

Responding to an Influenza Pandemic in the Americas

Peter DeShazo
Carissa Etienne

Policy Papers on the Americas
Volume XVII, Study 1

August 2006



Responding to an Influenza Pandemic in the Americas

Peter DeShazo
Carissa Etienne

Policy Papers on the Americas
Volume XVII, Study 1

August 2006



About CSIS

The Center for Strategic and International Studies (CSIS) seeks to advance global security and prosperity in an era of economic and political transformation by providing strategic insights and practical policy solutions to decisionmakers. CSIS serves as a strategic planning partner for the government by conducting research and analysis and developing policy initiatives that look into the future and anticipate change. Our more than 25 programs are organized around three themes:

- *Defense and Security Policy*—With one of the most comprehensive programs on U.S. defense policy and international security, CSIS proposes reforms to U.S. defense organization, defense policy, and the defense industrial and technology base. Other CSIS programs offer solutions to the challenges of proliferation, transnational terrorism, homeland security, and post-conflict reconstruction.
- *Global Challenges*—With programs on demographics and population, energy security, global health, technology, and the international financial and economic system, CSIS addresses the new drivers of risk and opportunity on the world stage.
- *Regional Transformation*—CSIS is the only institution of its kind with resident experts studying the transformation of all of the world's major geographic regions. CSIS specialists seek to anticipate changes in key countries and regions—from Africa to Asia, from Europe to Latin America, and from the Middle East to North America.

Founded in 1962 by David M. Abshire and Admiral Arleigh Burke, CSIS is a bipartisan, nonprofit organization headquartered in Washington, D.C., with more than 220 full-time staff and a large network of affiliated experts. Former U.S. senator Sam Nunn became chairman of the CSIS Board of Trustees in 1999, and John J. Hamre has led CSIS as its president and chief executive officer since 2000.

CSIS does not take specific policy positions; accordingly, all views expressed herein should be understood to be solely those of the author(s).

© 2006 by the Center for Strategic and International Studies. All rights reserved.

Center for Strategic and International Studies
1800 K Street, N.W.
Washington, D.C. 20006
Tel: (202) 887-0200
Fax: (202) 775-3119
Web: www.csis.org

Contents

Introduction.....1

Summary of Presentations3

 Remarks of Undersecretary of State Paula J. Dobriansky.....3

 Panel I: The Threat.....4

 Panel II: The Response7

 Remarks of Ambassador Albert Ramdin10

Conclusions.....11

About the Authors.....14

Responding to an Influenza Pandemic in the Americas

Peter DeShazo and Carissa Etienne

Introduction

Influenza is a viral disease that affects millions of people worldwide and kills approximately 1 million people annually. Influenza viruses are continuously evolving, and major antigenic changes can occur in the composition of viruses. When a new strain of influenza virus emerges and adapts to enable transmission from person to person, the disease can quickly spread, resulting in a pandemic.

Type A influenza is one of the strains responsible for outbreaks in animals, particularly in poultry. It is possible for avian influenza A viruses to become endemic in poultry farms, particularly in noncommercial farms, small-scale commercial poultry farms, backyard flocks, and places where live poultry is traded. Some poultry outbreaks of avian influenza viruses have demonstrated a surprising level of aggressiveness. These viruses may also result in human exposure and infection and, ultimately, can lead to a human pandemic.

A cluster of severe infections of humans by an avian influenza A virus was first documented in Hong Kong in 1997. This 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 May 2006, more than 150 human cases of influenza A (H5N1) with a very high fatality rate have been reported to the World Health Organization (WHO).

Experts agree that a pandemic may be imminent. This pandemic can occur if the H5N1 virus adapts to sustained person-to-person transmission. Should this happen, global human spread is then likely to occur more rapidly than in previous pandemics, due to increased travel and urbanization.

