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THE PANDEMIC PENDULUM: A CRITICAL ANALYSIS OF FEDERAL AND STATE PREPAREDNESS FOR A PANDEMIC EVENT

by

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March 2009

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This paper explores pandemic planning efforts across federal and state jurisdictions and how the absence of collaboration could have major consequences upon the population of the United States. How adequate are state and federal pandemic plans, and what must be done nationally to address common shortfalls? The methodology used a hybrid approach by combining a secondary analysis of available data with a modified case study approach. Analyzing the individual state plans and HHS' Pandemic Influenza Plan revealed common deficiencies, and disclosed distinct functional areas where stringent collaboration across multiple jurisdictions and functional areas would mitigate the deficiencies and provide a blueprint for potential development into an all-hazards national catastrophe plan. This resultant comprehensive plan would provide a solid template for all stakeholders to use in further development of their individual plans, and additionally provide a mechanism to propagate proactive planning efforts among international disaster preparedness partners.

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THE PANDEMIC PENDULUM: A CRITICAL ANALYSIS OF FEDERAL AND STATE PREPAREDNESS FOR A PANDEMIC EVENT

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This paper explores pandemic planning efforts across federal and state jurisdictions and how the absence of collaboration could have major consequences upon the population of the United States. How adequate are state and federal pandemic plans, and what must be done nationally to address common shortfalls? The methodology used a hybrid approach by combining a secondary analysis of available data with a modified case study approach. Analyzing the individual state plans and HHS' Pandemic Influenza Plan revealed common deficiencies, and disclosed distinct functional areas where stringent collaboration across multiple jurisdictions and functional areas would mitigate the deficiencies and provide a blueprint for potential development into an all-hazards national catastrophe plan. This resultant comprehensive plan would provide a solid template for all stakeholders to use in further development of their individual plans, and additionally provide a mechanism to propagate proactive planning efforts among international disaster preparedness partners.

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I. INTRODUCTION

Our country has been given fair warning of this danger to our homeland — and time to prepare.

> — U.S. President George W. Bush's remarks on issuance of Department of Health and Human Services Report "Pandemic Planning Update III," November 13, 2005.

A. PROBLEM STATEMENT

Within the United States, there are numerous inconsistencies in how various jurisdictions plan for a major pandemic event within their area. No two states have plans identical to neighboring states, nor is there congruence within federal agencies on specific details in preventing, mitigating, or recovering from a pandemic event. These inconsistencies have the potential to impede major response and recovery operations. Furthermore, the failure to synchronize planning may manifest itself across all preparedness initiatives, whether the focus is pandemic influenza, earthquakes, hurricanes, or consequences from a deliberate act of terrorism.

This paper explores pandemic planning efforts across state and federal jurisdictions and how the absence of collaboration could have major consequences upon the population of the United States. Could a major pandemic incident decimate the population, and how might nationwide consistency in pandemic planning reduce that threat?

Investigation of the preparation and response to Hurricane Katrina underscored the problems associated with a lack of coordination in planning and preparedness. The disaster revealed that the preponderance of planning at all levels took place in a crisis environment, despite the fact that all levels of government had adequate time to prepare.[1] Were contingency plans ignored, or were they nonexistent? Could this failure occur again during a nationwide pandemic event? A comment made during the investigation of

[1] "The Federal Response to Katrina: Lessons Learned," White House Report, February 2006: 53-54.

the preparation and response to Hurricane Katrina revealed the failings: "It seems that all too often, local, state, and federal leaders were *planning* in a crisis environment."[2] To minimize the loss of life and enhance the speed of recovery, planning coordination for catastrophes across multiple jurisdictions must be a national priority — well before the next incident occurs.[3]

The United States Coast Guard (USCG) response in the aftermath of Hurricane Katrina offers an excellent example of the benefits in collaborative planning to coordinate extensive search and rescue operations, by both air and boat. The USCG facilitated operations planning with FEMA and multiple out-of-area responders, effectively evacuating or rescuing more than 33,500 people over a 17-day period.[4]

There is minimal collaborative effort in addressing the threat of any pandemic event, whether natural or induced by mankind, and this lack of coordinated planning has the potential to impact a significant portion of the United States population, either through primary, secondary, or tertiary orders of effect. This research will attempt to determine whether a side-by-side comparison of existing plans identifies consistent or numerous planning shortfalls, and whether there is a need for federal involvement in planning collaboration across the United States.

The federal government developed minimum guidelines for planning considerations to address an Avian Influenza Pandemic by publishing the Department of Health and Human Services' *Pandemic Influenza Plan*. A systematic analysis of existing state plans, focusing on producing an enhanced collaborative plan, will alleviate much of the uncertainty within crisis management practitioners. In the highly chaotic yet unpredictable environment associated with a pandemic event, the need for consistent and coordinated pandemic planning necessitates a proactive approach.

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[2] U.S. House of Representatives, Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina. October 19, 2005: 3.

[3] Ibid., 3-4.

[4] "Observations on the Preparation, Response, and Recovery Missions Related to Hurricane Katrina," GAO Report to Congressional Committees, July 2006: 22-23.

B. OVERVIEW OF PANDEMIC THREATS

The critical analysis of these guidelines and policies may provide evidence that the federal government failed to consider other pandemic scenarios outside the pandemic influenza threat, a consideration the states should address as they collaborate and modify their respective plans. The UN held a conference on bio-terrorism threats and noted that bio-terrorists may manipulate naturally occurring diseases, such as avian influenza, to launch an unprecedented biological attack. Advancements in life sciences and biotechnology are progressing rapidly, and these developments pose a significant threat to both national and international security.[5]

A Congressional Research Service Report for Congress noted that both Congress and the CDC community recognized the potential for laboratory manipulation of influenza viruses, which could lead to an effective terrorist weapon.[6] With reports of a rising accident rate in American biological labs handling numerous varieties of diseases, it may be only a short time before a disease agent is advertently released into the general population, and a pandemic may quickly ensue.[7] A report on U.S. policies to reduce global biothreats highlights the lack of progress in coordinating medical capabilities to manage infectious disease with European or other allies, which would be as applicable to natural pandemics as it would be to acts of bio-terrorism.[8] Known agents likely to be used in biological terrorism include smallpox, anthrax, plague, botulism, tularemia, and Ebola and Marburg hemorrhagic fevers, to name a few.[9] A rational argument could be made supporting the concept that a community better prepared for a pandemic event would inherently be prepared for alternative threats, including a bio-terrorism

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[5] "UN Conference Focuses on Bio-Terrorism Threat," *VOA News*, November 19, 2006: 1.

[6] "Pandemic Influenza: Domestic Preparedness Efforts," Congressional Research Service Report for Congress. November 10, 2005: 32-33.

[7] "U.S. labs mishandling deadly germs," *Associated Press*, October 2, 2007: 1-3.

[8] "Biological Terrorism, US Policies to Reduce Global Biothreats," Partnership for a Secure America report. September 2008: 19.

[9] "Medical Preparedness for Terrorism and Other Disasters," American Medical Association Report. February 21, 2008: 3.

incident or an accident resulting from an inadvertent release of naturally occurring or experimental viruses, including strains of influenza.

With the potential for a major pandemic event striking within U.S. borders at any time, there is a very real need for a well-defined and well-coordinated strategy to address the shortfalls in planning efforts within both federal and state jurisdictions. Failure to collaborate and strengthen planning for a pandemic event across jurisdictional boundaries will be a certain death sentence for many Americans, and constitutes a major tragedy that can be avoided with rapid and decisive action by those charged with custodianship of America's public trust.

