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INFLUENZA PANDEMIC: PROGRESS REPORT

Influenza is a viral disease that affects both animals and humans. When a new strain of influenza virus emerges and adapts to enable transmission from person-to-person in addition to animal-to-human transmission, the disease can quickly spread far and wide, resulting in a pandemic.

PAHO is actively promoting the development of National Influenza Pandemic Preparedness Plans (NIPPPs) and supporting Member States in this effort. Technical cooperation has also aimed at strengthening the supporting actions that are required in order to operationalize such plans, such as strengthening early warning systems and the response of health services. PAHO is also working with Member States to seek mechanisms to aid their decision to obtain antivirals and pandemic influenza vaccine, when available.

To make this technical cooperation possible, in August 2005, an interprogrammatic and multidisciplinary Task Force on Epidemic Alert and Response (the EAR Task Force) chaired by the Assistant Director was established to respond to the increased demand for technical cooperation posed by the emergence of an influenza strain with pandemic potential. The EAR Task Force has developed a Strategic and Operational Plan for Responding to Pandemic Influenza as well as the PAHO Staff Policy and Contingency Plan for an Influenza Pandemic.

PAHO's Secretariat is preparing to establish an Emergency Operations Center (EOC) at Headquarters as part of a Knowledge Center to serve as the hub of the PAHO-wide response any public health emergency of international concern as defined in the newly adopted International Health Regulations..

Preparedness activities for a possible influenza pandemic have propelled the search for interagency collaboration; sessions have taken place with the Inter-American Development Bank Board of Governors, the Permanent Council of the Organization of American States, and the World Bank, and international organizations like USAID.

The Subcommittee is requested to consider this report and endorse necessary actions to strengthen PAHO's cooperation.

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Background

1. Influenza is a viral disease that affects millions of people worldwide and kills approximately one million people annually. Influenza viruses are continuously evolving, and periodically their surface glycoproteins change. Constant, usually small, changes in antigenic composition, known as antigenic drift, cause annual outbreaks and require influenza vaccine composition to be changed annually. Major antigenic changes can occur resulting in the emergence of a novel influenza A subtype in humans. When such a new strain of influenza virus emerges and adapts to enable transmission from person-to-person, the disease can quickly spread far and wide, resulting in a pandemic.

2. In the last century, three pandemics occurred. The most devastating was the Spanish Flu of 1918-1919, resulting in an estimated 50 million deaths worldwide. The other two pandemics occurred in 1957-1958 (Asian Flu) and 1968-1969 (Hong Kong Flu), each one responsible for an estimated mortality in excess of 4 million people when compared to previous nonpandemic years. It is impossible to predict when the next influenza pandemic will occur. Nevertheless, it has been almost 37 years since the last pandemic, and the longest recorded interpandemic interval is 39 years. The burden of the next pandemic influenza outbreak is also difficult to predict, with estimates of at least 2 to 7 million deaths and tens of millions of persons requiring medical attention in a matter of several months.

3. Type A influenza is also responsible for outbreaks in animals, particularly in poultry. It is possible for avian influenza A viruses with pandemic potential to become endemic in poultry farms, particularly noncommercial production, small-scale commercial poultry farms, backyard flocks, and places where live poultry is traded. However, some poultry outbreaks of avian influenza viruses to date have demonstrated a surprising level of aggressiveness, surpassing biosafety precautions in larger-scale poultry farms with otherwise adequate sanitary precautions.

4. According to estimates from the Food and Agriculture Organization (FAO), the Americas are responsible for the production of 46.9% of the 67 billion tons of poultry produced worldwide each year and are the largest poultry exporting Region in the world (58.3% of 7.7 billion tons). Industrial production is concentrated in 12 countries which produce 98% of total poultry in the Region.[1] Nevertheless, only five countries are responsible for 99% of total exports.[2] In 2004, the FAO estimated that there were approximately 16 billion chickens in Latin America and the Caribbean. Also, several important activities are directly or indirectly dependent on the poultry industry such as grain production, trade, farming services, poultry transportation, among others.

[1] Argentina, Bolivia, Brazil, Canada, Chile, Colombia, Ecuador, Guatemala, Mexico, Peru, the United Status of America, and Venezuela.
[2] Argentina, Brazil, Canada, Chile, and the United States of America.

Considering the scale of poultry production in the Region, outbreaks of highly pathogenic avian influenza A viruses with high transmissibility, morbidity, and mortality would have a major economic impact on the Region.