Although there have been no reported cases of avian influenza in poultry or humans in the Americas, the threat of an outbreak is ever-present, with potentially devastating results in human and economic terms. According to estimates from

the Food and Agriculture Organization (FAO), the Americas are responsible for some 47 percent of poultry produced worldwide each year and constitute the largest poultry-exporting region in the world. While the vast majority of this production is through large-scale commercial enterprise, many millions of people in the Americas, above all the rural poor in Latin America and the Caribbean, live in direct contact with chickens and pigs—another host of avian influenza. 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 health and economic impact in the region as well as other social consequences.

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 for authorities to contend with the wide range of economic, social, and security challenges that are triggered by a pandemic. The present situation is markedly different, however, as the world has been warned in advance, providing an unprecedented opportunity to prepare for the pandemic and to develop means of mitigating its effects.

In the case of the Americas, the Pan American Health Organization (PAHO) has developed a Strategic and Operational Plan for responding to pandemic influenza that directs technical cooperation activities to prepare the region for an influenza pandemic. The plan aims not only to assist countries in the development of National Influenza Pandemic Preparedness Plans (NIPPPs) but also to assist countries in the supporting actions needed to detect and respond to an influenza pandemic.

The Summit of the Americas meeting in Mar del Plata, Argentina, in November 2005, yielded a commitment from the countries to finalize national plans by June 2006. PAHO has and will continue to play an important role in promoting the development and assessment of these plans. Beyond the formulation of NIPPPs, a broader effort is required to promote regional cooperation and enhanced capacity building in the Americas in preparing for an influenza pandemic.

In support of the goal of promoting greater regional preparedness against an influenza pandemic, the Americas Program of the Center for Strategic and International Studies (CSIS) and PAHO cosponsored a conference on May 24 in Washington, D.C., to analyze the impact of a potential pandemic and how best to respond to the threat. The conference featured presentations by leading experts from around the hemisphere and addresses by the Organization of American States (OAS) assistant secretary general, Albert Ramdin, and the U.S. undersecretary of state for democracy and global affairs, Paula J. Dobriansky. Presentations were divided into two panels, one dealing with the threat of a pandemic and the other the response to it. The audience for the event included government officials from the United States, Latin America, and the Caribbean, diplomats and public health officials, representatives from international financial organizations, nongovernmental organizations, and civil society, the private business sector, and the media.

This report summarizes the work of each of the two panels and the presentations by Ambassador Ramdin and Undersecretary Dobriansky, and it outlines the conclusions reached during the proceedings, under the categories “the threat” and “the response.” The purpose of the conference was practical: to assist policymakers and planners in the Americas in preparing for an influenza pandemic and to highlight the variables at play for public opinion in the region.

The Americas Program of CSIS and the Pan American Health Organization express their appreciation to the Pan American Health and Education Foundation (PAHEF) for its generous support in making possible the conference and this report.

Summary of Presentations

Remarks of Undersecretary of State for Democracy and Global Affairs Paula J. Dobriansky¹

Noting that 51 countries in Asia, Europe, and Africa have already experienced cases of avian influenza, Undersecretary Dobriansky called on the nations of the Americas to prepare for what, in its worst-case scenario of human-to-human transmission, could be a pandemic of dramatic human and economic consequence. She outlined the fact that U.S. efforts focused on strengthening the international response capacity to the threat and included dedicating \$66 million to develop international stockpiles of health supplies, \$36 million in support of international organizations such as the World Health Organization and the Food and Agriculture Organization, and \$41 million for research worldwide. The United States, in September 2005, announced a Partnership on Avian and Pandemic Influenza, involving 90 countries and 9 international organizations and including PAHO and the WHO, to improve readiness, to leverage resources, to increase transparency in reporting and surveillance, and to build response capacity. Twelve countries in the Americas participated in the first meeting of the Partnership, with another meeting planned in June 2006. Beyond these measures, the United States pledged \$334 million for international action against avian influenza at a donor’s conference held in Beijing in January 2006.