1. Thesis Statement

How adequate are state and federal pandemic plans, and what must be done nationally to address common shortfalls?

2. Methodology

This research utilized a hybrid approach by combining a secondary analysis of available data with a modified case-study approach. To that end, this research analyzes the federal *Pandemic Influenza Plan,* and will apply the breadth and depth of planning addressed in this federal plan against all state pandemic plans before making policy recommendations.

C. LEAD-IN TO FOLLOWING CHAPTERS AND EXPECTATIONS

The chapters that follow will review the literature surrounding pandemic planning from multiple sources, provide the background, process, selection and application of the analytical tool, and provide the assessment of state and federal pandemic plans against the analysis matrix. The summary will provide recommendations and policy implications for improving pandemic planning across the United States. At the conclusion of this paper, it will be apparent that the pandemic planning communities have consistent deficiencies, and the course of recommended action will alleviate much of the disparities within this domain.

II. LITERATURE REVIEW

This chapter serves as a brief overview of the literature on pandemic planning, and is not meant to represent a comprehensive review of pandemic planning literature; rather, the intention is to highlight some of the key challenges directly related to pandemic planning. For the purpose of this paper, pandemic planning encompasses those actions required at diverse levels of government to prepare for, mitigate, and recover from a pandemic event. These actions include, but are not limited to, establishing planning committees to develop strategies, coordinating response activities, facilitating reviews of medical preparedness, and developing recovery plans.

During the examination of existing literature for this paper, it became obvious that there were differing perspectives on pandemic planning, depending upon communities of interest. It is therefore prudent to divide the literature review into four sub-literatures to provide the proper perspectives within each separate sector. The sub-literatures are:

- International Efforts and Issues,
- Governmental Guidance and Reports,
- Media and Advocacy Groups Reports, and
- Reports and Research Papers from the Medical and Public Health Communities.

A. INTERNATIONAL EFFORTS AND ISSUES

Providing an extensive literature review of the collective efforts of the international community in its entirety regarding pandemic planning would certainly be beyond the scope of this paper, and would likely stand alone as a separate thesis topic. In reviewing what the international efforts and issues are, it is noteworthy that United States Secretary of Health and Human Services (HHS) Mike Leavitt acknowledged, in a statement upon the release of the *HHS Pandemic Influenza Plan*,

> I am humbled by the enormity of the challenge that the global community confronts should there be a pandemic. Public cooperation and global partnerships will be essential tools in fighting back and creating a constant state of readiness. If together we take the steps necessary, we will be able to save the lives of millions of people in our country and the world.[10]

Acknowledging the need for a collaborative international approach in pandemic planning is an important first step in giving legitimacy to the efforts of international organizations and other nations. The international pandemic plans and articles examined for this paper depict examples of progressive planning efforts, mostly under the umbrella guidance provided by the World Health Organization (WHO).

With the increase in reported cases of avian influenza (H5N1) among birds, and an alarming increase in the human infection from H5N1 among multiple foreign countries, WHO has taken the lead in educating and collaborating — and not only with its member nations. WHO also provides outreach programs to lesser-developed countries having neither the desire nor the motivation to join the WHO community. WHO published several documents to provide as much pandemic planning as practical, at levels from strategic planning to local planning, and incorporated the insights and recommendations from the international community to provide legitimacy to their process and documents. WHO also advocates that the WHO global influenza preparedness plan

> should be used as a guide to inform and harmonize national and international preparedness and response before and during influenza pandemics . . .and . . .countries should develop or update national influenza preparedness plans that address the recommendations made here.[11]

WHO consistently instills a sense of urgency, calling for urgent intervention strategies and assisting in identification of priorities within the communities,

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[10] *Pandemic Influenza Plan.* U.S. Department of Health and Human Services, http://www.hhs.gov/pandemicflu/plan/overview.html. Accessed October 26, 2008: 1-2.

[11] "WHO global influenza preparedness plan," Department of Communicable Disease Surveillance and Response, Global Influenza Programme. March 2005: 5.

recommending distinct courses of action during separate phases of a pandemic.[12] While recognizing the priority of effort within individual countries will focus on their own populations first, WHO provides a situational assessment, highlighting six key facts:

- The risk of a pandemic is great,
- the risk will persist,
- evolution of the threat cannot be predicted,
- the early warning system is weak,
- preventative intervention is possible, but untested, and
- reduction in morbidity and mortality during a pandemic will be impeded by inadequate medical supplies.[13]

Another key document produced by WHO for worldwide distribution is a new WHO checklist for influenza preparedness planning, emphasizing WHO's efforts in updating information and communicating worldwide as a leading proponent of pandemic planning.[14] With recent reporting of fatality rates as high as 80 percent in Indonesia,[15] and having also recorded almost half the reported fatalities from H5N1 worldwide,[16] it is evident this densely populated Asian nation is the focus of significant international concern. WHO continues to proactively monitor this development on a continuous basis.

The government of Indonesia is coming to terms with the realization they may become the springboard for a worldwide influenza pandemic. Indonesians recently engaged in a major avian influenza pandemic exercise to gain a better internal

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[12] "Responding to the avian influenza pandemic threat: Recommended strategic actions," World Health Organization Communicable Disease Surveillance and Response Global Influenza Programme. 2005: 1.

[13] "Responding to the avian influenza pandemic threat," 3-4.

[14] Ibid., 4.

[15] "More than 80 percent of Indonesia bird flu cases die," *Reuters*. http://www.reuters.com/articlePrint?articleId=USN1325807520080813 Accessed August 13, 2008: 1.

[16] "Indonesia: Rampant bird flu raises pandemic risks," *USA Today*. http://usatoday.printthis.clickability.com/pt/cpt?action=cpt&title=Indonesia%3A+Rampant Accessed March 19, 2008: 1.

understanding of the scope of their pandemic challenge. With over five thousand participants, including government and law enforcement officials, doctors, and local villagers from the island of Bali,[17] Indonesia indicated to the international community that it acknowledged the pandemic threat and was proactively engaging their population to enhance community awareness and public health preparedness.

The World Health Organization also provided amble warning to its member countries with its list of things to know about pandemic influenza. WHO points to the concern that major economic disruption will be due to high rates of employee illness and absenteeism, coupled with the closely meshed and interdependent systems of trade and commerce.[18] WHO also proclaimed it will take the lead in alerting the world as the pandemic threat level increases, and will assess its close contacts with multinational ministries of health and various public health organizations, serving as an international surveillance platform.[19]

On another continent, an outbreak of another deadly disease, with many of the flu-like symptoms such as high fever, nausea, diarrhea and headaches, took place last fall in the Democratic Republic of Congo. The international community, led by the U.S. Centers for Disease Control and Prevention (CDC), quickly determined the illness was an outbreak of Ebola, a naturally occurring pathogen with no known cure.[20]

The manifestation of Pandemic Influenza in Indonesia and Ebola in Congo are but two examples of disease occurrence in developing countries. Developing countries pose unique challenges to pandemic planning due to their remote locations. They are cause for concern in light of several issues including delayed time in correctly identifying the

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[17] "Indonesians hold major drill for bird flu pandemic," *Associated Press*. http://ap.google.com/article/ALeqM5iHvsX7x_0-z19F7ydDjEt38m5qUAD908NBG02 Accessed April 25, 2008: 1.

