attended a sub-regional Workshop on Pandemic Influenza Preparedness and Response: the Caribbean Experience in Barbados; and another in Trinidad and Tobago on Occupational Health.

**Major Challenges**

Among the major challenges identified were:

1. Difficulties organizing meetings with all members of the Committee.
2. The need to continually remind health facilities to train staff in H1N1 and conduct simulation exercises.
3. Sample collection
4. Data collection and epidemiological follow-up
5. Logistics support
PARAGUAY

Highlight 1
- Upgrading the diagnostic capacity of the Central Public Health Laboratory.

Highlight 2
- Strengthening the situation room of the Ministry of Public Health and Social Welfare.

Highlight 3
- Building risk communication capacity.

1. Public health response to the influenza A(H1N1) virus
   - Support was provided for reactivation of the regional response teams that coordinate with the central level.
   - Coordination was arranged between national public health authorities and the other countries of the Region, which helped keep the national authorities up to date on the status and course of the pandemic. At the same time, efforts were made to facilitate agreements between neighboring countries to deal with the pandemic.
   - There was collaboration in the review and updating of the national A (H1N1) pandemic plan.

2. Prompt investigation of outbreaks and strengthening of epidemiological surveillance
   - Support was provided for outfitting the situation room, the formation and operation of rapid response groups, and optimization of the databases and analysis capacity.
   - Support was provided for the preparation and dissemination of daily bulletins and operation of the regional situation rooms. To this end, four national professionals were hired.

3. Laboratory
   - Because of the lack of in-country diagnostic capacity, suspected-case samples were sent to the Centers for Disease Control and Prevention (CDC) during the early stages. Subsequently, equipment for diagnosis using real-time polymerase chain reaction (PCR) was installed at the Central Public Health Laboratory, local personnel were trained, and reagents were provided for the laboratory’s operation during the most critical months of the epidemic.

4. Immunization
   - No immunization activities were carried out with donor funds.
5. Health care

- Biosafety supplies were initially procured for health service personnel.
- The response capacity of the main hospitals in Asunción and Central was evaluated and support was provided for training health services personnel in general and emergency and intensive care personnel in particular.
- Patient care flowcharts were published, and the first shipments of oseltamivir were received.

6. Health promotion, communication, and sensitization

- Support was provided for the formation of the intersectoral technical group, which mainly included the Ministry of Health, the Ministry of Education, the Ministry of Agriculture, the private sector, agencies of the United Nations system, and bilateral support agencies, to coordinate the content of the messages to be disseminated to the public and to make efficient use of resources. This group identified priority population groups such as travelers and schools, producing specific materials for them.
- Working with the epizootic committee, biosafety guides for pig farms were designed with messages for livestock producers on how to keep the virus off of farms.
- The proposed internal communication diagrams for risk communication in emergencies were put into use.
- Support was provided to the Ministry of Health for the reproduction of educational materials and for equipment for the Bureau of Promotion and the Bureau of Communication.
- A call center for the public was equipped.

7. Planning, coordination, and logistics

- Communication and information capacity was strengthened for PAHO-Paraguay professionals involved in the pandemic response.

Challenges

- Boosting the administrative capacity of our Organization to respond in a timely and appropriate manner to situations such as the one created by the influenza pandemic; The countries should have the capacity to implement streamlined contingency mechanisms to reduce cumbersome customs requirements, which at times become the central problem in producing an adequate response.
- Ensure that the regions are more closely involved in alerts and response. In all areas: surveillance, laboratory, care, promotion, communication.
- Improve intersectoral response - In Paraguay, the burden fell excessively on the health area, and, with the exception of education, the participation of other sectors was less than desirable.
PERU

REPORT ON THE FUNDS USED IN THE PROJECT “RESPONSE TO THE EMERGENCY CREATED BY THE NEW INFLUENZA A (H1N1) VIRUS”

Summary

The funds received in the Representative Office in Peru for response to the influenza pandemic were aimed at strengthening coordination, epidemiological surveillance, logistics, health services, and the immunization component, although in Peru the pandemic did not reach the emergency levels reported in other countries. The preparations and planning were efficient, effective and appropriate to the country’s conditions and capacities. The technical assistance from the Representative Office was especially important in dealing with the news media, applying the lessons learned from other countries to organize the response, lending support for coordinating the response, and providing technical information and supplies (PPE, diagnostic testing kits, and other supplies). As part of the Representative Office’s work, support was provided to the Ministry of Health for the preparation of the National Pandemic Response Plan and to the Civil Defense for the multi-sectorial contingency plan and response to this disease.
**Use of the funds**

The PAHO/WHO Office in Peru provided technical support to the Ministry of Health, the national health authority, and the National Civil Defense Institute, the steering body and coordinator of different sectors in times of disaster. The technical assistance was provided promptly, from the time the risk of the international spread of influenza was first identified, with attempts to reinforce the preparedness processes of the Ministry of Health in its 2005 plan and provide the scientific information essential for decision-making by the national health authority.