Undersecretary Dobriansky outlined the need for cooperation with Mexico and Canada on a response in the event of a pandemic, under the Security and Prosperity Partnership of North America (SPP) and other multilateral efforts in the Americas to strengthen preparedness. U.S. domestic efforts to deal with an influenza pandemic will help contain the virus in the hemisphere, she pointed out, and she described the basic components of the U.S. National Strategy for Pandemic Influenza announced last November. The State Department is the lead U.S. agency on international engagement on influenza, responsible for coordinating the international actions of the U.S. government. Influenza,

¹ The complete text of Undersecretary Dobriansky’s remarks can be found at: http://www.csis.org/media/isis/events/060524_dobriansky_remarks.pdf.

Dobriansky emphasized, is a global threat requiring a global solution, and the United States will work closely with neighbors in the hemisphere and around the world to address the threat.

Panel I: The Threat

The panel, moderated by **Dr. Carissa Etienne**, assistant director of PAHO, discussed the threat of an influenza pandemic to animal health, human health, and the economy of the Americas.

Dr. Lloyd Webb, adviser on veterinary public health, Pan American Health Organization Office of Caribbean Program Coordination (PAHO/CPC) in Barbados, discussed the issue of animal health.²

Noting that human influenza pandemics in the twentieth century occurred when influenza viruses changed genetically through reassortment mutation or adaptive mutation and that such pandemics had originated from viruses that had previously affected birds, Dr. Webb postulated that planning for a human pandemic must involve mechanisms to control influenza in animals. H5 and H7 viruses are the two Type A influenza virus strains that can cause highly pathogenic avian influenza with the capability of affecting humans, birds, pigs, and other animals. The H5N1 virus, now present in poultry in the countries around the world affected to date by avian influenza, is the strain expected to cause the next pandemic. For transmission of the virus to occur, the agent (virus), host (birds/humans), and the environment (poultry houses, roosting sites for wild birds, etc.) must come together, and a key objective is to prevent this from happening. Surveillance of poultry and wild birds is a key ingredient and includes inspections at ports to prevent the entry of infected live poultry or their raw products, early detection of infection, and planning for implementation of quarantine measures or mass culling and proper disposal of carcasses in the event of an outbreak. Although surveillance and detection capabilities in large-scale poultry facilities are usually well developed, small-scale producers and family holdings in rural areas pose a far greater problem. Enhanced surveillance efforts are being made in the United States, Canada, and most of Latin America, but the Caribbean is more vulnerable, with the potential testing facilities for avian flu available only in Barbados, Trinidad and Tobago, and Jamaica.

Looking forward, Dr. Webb stressed that National Preparedness Plans need to be developed in the Americas, integrating veterinary and human health variables and fostering public-private-sector partnerships. Such partnerships would optimize the use of available resources and create functioning networks for monitoring, detection, and reaction. For its part, PAHO/CPC is helping countries in the Caribbean develop their preparedness plans, strengthening veterinary services to reduce opportunities for animal-human exposure and improving the

² For Dr. Webb's PowerPoint presentation, see: http://www.csis.org/media/isis/events/060524_lloyd.pdf.

communication skills of public officials on the issue of avian influenza. A simulation exercise, sponsored by the Inter-American Institute for Cooperation in Agriculture (IICA) and to be held in Jamaica in June 2006, will test the state of preparedness in the Caribbean. Efforts are also being made to promote the use of established national port health surveillance guidelines and assist the smaller states in moving forward in formulating their national plans. Greater efforts must be made to register farmers and live-bird markets, to develop compensation packages for farmers and producers who might face large-scale culling of their poultry flocks, and to establish a team of Caribbean professionals who will assist smaller states in the region in the event of an outbreak of influenza.