[18] "WHO: Ten things you need to know about pandemic influenza," Eastern Idaho Public Health District article. http://www.idaho.gov/phd7 Accessed July 31, 2008: 1.

[19] Ibid., 2.

[20] "Congo's Ebola Outbreak Could Be Worst in Years," *Washington Post*. http://www.washingtonpost.com/wp-dyn/content/article/2007/09/18AR2007091801047_Accessed April 17, 2008: 1-2.

disease, unknown spread among and within a population, and the effects the slow response has on the ability to execute a timely containment strategy.

CDC recently identified several challenges to pandemic planning in developing countries, noting mortality rates in such countries could be significantly higher than in industrialized. One study concluded that 96 percent of an estimated 62 million deaths resulting from a worldwide pandemic would occur within these developing countries, due in large part to limited healthcare resources and technical expertise, and inadequate infrastructure. Most of these countries depend on donated funding and medical resources, which would likely be severely curtailed during a pandemic event.[21]

In conjunction with other international efforts, the United Nations (UN) launched the International Partnership for Avian and Pandemic Influenza in September 2005. The clear mandate was to encourage openness and facilitate a coordinated effort within the international community, including leveraging and mobilizing resources, improving surveillance, and building local capacity to identify, contain, and effectively respond to a pandemic influenza incident.[22] While painting a mostly threatening picture of a pandemic influenza event, the United Nations also publishes good news, when warranted. Citing an "extraordinary global response" to the threat of an influenza pandemic, the UN finds the world better equipped to fight an influenza pandemic, with 160 nations having plans in place and disease-fighting pledges approaching $2.7 billion .[23]

Even the World Bank has contributed to the worldwide pandemic planning efforts through an analysis of financing needs and gaps of a pandemic event, noting that a primary consideration of governments should be how to win the trust and confidence of their citizens in an effort to minimize public panic while mobilizing the communities as

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[21] "Major Issues and Challenges of Influenza Pandemic Preparedness in Developing Countries," *CDC Journal 14*, Number 6. June 2008. http://www2a.cdc.gov?ncidod/ts/print.asp. Accessed October 26, 2008.

[22] *National Strategy for Pandemic Influenza Implementation Plan, One Year Summary*, Homeland Security Council. July 2007: 6.

[23] "World better equipped to fight flu pandemic-UN," *Reuters UK*. http://uk.reuters.com/articlePrint?articleID=UKN17372727._CH_242020080617. Accessed June 23, 2008: 1.

partners to defeat the threat. The World Bank strongly advocates for governments to adopt an honest and transparent public information policy to enhance public confidence in government.[24]

England gives serious study to the potential for an influenza pandemic developing either internally or as an invasive threat to their national security. A parliamentary committee projected 750,000 fatalities among Britons, and as many as fifty million people worldwide, thus ranking an influenza pandemic among the top threats facing their nation.[25] This same committee calls the World Health Organization "dysfunctional," and calls for major reform to prevent a large pandemic influenza event. Although significant advances have been made in disease control and prevention, as well as public health, the committee notes changes in lifestyle and globalization are providing key opportunities for diseases to spread quickly.[26]

Korea took the initiative in a public proclamation of an insidious, yet very real, secondary order of effect from an influenza pandemic. Korea noted that while the risk of an avian influenza pandemic continues to rise, it also represents a significantly bigger risk to the behavior of international stock markets, and perhaps a greater threat than any posed by a terrorist event.[27]

In a recent twist to its standard military role, the North Atlantic Treaty Organization (NATO) announced joining the Global Health Intelligence Network (GPGIN), an open-source material collection capability that monitors emerging pandemics and other global public health events.[28] As the first military organization to

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[24] "Avian and Human Influenza: Financing Needs and Gaps," *World Bank*. January 12, 2006: 4.

[25] Robert Roos, "Britain ranks flu pandemic among top threats," *CIDRAP News* article. http://www.cidrap.news.umn.edu/cidrap/content/influenza/panflu/news/aug0808pandemic.html Accessed August 15, 2008: 1.

[26] "Britain faces 750,000 deaths in bird flu pandemic, Lords report predicts," *Guardian UK*. http://www.guardian.co.uk/world/2008/jul/21/pandemic.warning/print Accessed July 21, 2008: 1-2.

[27] "Avian Flu Update Bulletin Board – The latest News on the Avian Flu Pandemic," *Healthy, Wealthy and Wise Show*. http://www.healthywealthyandwiseshow.com/Avian%20Flu.htm Accessed August 5, 2008: 3.

[28] "Analysis: NATO begins pandemic monitoring," *United Press International*. http://www.upi.com/Emerging_Threats/2008/01/30/Analysis_NATO_begins_pandemic_monitoring Accessed July 3, 2008: 1.

take this initiative, NATO sends a strong signal that a future influenza pandemic may have serious implications on the multinational military organization, and possibly on strategic security issues.

Emphasis on the pandemic threat appears inconsistent across all domains, with the international community arguably leading the effort in pandemic preparedness and overall planning. This could be a direct result of the increasing number of H5N1 Avian Influenza infections occurring among citizens in developing countries, as well as many nations recognizing the potential enormity of a pandemic threat. With significant funding to the international effort by the United States, and an aggressive campaign by the World Health Organization, many countries not only find time to plan for the pending threat, but they also practice at local, national, and regional levels. In direct contradiction, the United States is still in its infancy regarding regional- and national-level exercises, thus the planning efforts have not been substantiated through exercise evaluation. The analysis of foreign pandemic planning has implications applicable to state and local planners within the United States. Perhaps the most valuable observation is that the international community still recognizes a pandemic threat, whereas many individuals in the American general public, and even among members of government at all levels, have become complacent to the threat of a pandemic event, regardless of the source of origin. The lack of continued public and governmental support toward pandemic planning and preparedness may ultimately impact continued federal funding for preparedness initiatives, and especially major regional exercises, as jurisdictions may perceive the costs as outweighing the benefits of proving their pandemic plans during a major exercise.

It is important to recognize and comprehend the pandemic planning efforts across the international community as we rely on their efforts, especially in early detection and information sharing, to develop our last lines of defense against a pending crisis. Through early disease tracking and warning, the United States can implement strategies to prevent, impede, or mitigate the impacts of a pandemic before it strikes major population centers within our borders.

B. GOVERNMENTAL GUIDANCE AND REPORTS

There is definitely no paucity in pandemic planning material produced and distributed by the United States government. Dozens of plans and updates to plans have evolved over the past five years. This is a result of multiple factors such as gains in knowledge of the threat, advances in intervention strategies regarding anti-viral medications, demand for more planning involvement by agencies outside the federal government, a demand for more transparency in strategy development, and increased need for sustained communications across all sectors.

With the initial publication, in November 2005, of the *National Strategy for Pandemic Influenza*, President Bush drew national attention upon release of this framework, maintaining consistency with both the *National Strategy for Homeland Security* and the *National Security Strategy*. The document's thrust centered on the executive branch's preparedness initiatives to address an emerging pandemic influenza threat, and delivered to the public the first comprehensive approach to the potential threat.[29] The *National Strategy for Pandemic Influenza* acknowledges that the nation must have a system of integrated plans across all levels of government to adequately address a pandemic threat.[30]

As the designated lead agency for the national pandemic planning effort, as well as the responsibility for the federal medical response to bioterrorism attacks, Health and Human Services published the *HHS Pandemic Influenza Plan* to provide "a blueprint for all HHS pandemic influenza preparedness planning and response activities."[31] The Strategic Plan section provides for federal plans and preparation, and identifies key roles of HHS and its subordinate agencies during a pandemic event. The section addressing public health guidance for state and local partners provides detailed guidance to state and local health departments.