The assistance provided by the Representative Office was efficient and effective, focused on strengthening the preparedness and response of the national authority, using PAHO/WHO funds to carry out the following five of the seven activities included in the emergency response project proposal for dealing with the new influenza A (H1N1) virus.

1. **Public health response to influenza A (H1N1)**

The PAHO/WHO office maintained ongoing communication and coordination with the national health authority through the National Pandemic Preparedness and Response Committee, the body responsible for planning and response activities, including all the Ministry of Health directorates and offices (epidemiology, disasters, health services, laboratories, medicine, etc.). Technical assistance was provided for updating the national plan and disseminating it nationally and regionally.

![Figure 1. National Response Plan](image)

Also important was the constant presence PAHO/WHO in the National Committee on Communicable Diseases, an organ of the National Health Council, the coordinator of the Coordinated Decentralized National Health System, which brings together all public and non-public health organizations and organized civil society. This body was essential for disseminating knowledge about the disease and proposing coordinated response measures with all entities in the health sector.

It should be noted that from 2005 to 2009, the Representative Office worked jointly with the Ministry of Health to develop and implement preparedness activities for a potential avian influenza pandemic. This prior work has been indispensable in guiding the response measures for the A (H1N1) pandemic. PAHO has supported self-evaluation of the avian influenza plan by sponsoring two technical meetings and has brought national experts to the simulation exercises in the countries of the Region. Various international events have recognized the country’s influenza preparedness level.

Finally, the Ministry of Health has received support to maintain the focal point with WHO, a key element in the International Health Regulations for the countries’ national response to these types of epidemics. The teleconferences with Headquarters in Washington, D.C., in which the Minister and Vice Minister of Health participated along with ministry and civil defense officials, were essential for sharing information and experiences among the countries of the Region, which helped contribute to modifications in the interventions.

2. **Laboratory**

Activities focus on purchasing drugs, supplies, laboratory diagnostic kits, and personal protective equipment. These materials were distributed to the National Health Institute and other
branches of the Ministry of Health for prompt utilization. The immunization of at-risk groups against pneumococcus was promoted, especially in the High Andean regions, due to the increased risk of this disease in the winter season, which coincided with the appearance of the new influenza.

PAHO coordinated efficiently with the CDC to furnish the diagnostic kits for influenza A (H1N1), anxiously awaited by the national health authority. There was a delay in arrival of these kits, but finally they came and were delivered for use in country.

5. **Health care**
Timely support was provided for skills building among Ministry of Health personnel through a national meeting for the health service component, attended by more than 180 participants from all around the country. It included triage and treatment activities in the health reference centers and expanded training for health administrators and other personnel to respond to this new outbreak. PAHO also promoted the design of the training plan for health operators in all parts of the country.

*Figure 2. National Health Services Conference*

The Representative Office supported the dissemination of guidelines through the publication of treatment guides for influenza and pneumonia in children under 5, as the onset of the new disease coincided with the cold season. Characteristically, this season sees an increase in the number of children who die or come down with pneumonia in the poor Andean areas of the country.

recommend limited use of oseltamivir as chemoprophylaxis, restricting its use to case contacts and at health centers, when necessary. Centralizing the Ministry of Health’s procurement and distribution of the antiviral with PAHO support, was a realistic and appropriate measure that reduced indiscriminate use of the vaccine when there is no technical basis for it.

6. **Health promotion, communication, and public awareness**
Priority was given to promptly launching an information campaign for other groups of professionals and personnel without previous knowledge about this type of epidemic. Information was shared within the PAHO/WHO office, which succeeded in putting all technical units and personnel on the same page in addressing the epidemic.

PAHO/WHO supported the dissemination of updated scientific information and information on the pandemic in the country through the constant appearance of the PAHO Representative and consultants in newspapers, radio, and television news. This presence has been important in keeping the population informed about the real extent of the disease and preventive measures to reduce its spread.

From the outset, the Representative Office’s message to the health authorities and the population was realistic, stressing that measures should focus primarily on reducing the impact on the population’s health and on service operations, given the impossibility of preventing this new influenza from entering the country. Press conferences were also held to give reporters the latest information and answer questions about the behavior of the disease. This was done to reduce the rumors and communicate effectively about the risk. The opportunity was also used to
underscore the importance of hand washing as an easy and effective strategy for reducing influenza transmission.