Dr. Marlo Libel, medical epidemiologist with the Disease Prevention and Control Division of PAHO, discussed the threat to human health in the Americas.³

Historical data on influenza pandemics since the late 1890s demonstrate that a pandemic has occurred every 10 to 30 years. The last major outbreak of influenza took place in 1968 (the Hong Kong flu). Therefore, according to Dr. Libel, another pandemic may be overdue. As of May 2006, there have been 218 confirmed human cases of avian influenza reported to the WHO, with 124 deaths—a very high fatality rate. Human-to-human infection is still very infrequent—rated Phase 3 on the WHO scale of the pandemic, the first stage being the “pandemic alert” period. Should the rate of human infection reach a pandemic scale, however, projections based on modeling along the lines of the 1958 and 1968 “moderate” strains, in terms of virulence, would result in more than 200,000 deaths in the United States (at a 30 percent clinical attack rate) and almost 400,000 in Latin America and the Caribbean. Hospitalization and death rates would skyrocket well beyond these levels should the outbreak reach the severity of the 1918 pandemic, resulting in some 70 million persons infected in Latin America and the Caribbean at a 25 percent clinical attack rate. Even using the 1968 “moderate” scenario with a 25 percent clinical attack rate, emergency services in Latin American and Caribbean hospitals would be overwhelmed in the first week of the outbreak and overall capacity nearly breached by influenza patients alone by week four.

The 34 members of the Organization of American States mandated at the November 2005 Summit of the Americas that, with the support of PAHO, all countries in the region should have finalized National Influenza Pandemic Preparedness Plans by June 2006. By May 16, all countries in the region but six Caribbean nations had submitted draft plans to PAHO, but only a minority of these is at the stage of implementation. The task now is to test the plans to determine if they are really operational, not just at the national level but locally, since a key objective in responding to a pandemic is to keep the outbreak as localized as possible. In this regard, the technical cooperation priorities for

³ For Dr. Libel’s PowerPoint presentation, see: http://www.csis.org/media/isis/events/060524_libel.pdf.

PAHO, beyond the formulation of NIPPPs, are to improve health surveillance, promote working linkages with national and local disaster and emergency responders, encourage greater health service readiness, including the formation of disaster task forces, and build greater capability in public affairs in order to impart information without causing panic. Above all, planning must not be limited to the area of health, but to public services, security, trade, and commerce.

George A. (Sandy) Mackenzie, assistant director, Research Department, International Monetary Fund, described the likely economic impact of an influenza pandemic in the Americas.⁴

Even without reaching a higher stage of development on the WHO scale and largely limited to the infection of poultry, an avian influenza epidemic could cause considerable financial damage in Latin America, given the importance of large-scale poultry production to several economies and the reliance of many small farmers on chickens and eggs for protein. Should a pandemic reach Stage 5 or 6 on the WHO scale, however, the economic impact would be many times greater. The most vulnerable economies in the region would be those that are highly dependent on tourism, are exporters of durable goods, or are already under strain, either because they are especially vulnerable to external shock or have weak public health facilities and poor overall public health.

An avian influenza pandemic could be expected to produce a substantial, but probably short-lived, “shock” to economies in the region, although the size of the shock would depend on the attack rate of disease, the mortality rate, the pace of convalescence, and the number of waves of contagion. A key variable in this mix is the ability of basic institutions to continue functioning—a factor directly related to preparedness. In the short term, according to Mackenzie, death is not the major factor affecting the economy, but illness and absenteeism are, the former a factor of workers staying home and the latter a policy of “social distancing” to avoid contagion. Planning for absenteeism in key sectors such as public security, public utilities, and transportation is essential in ameliorating the effects of the pandemic. As for the “demand side” impact of a pandemic, household consumption will fall substantially. While short-term disruptions in both labor supply and consumer demand will be sharp, production and demand can rebound quickly if law and order is maintained and basic services continue to function.

Predicting the level of economic damage by a pandemic is difficult. Canadian government statisticians estimate that the impact of a 1918 scenario repeated would cause Canadian GDP to drop by about 1 percent and that a “worst-case” scenario could produce a fall of 12.6 percent in world GDP. A pandemic would affect financial markets, stimulating increased demand for liquidity and capital “flight to quality” in terms of investments, with a rise in premium spreads for investments in more risky assets. Household demand for cash could pressure financial institutions, and liquidation of longer-term assets would affect yields.