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[29] *National Strategy for Pandemic Influenza.* The White House. http://www.whitehouse.gov/homeland/pandemic-influenza.html Accessed October 26, 2008: 3.

[30] *Pandemic Influenza Plan*, U.S. Department of Health and Human Services. http://www.hhs.gov/pandemicflu/plan/overview.html Accessed October 26, 2008: 1.

[31] Ibid., 2.

With the publication of the National Strategy for Pandemic Influenza Implementation Plan in May 2006, the Homeland Security Council clearly identified three principal policy goals resulting from the establishment of an effective and comprehensive planning program: the survival of our constitutional form of government, the uninterrupted continuation of national-level essential functions, and the rapid resumption of all government functions and activities.[32] Noting that organizations across all sectors and levels of government should plan for a pandemic, the key considerations for planning requirements to ensure continuity of operations include identifying essential functions, delegation of authority, orders of succession, alternate operating facilities, devolution of control and direction, reconstitution, and human capital, among others. The plan also clearly expresses the identification of the health threat to personnel as the primary threat to continuity of operations.[33] Within the roles and responsibilities section, the Department of Health and Human Services is singled out as the agency responsible for the actions to protect the health of all Americans and provide essential human services.

The Department of Health and Human Services (HHS) rapidly published several reports to provide transparency of its pandemic planning actions, and has published several *Pandemic Planning Updates* that show both the progress and deficiencies among federal agencies and state and local governments, highlighting many facets of planning and preparedness to benefit the overall community of interest. With the primary onus for priority of planning actions thrust upon the state and local jurisdictions, HHS addresses community-based public health interventions and effectively manages a publically available Web site for federal avian and pandemic influenza information, www.pandemicflu.gov .[34]

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[32] *National Strategy for Pandemic Influenza Implementation Plan*, Homeland Security Council. May 2006: 166.

[33] Ibid., 166-168.

[34] "Pandemic Influenza: HHS Progress in National Preparedness Efforts," U.S Department of Health and Human Services. http://www.hhs.gov/asl/testify/2007/10/t20071003a.html Accessed October 15, 2008: 1.

The office of the Assistant Secretary for Preparedness and Response, within HHS, provided key leadership in the development of a government-wide collaboration providing the Pandemic Influenza Strategic Plan, which codifies HHS' public health and medical responsibility during a pandemic event. The plan also describes the steps federal departments will follow to address an influenza event either in the homeland or abroad — a major step toward delineating specific actions by different agencies.[35] A quote from HHS Secretary Mike Leavitt highlights the importance of a collaborative approach to the multiple threats to be addressed, which cannot be the sole domain of the federal government to confront: "The Federal government cannot mount an effective response to the threats we face as a nation without partners at every level of government and throughout society."[36] The latest update from HHS, published in early 2008, expounds on the need for international cooperation to respond effectively to a pandemic, and stresses the relative successes among WHO member countries in coordinating both national and international responses to disease threats, including pandemics. HHS actively solicits nations to share samples of influenza viruses to assist in early international warnings of evolving strains.[37] Reiterated within HHS' *Pandemic Planning Update V* is the importance of state and local preparedness, and establishment of partnerships to include state agencies, local governments, and for-profit and not-for-profit private sector entities within each state, as a means for effectively preparing for pandemic influenza.[38]

The Department of Homeland Security is responsible for several publications regarding pandemic planning and preparedness. As early as 2007, it released *Pandemic Influenza Best Practices and Model Protocols*, which provides sound guidance and shares several best practices for supporting pandemic influenza planning. Noting the completion of planning and preparation efforts for a pandemic outbreak may have significant benefits and potential applications in addressing other emerging infectious disease outbreaks,[39]

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[35] "Pandemic Influenza: HHS Progress in National Preparedness Efforts," 6.

[36] *Pandemic Planning Update V*, U.S. Department of Health and Human Services. March 17, 2008: 2.

[37] Ibid., 5-6.

[38] Ibid., 12.

[39] *Pandemic Influenza–Best Practices and Model Protocols*, U.S. Department of Homeland Security. April 2007: 2.

the publication highlights planning assumptions and planning considerations to provide the target audience with planning tools to support their respective processes.[40]

The Department of Homeland Security focused on a recurring theme among government publications — that preparedness is a shared responsibility.[41] DHS indicated the *National Preparedness Guidelines* provided a consolidated framework derived from many different plans, strategies, and systems to advocate a preparedness cycle consisting of five primary actions: plan, organize and staff, equip, train, and exercise, evaluate, and improve to maximize community preparedness, especially by strengthening planning and citizen capabilities.[42]

> The *National Preparedness Guidelines* designates planning as one of the eight national priorities and as a target capability common across all homeland security areas. The capability to plan and a standard planning process are essential for the effective implementation and assessment of homeland security initiatives to prevent, protect against, respond to, and recover from terrorist attacks or natural disasters. The security of the Nation requires that all levels of government possess the ability to develop standard, coordinated plans, and to identify and dedicate resources to the development of those plans. It is further imperative that such plans be regularly tested and improved through an inclusive and open system.[43]

Also highlighted in the *National Preparedness Guidelines* is the need for synchronized and coordinated planning capability at all levels of state and local government. The Secretary of Homeland Security is specifically tasked to

> expand opportunities for education, training, and professional development for planning communities at all levels; identify opportunities within Federal homeland security preparedness programs, to foster effective synchronization of Federal, State, local, and tribal plans; and expand opportunities in the National Exercise Program to rigorously test and validate plans for a broader spectrum of the national planning community.[44]

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[40] *Pandemic Influenza–Best Practices and Model Protocols,* 26-11.

[41] *National Preparedness Guidelines,* U.S. Department of Homeland Security. September 2007: iii.

[42] Ibid., 2-5.

[43] Ibid., Annex I, 1.

[44] Ibid., Annex I, 4.

The momentum initiated by the Department of Homeland Security in publishing guides and strategies resulted in other federal agencies developing internal strategies, and spurred the further development of national plans and strategies that address an interwoven relationship with the core Department of Homeland Security publications. A few examples reviewed for this study include the *National Emergency Communications Plan (NECP)*, the Department of Agriculture *Pandemic Planning Report*, the U.S. Food and Drug Administration *Pandemic Influenza Preparedness Strategic Plan*, and the *National Strategy for Information Sharing*. In addressing the emergency communications deficiencies highlighted during the September 11 terrorist attacks, Hurricane Katrina and other natural disasters, and recognizing the potential repercussions during a pandemic, major natural or manmade disaster, or future terrorist attacks, the NECP seeks to improve technology, coordination, governance, planning, training, and exercises to enhance communications operability within agencies, as well as provide the critical cornerstone for building interoperability across all jurisdictions and other agencies.[45]

Noteworthy within the other agency examples are clearly identified roles and responsibilities for the respective agency, and consistent recognition of the need to collaborate with external partners, whether foreign counterpart agencies and international organizations[46] working within specific service infrastructures,[47] or outreach to counterparts within federal, state, local, tribal, private sector, and foreign response partners.[48] As evidenced with the core homeland security document, the primary goals reflected across all homeland security efforts, regardless of the catalyst, involve four basic goals:

- prevent and disrupt terrorist attacks;
- protect the American people, our critical infrastructure, and key resources;

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[45] *National Emergency Communications Plan,* U.S. Department of Homeland Security. July 2008: ES, 1-2.