7. **Planning, coordination, and logistics**

Technical assistance was provided to the National Civil Defense Institute, the coordinating body in charge of drafting – along with the other sectors, public organizations, and brigades – the *Multisectoral Pandemic Preparedness Plan*. The document is part of the updating of the Ministry of Health’s national plan.

**Figure 3. Health Sector Coordination Meeting**

The Representative Office gave its full support to the civil defense throughout the coordination of inter-sectoral activities, providing information and updating reports on the disease’s advance at the international level.

PAHO provided timely support for capacity building among the staff in the Ministry of Health’s disaster program and other health organizations through two national meetings, attended by 150 professionals from Lima and other regions. Coordination of the response was improved, and the Ministry of Health’s treatment manuals were presented. These meetings, promoted by PAHO, were important for building capacity in other organizations such as Social Security, the armed forces and police health services, and municipal and private health services.

Although the animal health component has not been a priority issue in this first wave of the A (H1N1) pandemic, the Representative Office has been in constant contact with the Agricultural Ministry’s Animal Health Service (SENASA) and has supported the simulations that this entity has conducted.

The Representative Office spearheaded the U.N. system’s preparedness and response activities. A plan was prepared for the system, which was approved and disseminated. Assistance was also provided to the UNDP in the hiring of a national expert for the diagnosis, treatment, and monitoring of influenza cases among agency personnel and their families. PAHO’s dissemination of information to the U.N. agencies in the system was important, as was UNDSS’s coordination in the reporting of cases and the availability of timely treatment, where needed.

**Conclusions**

- The pandemic in Peru never reached emergency levels. The preparedness plans for H5N1 helped develop an efficient, effective, and appropriate response. PAHO’s contributions were especially important in handling media relations, reporting on how other countries were organizing their response, helping coordinate the response, and providing technical information and supplies.

- The Representative Office worked realistically on the application of plans, emphasizing the ineffectiveness of measures such as indiscriminately closing schools or restricting incoming flights from Mexico.

- The national authorities’ decision on flights was respected and the adjustments in the handling of the epidemic were acknowledged when they removed flight restrictions and focused on actions to mitigate the effects of the disease.
PAHO/WHO proposed realistic handling of the situation, avoiding the fueling the unrealistic expectations that the disease could be kept from entering the country or could be confined to a small geographical area. It was recommended that the interventions include serious scenarios, so that other sectors would actively participate in designing activities to ensure the operation of the country’s social and economic sectors to avoid disruption.

**Recommendations**

- Strengthen the Representative Office’s assistance to national authorities to respond promptly and efficiently to requests from the press.

- Help the country set up a public information structure to improve communication at the local level and in the most remote areas.

- Improve the health services’ response capacity, which calls for protocols and simple practical guides to be used by personnel; and expand training in case management, triage, and response to the new pandemic.
URUGUAY

Highlight 1
- Prepare and strengthen Uruguay to deal with communicable disease emergencies on a pandemic scale.

Highlight 2
- Promote teamwork and sound intra- and intersectoral coordination, from the national to the departmental (local) level, in communicable disease health emergencies.

Highlight 3
- Train human resources and equip national and departmental levels in the areas of epidemiology and laboratory.

1. Public health response to the influenza A(H1N1) virus

Uruguay had initiated a preparedness process with the Ministry of Public Health (MSP) and the Ministry of Livestock, Agriculture and Fisheries (MGAP) in 2004, culminating in the Comprehensive National Plan for Influenza Pandemic Preparedness in 2007. This Plan, modified by a technical working group, was the principal guide for the processes and decisions made in regard to the H1N1 pandemic.

The Ministry of Public Health, with immediate, continuous technical cooperation from PAHO, took action that:

- Prepared the Government Health Services Administration (ASSE), responsible for medical care in the public sector and among private sector health agents, to provide health care coverage that was never overwhelmed.
- Implemented the necessary epidemiological surveillance with laboratory support, which was clearly boosted from its initial level to the level it acquired after the emergency.
- Strengthened the 18 departmental levels outside the capital city, with the involvement of numerous institutions and sectors.

2. Prompt investigation of outbreaks and strengthening of epidemiological surveillance

Immediate outbreak investigation and epidemiological surveillance were established and strengthened, with:

- ASSE and MSP teams that worked in all departments of the country.
- Coordination with the private sector, especially with the mobile emergency services, which provided home care in Uruguay.
- Training for the human resources who processed and analyzed information, with special attention to severe acute respiratory infections (SARIs), influenza-like illnesses (ILIs), and influenza H1N1.
3. Laboratory

The support resulted in training, equipment, and technical assistance for the MSP’s Department of Public Health Laboratories, which spread throughout the departmental clinical laboratory network levels under ASSE and to the MGAP laboratory system, at whose center was the Directorate of Veterinary Laboratories (DILAVE).