⁴ For Mr. Mackenzie’s PowerPoint presentation, see: http://www.csis.org/media/isis/events/060524_mackenzie.pdf.

Financial systems would be pressured, with more difficulty in payments and clearing and settlements of checks. Absenteeism would put pressure on business information technology, and the integrity of telecommunications would be essential. A pandemic could also force governments to adjust macroeconomic policies, monetary and fiscal above all, as expenditures increase and revenues shrink. The duration of the pandemic would be a key factor in weathering these challenges, as would be the degree to which societies develop “business continuity plans” to control economic disruption.

Panel II: The Response

The panel, moderated by **Ambassador Peter DeShazo**, director of the Americas Program at CSIS, outlined challenges in responding to an influenza pandemic at the municipal, provincial, and federal levels.

Ms. Barb Graff, director of the Office of Emergency Management of the City of Seattle, Washington, based her presentation on the experience in emergency planning for an influenza pandemic in the City of Seattle and its surrounding county.⁵

Ms. Graff urged planners to learn from the past—in the case of Seattle, from previous influenza pandemics, including the 1918 experience—and also to take lessons from other planning exercises that address catastrophic earthquakes. Several key assumptions must be made from the beginning: that illness will spread quickly and globally, that a pandemic would disproportionately affect younger people, that health care delivery systems would be rapidly overwhelmed, that critical infrastructure would be disrupted, that there would be huge demands on services, and that staff shortages in key areas would be in the 25–40 percent range. With hospital capacity in the Seattle area now filled to 87 percent, increased demand in a pandemic would quickly outstrip services.

The objectives of an influenza plan should be to limit sickness and death, maintain essential services, and minimize social disruption and economic loss. To do so, Ms. Graff urged planners to consult existing emergency plans and formulate responses that are “consequence based,” not incident specific; to create “community partnerships” among different institutions for coordination, planning, training, and action; and to make preparedness “a way of life” rather than a special activity. These partnerships result in the creation of “operations groups”—in the case of Seattle, linking police, fire, health, and education officials in civic and community organizations with carefully laid-out responsibilities. Preparedness is cost-effective in the long term and should be promoted as such. A focal point for planning is the maintenance of essential government services, including emergency phones, potable water, traffic systems, electric power, and food distribution. Personnel planning is a central element, making certain that

⁵ For Ms. Graff’s PowerPoint presentation, see: http://www.csis.org/media/csis/events/060524_graff.pdf.

lines of succession for critical decisionmaking are well established, with predelegated backups. Cross-training is necessary, especially between health and security providers. Stockpiling of important supplies, especially disinfectants and masks, is essential. Because “health care will be home care” during a pandemic, educating the public on how to respond to the disease is a key factor. Public messages at all levels (national, state, municipal, local) must be consistent and candid. Past experience has demonstrated that one of the factors that most negatively affects response to a disaster is conflicting information and advice from public officials.

Dr. Francois Paquet, vice president of the Association of Quebec Emergency Physicians and a key planner on influenza pandemic for the Quebec Ministry of Health, outlined steps taken by Quebec to prepare for an influenza pandemic.⁶

Overall, the Quebecois planning mechanism is a civil protection plan used for overall emergency response. Planning is coordinated with federal authorities and with other provinces, as well as with municipalities and other partners. Dr. Paquet outlined three principles of response: matching strategies with the functions of the present health and social services network, employing top-down decisionmaking, and building organizational effectiveness. Planning is based on an assumption that the main surge of an influenza pandemic would occur during an eight-week period and that up to 35 percent of the medical and allied health workers in Quebec would themselves be infected by the disease. The public health component of the Quebec plan contemplates close surveillance of morbidity and mortality, constant testing of the virus, monitoring the resistance to antivirals, and tracking vaccination coverage. It also covers the stockpiling of reserves of antivirals, with the assumption that the development of a vaccine would take four to six months. Measures are in place for distributing masks and disinfectants, case and contact management, and closing public places.