[46] "FDA Pandemic Influenza Preparedness Strategic Plan," U.S. Department of Health and Human Services. http://www.fda.gov/oc/op/pandemic/strategicplan03_07.html Accessed July 30, 2008: 6.

[47] U.S. Department of Agriculture Pandemic Planning Report. June 29, 2006: 4, 7.

[48] "National Strategy for Information Sharing-Successes and Challenges In Improving Terrorism-Related Information Sharing," Homeland Security Council. October 2007: 1-4.

- respond to and recover from incidents that do occur; and
- continue to strengthen the foundation to ensure our long-term success.[49]

Significant numbers of directions and guidelines have been published from multiple agencies, including both the Department of Homeland Security and HHS, with the potential for substantial confusion among state planners on which guidelines to follow. HHS has been designated as the lead federal agency for the pandemic planning and preparedness campaign, thus state planners should ascribe to the methodology and guidelines HHS provides as a minimum. Using other guidelines as additional sources would provide states more options to develop more comprehensive pandemic plans.

The release of the *National Response Framework* in March 2008 solidified the need for every level of government, communities, nongovernmental organizations, public and private sectors, and individuals to separately and collectively embrace the concept of a unified national response, including developing plans, conducting assessments, and providing capabilities and resources in a layered and mutually supporting fashion. Primary responsibility for the public health and welfare of citizens was directed to states, territories, and tribal nations, as these entities are closest to those impacted. Highlighted within the chapter on planning is the value of planning: "Planning provides two principal benefits: (1) it allows jurisdictions to influence the course of events in an emergency by determining in advance the actions, policies and processes that will be followed; and (2) it contributes to unity of effort by providing a common blueprint for activity in the event of an emergency. Planning is a foundational element of incident response and thus an essential homeland security activity. Emergency planning is a national priority, as reflected in the *National Preparedness Guidelines*. Planning activities under the *Framework* include the collection and analysis of relevant intelligence and information, and the development of plans, procedures, response capabilities, mutual aid agreements and other tools that operationalize relevant laws, policy and preparedness guidance necessary for incident response ."[50]

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[49] "National Strategy for Homeland Security," Homeland Security Council. October 2007: 1.

[50] "National Response Framework," U.S. Department of Homeland Security. January 2008: 3-4, 67.

A unique federal, multi-agency approach to assist states in improving state-level pandemic influenza operating plans attempts to build on the progress the states made since the initial assessments were undertaken and incorporates a collective lessons learned by the various U.S. Government Departments. The new guidance focuses on operating plans "that manifest a) clear-cut operating objectives, b) definitive implementation strategies, c) unequivocal specification as to which organizations or individuals are responsible for which elements, and d) measurable performance objectives ."[51]

Specifically highlighted in this collaborative guidance were three strategic goals: 1) ensure continuity of operations of state and local agencies and state government, 2) protect citizens as the principal responder in the influenza pandemic, and 3) sustain/support 17 critical infrastructure and key resource sectors.[52] Reiterated within this federal guide is the emphasis to include preparedness and planning, although these activities would not normally be included in an operating plan. The document further provides fundamental elements for successful preparation and inclusion into both plans and operations, including involving the state and local leadership, treating pandemic as an all-sectors issue (vice solely a health concern), collaborating with neighboring and distant states, and across society at the state level, engaging regional Principal Federal Officials for coordination of the federal response effort, and finally, addressing the individual citizens preparedness.[53]

The Department of Homeland Security and Department of Health and Human Services have also published guidance on pandemic issues under their combined banners. This collaboration signals the public that both agencies concur on critical findings and preventative and mitigation strategies regarding public health in general, and pandemic

[51] "Federal Guidance To Assist States In Improving State-Level Pandemic Influenza Operating Plans," U.S. Government Presentation to the American States, Territories, and District of Washington. March 11, 2008: 3.

[52] Ibid., 3-4.

[53] Ibid., 6-7.

influenza specifically.[54] The agencies have also developed a Webcast, PlanFirst, to assist states, local communities, faith-based and civic organizations, and individuals learn more regarding pandemic planning.[55]

The Centers for Disease Control and Prevention (CDC) developed multiple guides to facilitate pandemic planning, and serves in the pivotal role of coordinating public health matters throughout the United States, with internationally recognized expertise in all aspects of public health. With the release of interim pre-pandemic guidance, CDC offered communities the potential for utilizing nonpharmaceutical interventions to provide a basis for developing a comprehensive community mitigation strategy. Interventions recommended require advance planning, and emphasis toward community preparedness for cascading second- and third-order effects are also noted.[56] An article published by the CDC remarked "…the H5N1 influenza threat is viewed with disturbing complacency; a frequently heard statement is 'since the virus has not adapted to continuing human-to-human transmission by now, it is unlikely to do so in the future.' Such complacency is akin to living on a geologic fault line and failing to take precautions against earthquakes and tsunamis."[57] As the primary organization charged to coordinate public health throughout the United States, CDC is actively pursuing multiple angles to facilitate pandemic planning across all levels of government. CDC's outreach extends to the production of Pandemic Influenza checklists and a nationwide system specifically designed to rapidly inform all agencies about any public health emergencies, the Health Alert Network (HAN), which has been replicated within many states for their own internal applications.[58] CDC also publishes press releases to keep the public informed of

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[54] "HHS and DHS Announce Guidance on Pandemic Vaccination Allocation," U.S. Department of Homeland Security Press Release. http://www.dhs.gov/xnews/releases/pr_1216831362171.shtm Accessed July 24, 2008: 1.

[55] Ibid., 1

[56] *Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States — Early, Targeted, Layered Use of Non-Pharmaceutical Interventions*, U.S. Department of Health and Human Services. February 2007: 7-8.

[57] *Emerging Infectious Diseases, H5N1 Outbreaks and Enzootic Influenza,* Centers for Disease Control and Prevention. January 2006: 3.

[58] *Pandemic Influenza: Preparedness and Response-Public Health Emergency Response: A Guide for Leaders and Responders.* U.S. Department of Health and Human Services. October 2007: 2.

any significant updates in the pandemic influenza arena, as they did in September 2008 with the announcement of the awarding of 24 million dollars in pandemic influenza preparedness projects, which should serve to inspire innovative approaches in influenza pandemic planning or to spur accelerated, state and local planning efforts.[59] In their internal organizational influenza pandemic operational plan, CDC provides their mission statement, indicating the necessary planning and actions required to successfully respond and mitigate pandemic effects, and that their guidance will also assist external agencies in better comprehension of operational planning.[60]

Recent actions which were initiated within the interagency community led to the establishment of pandemic planning within the Department of Defense (DoD), with primary efforts geared toward developing plans to prepare for, detect, respond to, and contain the effects of a pandemic on military forces, DoD civilians, DoD contractors, dependents, and beneficiaries, while also providing assistance to both foreign and domestic civil authorities. Additionally, the planning effort also includes key security concerns which may result from a pandemic event, such as humanitarian relief and stabilization operations.[61] Although DoD will prepare for and respond to all four focus areas described in the National Implementation Plan, DoD will also include a specified fifth task, that of support to international partners and international stability and security.[62] Due to its primary roles of Homeland Security and Homeland Defense, United States Northern Command (USNORTHCOM) was given the primary role of developing concept of operations plans to support the pandemic planning efforts for the entire DoD. Primarily concerned with continuity of operations, force protection, and providing support to civil authorities, USNORTHCOM also recognizes the need for a continental strategy and the need to work with Canada and Mexico to promote a unified North

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[59] "CDC Awards $24 Million for Pandemic Influenza Preparedness Projects," CDC Press Release. September 24, 2008: 1-3.