5. Evidence indicates that influenza virus A H5N1 is now endemic in parts of Asia, having established a permanent ecological niche in poultry and also expanding its mammalian host range. The detection of highly pathogenic H5N1 in dead migratory birds implicates migratory waterfowl in the evolution and maintenance of highly pathogenic H5N1. In February 2006, several European countries began reporting cases of H5N1 in wildlife, mostly swans (*Cycnus olor*). The virus seems to be spreading westwards, from Turkey to Italy and Germany.

6. The first instance of a recent cluster of severe infections of humans with an avian influenza A virus was documented in Hong Kong in 1997, with H5N1 virus causing respiratory disease in 18 humans, of whom 6 died. This cluster coincided with an epidemic of highly pathogenic avian influenza A (H5N1) in Hong Kong's poultry population. Extensive investigation of that outbreak determined that close contact with live infected poultry was the source of human infection. From December 2003 until 27 February 2005, the total number of cases are described in the following table.

Table 1. Worldwide Occurrence of Highly Pathogenic Avian Influenza (H5N1) in Humans, December 2003-27 February 2006

	2003		2004		2005		2006		Total	
Country	**cases**	**deaths**	**cases**	**deaths**	**cases**	**deaths**	**cases**	**deaths**	**cases**	**deaths**
Cambodia	0	0	0	0	4	4	0	0	4	4
China	0	0	0	0	8	5	6	3	14	8
Indonesia	0	0	0	0	17	11	10	9	27	20
Iraq	0	0	0	0	0	0	1	1	1	1
Thailand	0	0	17	12	5	2	0	0	22	14
Turkey	0	0	0	0	0	0	12	4	12	4
Vietnam	3	3	29	20	61	19	0	0	93	42
Total	3	3	46	32	95	41	29	17	173	93

Note: The data indicates a very high case fatality rate of 51% among reported cases to date.
Probable, limited, person-to-person transmission has been reported in Thailand and Vietnam.

Table 2. Worldwide Occurrence of Highly Pathogenic Avian Influenza (H5N1) in Poultry and Wildlife, December 2003-27 February 2006

Year	Country	Date of first official reporting to the OIE	Last known case suspected and/or confirmed	Source of latest information	Human cases
2006	Switzerland	26/02/2006		OIE	
	Slovakia	24/02/2006		OIE	
	Malaysia (Peninsular)	23/02/2006		OIE	
	Austria	20/02/2006		OIE	
	Bosnia and Herzegovina	20/02/2006		OIE	
	Egypt	19/02/2006		OIE	
	India	18/02/2006		OIE	
	France	17/02/2006		OIE	
	Niger		15/02/2006	ProMED	
	Hungary		15/02/2006	European Union	
	Germany	16/02/2006		OIE	
	Austria		14/02/2006	WHO	
	Iran	14/02/2006		OIE	
	Greece	13/02/2006		OIE	
	Bulgaria	12/02/2006		OIE	
	Slovenia	12/03/2006		OIE	
	Italy	11/02/2006		OIE	
	Nigeria	08/02/2006		OIE	
	Iraq	02/02/2006		OIE	X
2005	Ukraine	08/12/2005		OIE	
	Croatia	21/10/2005		OIE	
	Turkey	14/10/2005	30/01/06	OIE	X
	Romania	07/10/2005		OIE	
	Mongolia	10/08/2005		OIE	
	Kazakhstan	02/08/2005		OIE	
	Russia	24/07/2005		OIE	
2004	Malaysia	19/08/2004	03/01/2005	OIE	
	China, PR of	06/02/2004		OIE	X
	Indonesia	02/02/2004		OIE	X
	Hong Kong SARPRC	26/01/2004		OIE	
	Thailand	23/01/2004		OIE	X
	Laos	27/01/2004		OIE	
	Cambodia	21/01/2004		OIE	X
	Japan	12/01/2004	12/07/2004	OIE	
	Vietnam	08/01/2004		OIE	X
2003	Korea, DPR of	12/12/2003	21/09/2004	OIE	

Note: Information adapted from FAO and updated with information from the OIE (World Organization for Animal Health).

7. All that is necessary for a pandemic to occur is for the H5N1 virus to become adapted to sustained person-to-person transmission. Experts agree that the unprecedented epizootics of avian flu in Asia, the possibility for the H5N1 to adapt to person-to-person transmission, and recent virological and surveillance findings are signs that a pandemic may be imminent. Human global spread is likely to occur more rapidly than in previous pandemics due to increased travel and urbanization.