In the area of health services, Quebec’s plan contemplates “health networks” linking medical clinics with self-care, which will be an important component of overall care as emergency and hospital facilities become overwhelmed. In this regard, Quebec has prepared a “self-care guide” for citizens describing how to monitor possible symptoms and respond to them. Dr. Paquet repeatedly emphasized that “the home will be the first site of care” and that the overburdened emergency services cannot respond to noncritical cases. Public education therefore becomes a key component of planning, with the creation of communication networks capable of transmitting coherent messages. The training of family physicians and “frontline” health workers is essential, with careful checklists for hospitals to follow in the delivery of services and in reporting back to provincial and federal health officials.

⁶ For Dr. Paquet’s PowerPoint presentation, see: http://www.csis.org/media/isis/events/060524_paquet.pdf.

Dr. Jarbas Barbosa Da Silva Jr., general director of health surveillance in the Ministry of Health of Brazil, outlined Brazil's Preparedness Plan for an Influenza Pandemic, a national strategy covering public health surveillance, vaccines and antiviral supplies, health care infrastructure, federal communication on health, and legal issues.⁷

Brazil's plan was formulated in consultation with the WHO and PAHO and will be consonant with preparedness plans yet to be formulated by each Brazilian state. Pandemic scenarios in the Preparedness Plan expect a surge of new cases between the 50th and 100th days of an outbreak, with anywhere from 9.6 million to 18 million persons infected in a "low transmissibility pandemic" and from 44 million to 91 million infected in a "high transmissibility" model.

Brazil places great priority on surveillance, encompassing a variety of infections that require immediate notification to federal authorities. Seasonal influenza is already tracked, but officials are watching closely for suspected or confirmed cases of H5N1 influenza in humans or animals. Migratory birds are being monitored in many areas of the country for West Nile fever and avian influenza, and nearly all Brazilian states have put in motion "surveillance networks" for avian influenza. Information from these networks is coordinated at the federal level at a "strategic information center" that can follow up on reports by dispatching verification teams that could trigger containment measures. Brazil's plan calls for additional effort in training and strengthening laboratory capacity at the local level. Considerable attention is being paid to stockpiling antivirals and to vaccinating senior citizens against seasonal influenza. Other areas in which Brazilian authorities concentrate their attention include modeling scenarios to test preparedness and response and developing communications plans to provide timely and accurate public information. A further goal is to improve surveillance in Brazil's huge poultry industry and to promote a public-private partnership between federal authorities and agribusiness.

Beyond public health, Brazil's intergovernmental response to an influenza epidemic is coordinated at the national level by an Inter-Ministerial Executive Group whose lead entity is the Ministry of Health, with the presidency and the Ministries of Finance, Planning, Agriculture, Justice, Defense, and other ministries participating. A key consideration of this body is establishing a clear chain of command at all levels in responding to an influenza pandemic. Coordination between federal and state authorities is essential, since the 6,500 hospitals under Brazil's national health system are administered at the state or municipal level. Federal and state authorities must, nonetheless, help the small and isolated municipalities in coping with surveillance and a response to a pandemic.

⁷ For Dr. Barbosa da Silva's PowerPoint presentation, see: http://www.csis.org/media/isis/events/060524_barbosa.pdf.