[60] *CDC Influenza Pandemic OPLAN*, Executive Summary. January 11, 2008: xi-xv.

[61] *Department of Defense Implementation Plan for Pandemic Influenza*, Office of the Assistant Secretary of Defense for Homeland Security. August 2006: 3.

[62] Ibid., 9

American approach to pandemic planning.[63] USNORTHCOM continues to be the lead DoD proponent and participant in major interagency and national level exercises, and consistently incorporates lessons learned to ensure pandemic plans remain effective and relevant.[64] There are indications that the military planning community established a model for effective planning that other planning communities should emulate. "The leading roles assigned to DoD by the Homeland Security Council and approved by the President in the National Strategy for Pandemic Influenza Implementation Plan (NSPIIP), appear to indicate government recognition that the interagency may lack the capacity to conduct and execute effective operational planning, and that there is a need for DoD planning expertise to fill this gap. If this view is accurate, then it is recognized that military planning and execution processes and capabilities are not only different, but also more disciplined than conventional interagency planning methods ."[65] "The armed forces of the United States live and die by their planning capabilities; therefore, the standards for military planning are inherently much higher than elsewhere in the interagency ."[66] "Several think tank organizations have expressed the need for improving the way our government approaches, conducts, and executes planning regarding all facets of government responsibility. They collectively acknowledge that one of the most critical government functions is protecting the nation's security, and in this era of advanced technology and limited resources accomplishing this purpose requires all entities of government to mutually support each other effectively and efficiently ."[67] State and local planners, while having somewhat differing priorities in their planning objectives, may benefit from adopting the military planning process, as time and resources may be quickly depleted in developing a localized approach to pandemic planning.

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[63] "NORTHCOM hosts Canada, Mexico at Pandemic Influenza Conference," *Armed Forces Information Service*. http://www.globalsecurity.org/security/library/news/2007/09/sec-070907-afps01.html Accessed June 17, 2008: 1-2.

[64] "Air Force plays in pandemic flu exercise," Department of Defense DSCA News Alert. http://www.arnorth.org/course/studies.cfm?course=NEWS_CENTER Accessed December 13, 2008: 1.

[65] "Pandemic Flu – Are We Ready?" *Joint Center for Operational Analysis Quarterly Bulletin IX*, Issue 1. December 2006: 8.

[66] Ibid., 11.

[67] Ibid., 12.

Given the unique responsibility for evaluation and oversight of the governance and execution of federal plans, programs, and policies, the United States Government Accountability Office (GAO) arguably has the most extensive review of the national preparedness efforts, including those involving pandemic planning. Several GAO reports have highlighted key challenges that remain in pandemic planning despite the plethora of federal documents. One report called for the Department of Homeland Security (DHS), through the Federal Emergency Management Agency (FEMA), to evaluate the further development and implementation of the National Preparedness System, focusing on natural disasters, terrorist events, and an influenza pandemic by assessing capabilities at all levels of government, and also provide guidance and direction to ensure an integrated jurisdictional and regional approach in disaster planning.[68] Another GAO report called for "the Secretaries of Homeland Security and Health and Human Services to work together to develop and conduct rigorous testing, training, and exercises for pandemic influenza to ensure that federal leadership roles are clearly defined and understood and that leaders are able to effectively execute shared responsibilities to address emerging challenges."[69] DHS and FEMA's management of the *National Response Framework* (NRF) was the subject of another GAO study that revealed a disconnect in the proposed coordination publicized in the development of the document, specifically that DHS conducted an internal federal review and omitted providing a draft for comment to the non-federal stakeholders. GAO recommended that DHS fully engage non-federal stakeholders in the future as it continues to revise the NRF in the future.[70] This outreach would facilitate coordination across the planning communities, and would enhance the perception of inclusiveness among all communities of interest. In testimony before the Committee on Homeland Security, William O. Jenkins, Jr. Director of Homeland Security and Justice stated "DHS' efforts to develop operational plans to guide other

[68] "Homeland Security – Observations on DHS and FEMA Efforts to Prepare for and Respond to Major Catastrophic Disasters and Address Related Recommendations and Legislature," GAO report number GAO-07-1142. July 31, 2007: 8-9.

[69] "Influenza Pandemic – Further Efforts Are Needed to Ensure Clearer Federal Leadership Roles and an Effective National Strategy," GAO report number GAO-07-781. August 2007: 8.

[70] National Response Framework, "FEMA Needs Policies and Procedures to Better Integrate Non-Federal Stakeholders in the Revision Process," GAO report number GAO-08-768. June 2008: 16, 27.

federal agencies' response efforts and metrics for assessing federal capabilities are incomplete. In addition, DHS is still establishing a process to measure the nation's overall preparedness based on the Target Capabilities List (TCL) and has not yet developed a complete inventory of all federal response capabilities ."[71] Key observations from a September 2008 report indicate HHS may face extreme challenges in having states and local jurisdictions implement nonpharmaceutical interventions which may drastically reduce the overall effectiveness of these interventions, recognizing that HHS has no authority to mandate jurisdictions comply with its guidance. Encouraging state and local jurisdictions to comply with nonpharmaceutical interventions will be even more challenging as HHS guidance does not indicate when implementation should begin and end, and HHS cannot effectively communicate how jurisdictions should convince residents to comply with state and local intervention guidance.[72]

In an attempt to prepare states, businesses, families and local communities to address nonpharmaceutical intervention strategies, CDC issued a 108-page document, with a special note indicating the guidelines should be adjusted as necessary to meet the anticipated needs as a pandemic unfolds.[73] Among the intervention strategies suggested was immediately closing schools as a method to limit transmission, with the projected reduction in peak attack rates dropping by 39 to 45 percent during a prolonged school closure.[74] Much of the success from the social distancing strategies such as school closures relies on the personal efforts of citizens to protect themselves as much as possible, recognizing that this strategy, combined with antiviral drug applications, could significantly slow the spread of an influenza pandemic .[75]

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[71] "Emergency Management – Observations on DHS's Preparedness for Catastrophic Disasters," GAO report number GAO-08-868. June 11, 2008: 4.

[72] "Influenza Pandemic: HHS Needs to Continue Its Actions and Finalize Guidance for Pharmaceutical Interventions," GAO report number GAO-08-671. September 2008: 40-41.

[73] "Government issues pandemic flu plans," *USA Today*. http://usatoday.printthis.clickability.com/pt/cpt?action=cpt&title=Government+issues+pandemic Accessed February 19, 2008: 1-2.

[74] "School closings may be no holiday for flu pandemic," *Reuters*. http://www.reuters.com/articlePrint?articleId=USN092075202 0080409 Accessed April 10, 2008: 1-2.

[75] "Pandemic flu plan would put Chicago on lockdown," *Reuters*. http://www.reuters.com/article/domesticNews/idUSN1044653520080311?sp=true Accessed July 3, 2008: 1-2.