8. The population of Latin America and the Caribbean is estimated for 2005 to be around 560 million people (approximately 9% of the world population and close to 15% of the population of the developing world, excluding China); 77% of this population is urban. The World Bank estimates that 11% of the population of Latin America lives below the international poverty line and around 130 million people live in rural areas, most of them in direct contact with chickens and pigs that provide a major source of protein for rural inhabitants. The impact of a pandemic in the region will be not only a public health problem, but an economic disaster for the poorest populations in rural areas and for national economies.

9. Influenza pandemics have historically taken the world by surprise, leaving minimal time for health services to prepare for the abrupt increases in cases and deaths that characterize these events and make them so disruptive. The present situation is markedly different as the world has been warned in advance. This advance warning has brought an unprecedented opportunity to prepare for a pandemic and develop ways to mitigate its effects, even in areas with problems of access to basic health services.

PAHO's Response to the Threat of Pandemic Influenza

10. In order to respond to the increased demand for technical cooperation necessitated by the emergence of an influenza strain with pandemic potential, the Director has established an interprogrammatic and multidisciplinary Task Force on Epidemic Alert and Response (the EAR Task Force). The EAR Task Force was created by expanding the terms of reference of the Task Force for the International Health Regulations (IHR), which had been established on 14 October 2004. The Assistant Director was designated to chair the Task Force, and the Communicable Diseases Unit (DPC/CD) has served as the technical secretariat.

11. The EAR Task Force's principal function has been to advise, coordinate, and monitor all activities of the Organization related to the planning and implementation of influenza pandemic preparedness and response, as well as the implementation of the International Health Regulations in the Region.

12. In order to protect PAHO staff and maintain essential functions, the EAR Task Force has also been charged with drafting the PAHO Staff Policy and Contingency Plan

for an Influenza Pandemic which is envisaged to serve as a tool to facilitate country-level coordination on this issue among other agencies of the United Nations System.

13. The recently adopted International Health Regulations 2005 (IHR-2005) stipulate that countries develop, strengthen, and maintain core capacities to detect, assess, and intervene in such a way as to control events of international public health importance related to risk or disease. Influenza caused by a new virus serotype is one of the notifiable diseases listed under the IHR-2005.

14. The interprogrammatic nature of the Task Force responds to the complex process involved in the IHR implementation and influenza pandemic planning, which require highly coordinated efforts from a variety of sectors, including the private sector.

Development of PAHO's Strategic and Operational Plan for Responding to Pandemic Influenza

15. Since its establishment in August 2005, the Task Force has been responsible for drafting the Contingency Plan for an Influenza Pandemic, which was presented to the 137th Session of the Executive Committee on 30 September 2005. The PAHO SOP has been conceived as a living document that will be under constant review and revision. Therefore the plan was disseminated to WHO and relevant partners, and their comments have been incorporated into the plan. The Task Force has also been responsible for drafting the PAHO Staff Policy and Contingency Plan for an Influenza Pandemic.

16. The objectives of the Contingency Plan for an Influenza Pandemic were to direct technical cooperation activities to prepare the Region for an influenza pandemic; to assist countries in their development of national influenza pandemic preparedness plans; and to support countries in implementing activities that need to be carried out in parallel to drafting plans which have the capacity to detect and respond to diseases such as influenza.

17. Technical units have been actively engaged in the process, and detailed work plans, including timelines and budgets, have been developed in the spirit of interprogrammatic coordination of activities to avoid duplication of effort.

Implementation of PAHO's Strategic and Operational Plan for Responding to Pandemic Influenza

18. PAHO is actively promoting the development of National Influenza Pandemic Preparedness Plans (NIPPPs) and supporting Member States in this effort. The aim of this collaboration is to have local-level influenza preparedness plans as components of the NIPPPs. Several workshops have been carried out subregionally to provide Member States with the modeling tools for planning purposes in the assessment of surge capacity

and health services requirements to respond to a pandemic. Also, the PAHO/WHO Country Representatives have committed to establishing country-office-level task forces to promote and accelerate the development of national plans. Pilot interventions are being carried out in cooperation with the U.S. Centers for Disease Control and Prevention (CDC) to support two countries (Costa Rica and Paraguay) in the development and implementation of their national plans down to the local level. In order to strengthen NIPPPs, a subregional workshop is being carried out in Panama for Central American countries (plus the Dominican Republic) to collectively produce a comprehensive self-assessment of the NIPPPs as well as to identify the essential actions that need to be carried out in both the short and medium terms so that each country has a comprehensive NIPPP that is implemented at the local level.