Remarks of Ambassador Albert Ramdin, assistant secretary general of the OAS⁸

Ambassador Ramdin offered concluding remarks as the keynote speaker. He underscored the need for preparation and cooperation against potential influenza pandemic, which he sees as “a real threat economically, socially, and politically to the stability, security, and development of the region...” Proactive planning, he stressed, is essential in containing a potential outbreak and in limiting its consequences. In this regard, he underscored the role of the Inter-American System, including PAHO and the Inter-American Institute for Cooperation on Agriculture, under the encouragement of the OAS, to coordinate a regional response to the threat of pandemic. Many countries and populations in the Americas are particularly vulnerable to the effects of influenza, and Ambassador Ramdin called on OAS members to support them. The OAS supports the development of integrated national plans and a hemispheric strategy in responding to an influenza pandemic, with increased capability for surveillance and response. Coordinated action and partnerships among and within member states facilitate an effective response.

Planning against influenza should parallel “vigilance and action” for other threats, including HIV/AIDS, malaria, natural disasters, and malnutrition. These are threats to the multidimensional security and stability of the region. “Best practices” in preparing for these threats can also be employed against influenza and vice versa. The need for careful planning and preparation against all forms of natural disaster cannot be overstated, and the Organization of American States will continue to occupy a key position in providing an overall political context for response, in fostering regional cooperation, and in promoting higher levels of communication among all stakeholders.

⁸ For Ambassador Ramdin’s PowerPoint presentation, see: http://www.csis.org/media/isis/events/060524_keynote_remarks.pdf.

Conclusions

The conclusions of the proceedings are divided into two categories: “the threat” and “the response.”

The Threat

- There is widespread concern that the emergence of avian influenza in the Americas is imminent and could contribute to an influenza pandemic with the sustained human-to-human transmission of a new virus subtype.
- Should an avian influenza outbreak in the Americas give rise to a human pandemic, the effect on humans and on the economy of the Americas would vary according to several factors: the virulence of the virus, the clinical attack rate, and the level of preparedness in responding to the threat.
- Even a “moderate” outbreak of pandemic in the Americas would result in considerable morbidity and mortality, variables that would increase to much higher levels should an outbreak be of a severity comparable to the 1918 “Spanish flu” pandemic.
- Health care infrastructure, even in the most developed countries of the Americas, could quickly be overwhelmed by the effects of the pandemic, thus forcing the inclusion of home care as a complementary strategy of response.
- An influenza pandemic could be expected to spread quickly and to disproportionately affect younger people, putting additional pressure on health care delivery and other key services.
- Animal health, especially the health of poultry, could be affected by the avian influenza virus, with the potential for substantial economic loss to large-scale poultry producers and severe hardship, perhaps even the threat of malnutrition, for small farmers.
- The most vulnerable economies in the region would be those dependent on tourism, exporters of durable goods, and economies already under strain or where public health facilities are weak and overall public health is poor to begin with.
- An influenza pandemic would at minimum cause a short-term but substantial shock to the economies of the region that would vary in length and gravity, according to the attack rate of disease, the mortality rate, the pace of convalescence, and the number of waves of contagion.
- Short-term disruptions in both labor supply and consumer demand will be sharp.
- The capacity of both production and demand to rebound will be closely linked to the continuation of law and order and basic services (utilities, transportation, and communications) during a pandemic.

- Financial systems will come under pressure with high levels of absenteeism as investors move assets and as demand for cash increases.
- Telecommunications could be adversely affected, which would further threaten public health, security, delivery of services, and the economy.
- Countries or jurisdictions without effective pandemic planning in place and without available resources to monitor and respond to an influenza pandemic will be most vulnerable to its effects.

The Response

- Preparedness is the key and perhaps the only weapon against the threat of pandemic influenza.
- Planning for preparedness needs to occur at the national (federal), state (provincial), and local levels, with close coordination among planners at all three levels. These plans should be:
 - Transparent and inclusive, seeking partnership between national and local authorities and the public and private sectors.
 - Tested and recalibrated as needed. Smaller states will require assistance in planning for and responding to an influenza pandemic.
 - Focused on ensuring the continuation to the maximum extent possible of utilities and basic public services, especially essential government services, (health and security), emergency phones, potable water, traffic systems, electric power, and food distribution.
- Countries in the hemisphere that have not completed their National Influenza Pandemic Preparedness Plans should do so, while those with completed NIPPPs need to make public and test their plans.
- Mechanisms should be developed for planners in the region to share “best practices” in addressing the threat of pandemic influenza.
- Regional planners should take advantage of previous planning to respond to other threats to public health and security, such as natural disasters, when formulating responses to the threat of pandemic influenza.
- Effective planning is cost effective and should be promoted as such.
- Because absenteeism will be high in the event of an influenza pandemic, personnel planning is essential, making certain that lines of authority and succession for critical decisionmaking are well established, with backup replacements at each level.
- Key security, health, and social services workers should be cross-trained to the extent that it is possible to substitute one for another.