A recent announcement by the U.S. Department of Health and Human Services of an infusion of an additional 75 million dollars toward pandemic influenza response planning grants, as a substantial supplement to a previously announced 430 million dollars, will aid states in procuring essential medical supplies and equipment, and also assist in the continued development of pandemic planning efforts.[76] Despite this infusion of federal funds, some public health experts highlighted the CDC's reduction in overall funding for emergency preparedness since fiscal year 2006, when the funding dropped from 991 million dollars to 897 million dollars in fiscal year 2007, and a projected 609 million dollars for fiscal year 2009.[77] Whether this decline in federal funding will ultimately impact the next generation of pandemic planning initiatives is yet to be determined.

As evidenced by the sheer volume of planning information available to the pandemic planning communities, it is easy to imagine that planners may be confused over which specific guidance to follow. Within their respective domains, communities are driven to plan according to the guidance of agencies under whose realm of influence they fall. State planners acknowledge that the single agency providing overarching guidelines, according to legislative mandate, is the Department of Health and Human Services. Savvy planners also recognize that no single plan is perfect, thus the planning community frequently reviews other similar plans and adopts those processes, techniques, and procedures that would be beneficial for inclusion in their base plan. The ability to glean the best guidance from the vast library of guides and transform the information into a hybrid plan to meet the states' needs should be construed as a positive outcome rather than a confusing issue.

Ensuring all available national capabilities and authorities produce response plans that are complementary and capable will require significantly integrated planning efforts

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[76] "$75 million made available for outbreak," *United Press International*. http://www.upi.com.International_Security/Emerging_Threats/Briefing/2007/09/04 Accessed April 21, 2008: 1.

[77] "U.S. States better prepared for disasters," *USA Today*. http://www.usatoday.com/news/nation/2008-02-20-emergency-preparedness_N.htm?csp=15 Accessed February 21, 2008: 1-2.

across both government and private sector environments. Without the planning and coordination information Health and Human Services is tasked to provide, agencies may develop plans which will be either ineffectual or irrelevant. It is imperative that each agency within the planning community plan, interact, communicate, and coordinate with all federal departments and agencies, across different domains, as well as with state and local governments. This coordination within planning communities, while needed among all levels of local, state, and national agencies, would also benefit the international community as well, both in terms of maximizing best practices and continuing to integrate pandemic planning efforts worldwide.

C. MEDIA AND ADVOCACY GROUPS REPORTS

There is little question the media and advocacy groups play a significant role in surfacing issues of national importance, and especially in the highly political arena of pandemic planning with its potential ramifications on public health. These entities frequently serve as government antagonists with the dual purpose of highlighting perceived and actual deficiencies as well as instigating sufficient public interest to result in government action to address the issues presented. Attacking the apparent confusion in the medical planning community in determining which department within the federal government is ultimately responsible for pandemic planning coordination, three comments from individuals serving in various capacities of public health capture the essence of the rising frustration surrounding pandemic planning. The pandemic coordinator for Los Angeles County states, "There were numerous conflicting guidance impulses at the federal level…that are neither explicit nor science-based" and "We cannot review guidance from different agencies and choose between them. That is not a scientific or rational process."[78] The professor and chair of the Department of Emergency Medicine, University of Rochester (New York) Medical Center notes "Sure, [the fed's planning] looks great on paper, but the reality is something else ."[79] The senior United

[78] Anthony Kimery, "Flu Season 2008," *HSToday 5*, no. 2. February 2008: 43.

[79] Ibid., 45.

Nations system influenza coordinator warned "many national pandemic plans are not sufficiently operational, and the coordination of pandemic planning between countries needs even greater attention."[80]

Trust for America's Health, a health advocacy nonprofit organization, found the influenza pandemic plans which were available to the public varied from comprehensive plans to stand-alone annexes to existing emergency plans, and to concise summaries of individual states' influenza pandemic plans. States and local jurisdictions participated minimally in the national planning for influenza pandemic[81], with little doubt that the excessive plans were either too complex or too contradictory to fully embrace.

The news media has been strongly divided on the state of pandemic planning at all jurisdictional levels, and even within aspects of medical preparedness and response. A common focus is oriented toward both medical facilities and influenza vaccine issues. Critics note hospitals are ill-prepared in bed space, trained staff, and medicinal stockpiles to adequately address a major pandemic.[82] A recent study reported in the *Journal of the American Medical Association* found only 23 percent of the more than 400 nursing homes in the study had specific pandemic influenza plans, and 52 percent had no pandemic plan. The study was conducted among state health department or Centers for Medicare and Medicaid-registered nursing homes.[83] With substantial challenges such as untrained staff, drug inventories kept at "just in time" levels, and lack of overall hospital bed space in airborne infection isolation rooms required to care pandemic patients, a healthcare industry disaster preparedness expert believes individual healthcare facilities may have improved their overall readiness since the terrorist attacks of September 11, 2001.[84]

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[80] Kimery, "Flu Season 2008," 45.

[81] "Influenza Pandemic – Federal Agencies Should Continue to Assist States to Address Gaps in Pandemic Planning," GAO report number GAO-08-539. June 2008: 17-18.

[82] Christopher Lee, "U.S. flu outbreak plan criticized," *Washington Post*. February 2, 2008: A03.

[83] "AMA Journal Says Most Nursing Homes Don't Have Pandemic Flu Plan," *Occupational Health and Safety* article. http://www.ohsonline.com/print.aspx?aid=65651 Accessed July 23, 2008: 1-2.

[84] Rick Barlow, "Pandemic Readiness: How Prepared are Facilities Really?" *Healthcare Purchasing News*. http://www.emsresponder.com/article/article.jsp?siteSection=15&id=6907 Accessed February 4, 2008: 2-4.

The National Governors Association for Best Practices conducted nine regional pandemic preparedness workshops to analyze state pandemic preparedness, including coordination activities among levels of government and the private sector. A key challenge identified during this effort was the absence of any baseline or agreed metric against which preparedness could be measured, and the fact that much of the initial motivation to expedite pandemic planning has diminished due to the limited spread of the H5N1 influenza to date.[85]

As indicated earlier, the media has considerable influence over government actions regarding the national pandemic influenza planning, serving to inspire a closer look at preparedness at local, regional, and national levels. Research from scientists in the probability of the influenza pandemic starting with contact from infected migratory birds, and published reports indicating no evidence of avian influenza despite testing of thousands of birds, may reduce the sense of urgency which initially garnered worldwide preparedness support[86], while at the same time any media updates reporting new human cases of H5N1 spurs the call for better animal health surveillance and public heath surveillance, as well as the funding to enrich the communication and collaboration needed to monitor avian influenza worldwide.[87] Substantial positive reporting also accompanies the announcement of potential successes in every area of pandemic preparedness, and especially with advancements in vaccines or the research driven by the pandemic influenza threat.[88] This positive aspect is balanced by the negative reporting frequently associated with reports of governmental decisions such as reports of Tamiflu, an anti-flu drug, being reserved for specific categories of professionals or individuals based on the need for their expertise during a pandemic[89], or the perception of an

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[85] "Pandemic Preparedness in the States, An Assessment of Progress and Opportunity," National Governors Association Center for Best Practices Issue Brief. September 2008: 1, 3-4.

[86] Maggie Fox, "Bird flu search finds none yet coming to N. America," *YAHOO! News*. http://news.yahoo.com/s/nm/20080606/h1_nm/birdflu_usa_dc_3 Accessed June 16, 2008: 1-2.