19. The Communicable Diseases Unit has also been actively working on early warning systems by expanding surveillance targets for influenza to include "influenza-like illness" in addition to the existing network of virological surveillance. The Americas Region currently has 25 National Influenza Centers which periodically report influenza virus activity to WHO's global influenza virus surveillance network, FluNet. In the last three years, the number of countries performing influenza virus isolation and the number of samples shipped to the Regional Reference Laboratory (the CDC) have increased and are expected to increase even further. This has been a result of the support that PAHO, with the collaboration of the CDC, is providing to strengthen surveillance, laboratory diagnosis, and funding of sample shipment. Virological influenza surveillance has also been strengthened through multiple hands-on training in viral isolation and immunofluorescence, and through on-site laboratory technical cooperation by regional experts. Each year the National Influenza Centers receive WHO standard reagents necessary for identification of circulating influenza and other respiratory virus stains. Furthermore, PAHO has been actively seeking to expand the Global Influenza Network through the designation of new National Influenza Centers and the reactivation of nonreporting centers.

20. Regarding antivirals, the Essential Medicines, Vaccines, and Health Technologies Unit (EV) has been actively seeking possible mechanisms to supply antivirals to the Region. An assessment of regional production capacity is being carried out, and PAHO is participating in negotiations between Brazil and Roche over technology transfer. The Immunizations Unit (IM) has been carrying out a regional survey in order to estimate the regional demand for the pandemic vaccine once it becomes available. IM and EV collaborated in the organization of a meeting with international vaccine producers and potential regional producers to promote technology transfer in November 2005.

21. In order to prepare the Region for the possible overburdening of health care systems during the pandemic, the Health Services Organization Unit has been working with national counterparts in planning and preparing for the capacity needed to attend to a surge in the number of illnesses and deaths, especially regarding intensive care

requirements. With support from Canada, guidelines for the Health Services Network Response Capacity Plan in the event of a pandemic were prepared and tested in Paraguay as well as a survey to identify the health services' capacity required to face an eventual pandemic. EV has also been involved in regional forecasting requirements for drugs and supplies in the event of a pandemic.

22. In order to reduce opportunities for human infection, the Veterinary Public Health Unit has been working on strengthening veterinary services and promoting national plans which integrate human health. To this end, the Unit organized a ministerial-level conference together with the Inter-American Institute for Cooperation on Agriculture (IICA), the World Organization for Animal Health, the Food and Agriculture Organization of the United Nations, the Ministry of Livestock, Agriculture, and Supply of Brazil, and the Brazilian Union of Poultry Farming. The Conference was carried out in Brasília, from 30 November to 2 December 2005, to foster commitment for integration in public health and veterinary sectors.

23. Influenza vaccine is gradually being introduced in the Region, and the recommendations of WHO and the Technical Advisory Group on Vaccine-Preventable Diseases concerning the target population are being adapted. Many countries do not have data on the vaccination coverage achieved. The best use of vaccines for seasonal epidemics will help guarantee the production capacity needed to respond to a future pandemic. The formulation used and the time of the year when the vaccine is administered varies depending on the country's geographical location. Currently, 16 countries have introduced the seasonal influenza vaccine:

Table 3. Introduction of the Seasonal Influenza Vaccine in the Latin American and Caribbean Region

Country	Year introduced	Target population	Coverage in 2004	Revolving Fund 2005
Chile	1975	Over 65 years Persons with chronic diseases Pregnant women Health workers	96.5% 100% 58% 100%	No
Cayman Islands	1980	More than 6 months to 5 years Over 50 years Persons with chronic diseases	n.a. *	1,100
Argentina	1993	Over 65 years Persons with chronic diseases	n.a. *	290,000
Bahamas	1994	Over 6 months to 5 years Over 65 years Persons with chronic diseases	n.a. *	38,750
Uruguay	1996	Over 6 months to 2 years Over 55 years Persons with chronic diseases	n.a. *	560,000
Mexico	1997	Over 6 months to 2 years Over 60 years Persons with chronic diseases	n.a. *	No
Bermuda	1999	Over 65 years Persons with chronic diseases	43% (2003)	5,500
Brazil**	1999	Over 60 years Persons with chronic diseases Indigenous persons	85%	No
Cuba	1999	Over 65 years	90% (2003)	200,000
Honduras	2003	Over 50 years, concentrated in homes and shelters, and the health workers that serve them	92%	10,000
Costa Rica	2004	Over 6 months to 5 years Over 65 years with chronic diseases	70% n.a. *	255,000
El Salvador	2004	Over 6 months to 12 years with chronic diseases Over 65 years	n.a. * 96%	883,560
Anguilla	2005	Elderly with chronic diseases Health workers	n.a.*	150
Colombia	2005	Elderly	n.a.*	1,067,450
Paraguay	2005	Elderly	n.a.*	849,791
Netherland Antilles	2005	n.a	n.a.*	No