4. Immunization

Seasonal influenza vaccination attained record coverage.

Human resources from the National Immunization Program received repeated training, and Uruguay intends to acquire 1 million doses of H1N1 vaccine, developing a plan for its administration. A coordinated technical working group is working on this.

5. Health care

It should be emphasized that Uruguay’s response capacity was never overwhelmed, from the primary levels to the highest levels of complexity.

A contributing factor is the special conditions in the country, which has broad home care coverage in the capital and the interior, dependent for the most part on private agents (prepaid, mutual, and similar insurance; and mobile medical emergency services), although ASSE, with PAHO support, developed some capacity focusing on children. This special feature of the Uruguayan services was used to avoid moving patients, institutional overload, or the concentration of patients in the doorways of hospitals and sanatoriums and emergency services.

6. Health promotion, communication, and sensitization

Uruguay had a national communication plan ready in the event of a contingency of this type, which had been prepared with input from all national entities that would ultimately participate in the national response. This joint preparatory effort was made possible with the initiative and facilitation of PAHO and was spearheaded by the Ministry of Health in partnership with the Ministries of Agriculture and the Presidency.

The plan had already been developed on in local workshops throughout the country’s interior, with the participation of communicators, local authorities, community leaders, non-governmental organizations (NGOs), departmental committees, etc.

The sensitization achieved at all levels essentially made three things possible:

I. PAHO was identified immediately as the reference agency.
II. There was naturally a single coordinated national response.
III. Sensitization of the authorities, the media, and the general public was a natural, peaceful, and logical consequence of everything mentioned above.
7. Planning, coordination, and logistics

It functioned in the best possible manner, apart from minor details that could be improved upon, making it possible to keep the public calm and deal with the pandemic reliably and without a crisis.
VENEZUELA

Highlight 1
- Strengthening Ministry of Health leadership in the influenza pandemic.

Highlight 2
- Strengthening care and management of influenza cases in hospitals, especially for pregnant women.

Highlight 3
- Strengthening the national reference laboratory’s influenza capacity.

1. Public health response to the influenza A(H1N1) virus

PAHO’s technical and financial cooperation enabled the Ministry of Health to have leadership in the pandemic response by strengthening the authorities’ ability to enlist support and negotiate with regional governments and other health stakeholders, especially scientific societies. In particular, the National Pandemic Plan and the hospital emergency response plans were reviewed and updated. Furthermore, there were opportunities for meetings on site and via Elluminate with the headquarters, regional health bureaus, and hospitals to coordinate effective, timely actions.

2. Prompt investigation of outbreaks and strengthening of epidemiological surveillance

Cooperation assistance was provided for updating procedures and instruments for the surveillance of respiratory infections, especially influenza, in all health facilities and at points of entry, as established in the International Health Regulations (2005).

3. Laboratory

With PAHO technical and financial cooperation, the National Influenza Center became the national reference laboratory for typing the A(H1N1) virus, in coordination with the Regional Reference Laboratory at the Centers for Disease Control and Prevention (CDC). Training was also provided on typing techniques, and materials and laboratory supplies were procured for this work. In addition, the sampling procedure for influenza cases was reviewed and updated.

4. Immunization

The opportunity was used to increase seasonal flu vaccination coverage and prepare health teams to administer the new A (H1N1) upon availability in the country. The country received support for defining the risk groups to vaccinate against the A (H1N1) virus and in determining vaccine needs. Vaccines were requested from the PAHO Revolving Fund and given the Ministry’s pro forma approval; payment would be made with funds from the Social Insurance Institute.
5. **Health care**

PAHO cooperation was initially the referral hospitals’ only source of personal protective equipment for suspected pandemic influenza cases. Case management protocols and guides were prepared for both the ambulatory services and hospitals, by age group (children, adults, and pregnant women). It provided a sizable number of doses of antivirals that complemented national procurement. Furthermore, PAHO’s procurement channels were used to acquire other antivirals with country funds.

6. **Health promotion, communication, and sensitization**

From the start of the pandemic, PAHO provided support and advice to high-level health authorities on dealing with the concerns of the media and the general public. Training for communications professionals was strengthened with risk communication techniques and procedures, emphasizing pandemic influenza. Support was provided for preparing plans for mass communication targeting the public (identification of audiences, development of messages and validation of materials).

7. **Planning, coordination, and logistics**

PAHO supported the preparation of operation plans for pandemic response and became the fastest logistical support mechanism for the procurement of health supplies and materials, and for mobilizing Ministry of Health personnel (air fare, per diem, etc.).