- Educating the general public about the threat of a pandemic and the response to it will be a key challenge, requiring public messages that are correct, transparent, coherent, and coordinated at all levels of government if the public is to have confidence in them.
- Because most health care in an influenza pandemic will be home care, public education on how to monitor symptoms and respond to them—perhaps through a “self-care guide”—is essential.
- Education and training of “front line” health workers on the response to a pandemic and their role in tracking and reporting the disease must be in place.
- Reserves of antivirals, disinfectants, and masks should be stockpiled and plans made for their rapid distribution.
- Planning to monitor, control, and contain outbreaks of avian influenza in wild birds and poultry is an essential component of preparedness. Greater efforts should be made to register farmers, supervise live-bird markets, develop compensation packages for farmers and producers who would face the need to cull their poultry flocks, and monitor the movement of poultry and poultry products at ports of entry.
- The threat of an influenza pandemic to one locality or country in the Americas is a threat to all, and therefore, planning, surveillance, and response should be coordinated among all nations in the hemisphere, taking advantage of regional entities such as the Organization of American States, the Pan American Health Organization, the Inter-American Institute for Cooperation on Agriculture, and other international bodies.

About the Authors

Peter DeShazo was named director of the CSIS Americas Program in September 2004. Previously, he was deputy assistant secretary of state for Western Hemisphere affairs. During his career in the U.S. Foreign Service, Ambassador DeShazo served as deputy U.S. permanent representative to the Organization of American States (OAS), where he was elected chair of the OAS Committee on Administration and Budget. He also directed the Office of Public Diplomacy and Public Affairs of the Bureau of Western Hemisphere Affairs at the State Department and served at U.S. embassies and consulates in La Paz, Medellín, Santiago, Panama City, Caracas, and Tel Aviv.

Dr. DeShazo received his B.A. from Dartmouth College and Ph.D. in Latin American history from the University of Wisconsin at Madison and did postgraduate study at the Universidad Católica de Chile. He was a Fulbright scholar, Reynolds scholar, and Ford fellow and is the author of *Urban Workers and Labor Unions in Chile, 1902-1927* (University of Wisconsin Press, 1983) and articles on the industrial relations and social history of Latin America.

Carissa F. Etienne, M.D., is the assistant director of the Pan American Sanitary Bureau, which is the Secretariat of the Pan American Health Organization (PAHO). She oversees the organization's programs for Disease Prevention and Control, Family and Community Health, Sustainable Development and Environmental Health, Technology and Health Services Delivery, and Gender, Ethnicity, and Health—PAHO's core programs for providing technical cooperation to its member states.

Dr. Etienne is a native of Dominica, where she has had a long career in medicine and public health. She was trained as a general practitioner at the University of the West Indies and graduated with an M.B.B.S. in 1976. She also studied community health in developing countries at the London School of Hygiene and Tropical Medicine, where she received her master's degree in 1982.

Dr. Etienne has carried out a number of research projects on a variety of public health issues, including health services utilization, social participation, and community programs, among others. She has served as a consultant to PAHO on studies of health conditions and services in several Caribbean countries. At the Caribbean level, she has participated in the development and evaluation of major initiatives in health, including, inter alia, disaster preparedness, HIV/AIDS, health services organization, essential drugs, health promotion, and Caribbean cooperation in health.