* n.a.: Not available.
** In 2005, Brazil vaccinated 13 million adults above the age of 60.
Source: *Country survey, 2004;* Canada and the United States are not included**.**
Note: In 2005, the influenza vaccine was included into the PAHO Revolving Fund for Vaccine Procurement bidding process, resulting in quality assurance and lower prices. In 2005, 14 countries acquired 4,600,000 doses of the vaccine through the Revolving Fund, at a price of $3.50 per dose. In 2006, it is estimated that 22 countries will buy 10,073,963 doses at $3.50 per dose.

24. It is expected that the high number of people who become ill and die and the vast economic losses associated with an epidemic or pandemic will lead to a high psychosocial risk. The Mental Health and Rehabilitation Unit, together with WHO, has prepared a document which provides information for Member States on strengthening preparedness and response plans with regard to the social and mental health consequences of a human influenza pandemic.

25. The Special Advisor in Social and Media Communication has developed a communication strategy in close collaboration with WHO counterparts which targets not only health authorities but government employees, citizen groups, health professionals, private industry, the education sector, and the media—to use an audience to reach other audiences.

26. The Resource Mobilization and Partnerships Unit has developed a comprehensive resource mobilization strategy in order to mobilize the necessary resources to carry out the activities detailed in the PAHO SOP.

27. Influenza preparedness has propelled the search for interagency collaboration. Briefing sessions have taken place for the Inter-American Development Bank Board of Governors, the Permanent Council of the Organization of American States, and the World Bank, rekindling the possibility of an interagency initiative at the country level in the Latin American and Caribbean region.

28. PAHO's Secretariat is preparing to establish an Emergency Operations Center (EOC) at Headquarters as part of a Knowledge Center to serve as the hub of the PAHO-wide response to the health aspects of any crisis encompassing:

(a) Coordination and information management
(b) An operational platform for field operations (logistics, transport, supplies)
(c) Early warning and communicable disease control, and
(d) Human resource deployment.

29. An Emergency Operating Center is considered a vital factor in allowing PAHO to work operationally and efficiently to bring the whole Organization together to focus on the response using audio and video conferencing capabilities for briefings, monitoring, and management decisions.

Action by the Subcommittee on Planning and Programming

30. The Subcommittee is invited to consider the present report and the following issues:

(a) To implement the EOC and the Knowledge Center, support should be provided to secure the renovation of physical space, the procurement of equipment required (work stations, visualization, and telecommunications), the EOC permanent staff to allow for 24/7 operation, and the development of standard operations procedures. The investment cost has been estimated at US$ 800,000. Maintenance and operations costs still need to be assessed.

(b) In order to strengthen influenza preparedness and NIPPPs, a self-assessment workshop that is analogous to the one held in Panama City is necessary in the Andean, English-speaking Caribbean, and Southern Cone subregions. These workshops would also include tabletop simulation exercises and yield plans of action that identify the essential activities to ensure that each country has a comprehensive NIPPP that is implemented at the local level. The estimated cost to carry out these three workshops is $450,000.

(c) To support activities in the Epidemic Alert and Response Area of Work, the following posts are required:

i. A professional (P4 – $110,000 per annum) to work on strengthening pandemic preparedness and implementation of NIPPPs at the local level in countries of the Americas Region. This person would also work ensure the achievement of revised surveillance standards for acute respiratory illness in compliance with the newly adopted IHR-2005.

ii. A professional (P4 – $110,000 per annum) to work in the periodic assessment and continuous monitoring of the public health capacities required to detect and respond to a public health emergency, including influenza by a novel strain, as defined in the newly adopted IHR-2005.

iii. A professional (P3 – $90,000 per annum) to plan, program, and monitor pandemic influenza activities, including the strengthening of virological surveillance of influenza and country participation in the global influenza surveillance network to ensure countries' capacity to detect a single case of human infection with a novel influenza virus as determined in the newly adopted IHR-2005.

iv. A professional (P3 – $90,000 per annum) to carry out early warning systems operations in compliance with the new requirements of the IHR-2005, including the gathering of information, verification and reporting of possible public health events, and strengthening the information systems of the existing emerging infectious diseases networks.

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