[87] Anita Manning, "Bird flu still a threat 10 years after leap to humans," *USA Today*. http://www.usatoday.com/news/health/2007-12-30-bird-flu-threat_N.htm Accessed July 3, 2008: 1-2.

[88] Linda A. Johnson, "Experts: New Bird Flu Vaccine Looks Promising," *Associated Press*. http://apnews.myway.com/article/20080611/iD9183UI00.html Accessed June 16, 2008: 1-2.

[89] Lauran Neegaard, "Reserving Tamiflu for workers in case of pandemic," *Associated Press*. http://apnews.myway.com/artcile/20080626/D91I07A00.html Accessed June 27, 2008: 1.

arbitrary government decision on who is essential during an influenza pandemic.[90] A recent report stirred instant and widespread public interest with revelations of a draft list, compiled by a task force of influential physicians from universities, medical groups, the military, and government agencies, with recommendations for prioritization of lifesaving care during a pandemic, in essence a determination of who doctors should let die.[91]

Acknowledging the complexities in pandemic planning and preparedness remains a stalwart of the media and advocacy groups. Reporting on the plans, medical facilities, vaccine availability and complexity in administration of a vaccination program are but a few of the recurring subjects under the constant scrutiny of both government protagonists and pandemic planning advocates. This continued focus highlights the evolving and dynamic nature of pandemic planning as it continues to mature.

D. REPORTS AND RESEARCH PAPERS FROM THE MEDICAL AND PUBLIC HEALTH COMMUNITIES

The final area of literature review incorporates the public health and medical communities outside the federal government who are primarily advocates for increased planning efforts and are extremely willing to highlight shortfalls in planning across all government sectors. This community of interest serves a watch dog function, and for the most part is altruistically motivated toward insuring the focus of pandemic planning and preparedness efforts serve to better protect the overall health of the general public. The American Public Health Association and American Medical Association are leading advocates in the promotion of pandemic influenza preparedness.

The American Public Health Association (APHA) took an aggressive stance in publishing pandemic influenza guidance and in providing outreach opportunities to the

[90] "Who Should Be Considered "Essential" During a Pandemic Flu Outbreak?" *Digital Journal.com* http://www.digitaljournal.com/print/article/260599 Accessed October 10, 2008: 1-2.

[91] Lindsey Tanner, "Who should MDs let die in a pandemic? *Associated Press.* http://ap.google.com/article/ALeqM5hDeWu9n8WS9L Accessed June 5, 2008: 1.

general public, including a blog, fact sheets, and two Get Ready Web sites at http://www.getreadyforflu.org and http://www.getreadyforflu.blogspot.com/.[92]

Maintaining vigilance and an active voice for pandemic preparedness issues, APHA also recommends increased funding throughout the public health system to expand the capacity anticipated in response to pandemic influenza and increasing investment in the public health personnel sector in preparation and response to a pandemic incident.[93]

APHA published a policy summary detailing subject areas requiring additional attention, as well as specific recommendations to address the issues. The subject areas addressed who will respond public health workforce issues, the role of nonpharmaceutical interventions, medical countermeasures, ensuring access to care, business and occupational health considerations, incorporating mental health into pandemic flu preparedness and response, and ensuring public health leadership.[94]

Another influential organization in the medical and public health arenas is the American Medical Association (AMA), dedicated to the promotion of medicine and bettering public health. AMA helped raise the total number of health professionals trained to respond to disaster to more than 30,000, and was also influential in planning the Second National Congress on Health System Readiness, with a focus on pandemic influenza.[95] Specific fields of medicine have also determined their collective importance to the challenges inherent during an influenza pandemic, and radiology professionals, with their chest radiography and computed tomography capabilities, will play a pivotal role in the diagnosis of a pandemic influenza. These professionals will ultimately be put

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[92] "Public Health Leaders Want Pandemic Planning Moved to HHS from Homeland Security." *Senior Journal*. http://seniorjournal.com/spotlights/FLU2005-06/6-11-07-PublicHealthLeaders.htm Accessed November 14, 2008: 2-3.

[93] Sabrina Jones, "New Prescription for Pandemic Flu Released," http://www.medscape.com/viewarticle/553128 Accessed November 14, 2008: 1-2.

[94] "APHA's Prescription for Pandemic Flu," American Public Health Association Policy Summary. http://www.apha.org Accessed October 10, 2008: 1-15.

[95] "AMA Performance, Activities, and Status in 2006," Report of the Board of Trustees, American Medical Association. http://www.ama-assn.org/ama1/pub/upload/mm/467/bot28a07doc Accessed November 14, 2008: 1, 4.

under ethical challenges to provide care even though repeated radiological exposure could put themselves and their families at risk. Significant numbers of medical providers will also face this ethical dilemma during the pandemic influenza response and recovery phases.[96]

Perhaps one of the most prolific sources of information reporting on pandemic planning is the University of Minnesota Center for Infectious Disease Research and Policy, more commonly known as CIDRAP. Reporting on the online resource and community forum FluWIKI, CIDRAP praised the level of detail shared by the science advisor to HHS, Doctor William Raub, and highlighted an emerging theme that federal officials strongly endorse the need for a shared responsibility in pandemic planning. Raub wrote that citizens can expect the federal government to engage in pandemic planning with a prominent role, but "To the extent that potential partners refuse to apply their talents and assets unless the federal government foots the bill, they are abdicating their responsibility and thereby placing their communities at higher risk than need be."[97]

CIDRAP also tracks pandemic planning around the globe, reporting on international conferences, further preparedness publications from WHO, and updates on medical treatment and advances in disease control, surveillance, and pharmaceutical initiatives.[98] Capturing the sentiment from national and international health leaders at a meeting in Malaysia, CIDRAP noted attendees warned of complacency due to the belief nothing can be done to avert a pandemic or that a solution is imminent, even among high levels of government.[99]

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[96] Richard B. Gunderman MD, PhD, and Brandon P. Brown, BA, "Pandemic Influenza," *Radiology*, 2007. http://radiology.rsnajnls.org/cgi/content/full/243/3/629 Accessed November 14, 2008: 1-2, 7.

[97] Lisa Shnirring, "HHS advisor fields online pandemic preparedness queries," *CIDRAP News*, http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/feb1908wiki.html Accessed July 3, 2008: 1.

[98] "WHO begins pandemic guidance update," *CIDRAP News*. http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/may0608meeting.html Accessed May 7, 2008: 1.

[99] "Health Leaders: World far from ready for flu pandemic," *CIDRAP News*. http://www.cidrap.news.umn.edu/cidrap/content/influenza/panflu/news/jun2308unprepared.html Accessed June 24, 2008: 1.

A task force of Canadian and American medical experts scrutinized disaster preparation, surge capacity, and rationing across the spectrum of natural disasters, pandemics, and terrorist attacks, and emphasized a shortfall many planners have overlooked: the probability that an influenza pandemic or terrorist attack will not only increase demand for critical medical supplies, but will also severely cripple supply lines.[100] With reports that the U.S. has enough prepandemic influenza vaccine to inoculate 13 million people, and HHS reporting an investment of more than 130 million dollars toward additional vaccine research,[101] communities are anxious to see substantial progress in vaccine availability to alleviate the known shortfall. A Congressional Budget Office report recommended a shift in funding to support development of adjuvants and next-generation vaccines,[102] even as many states report robust stockpiles of antiviral drugs.[103]

The repercussion of not including local communities and neighborhood organizations to refine pandemic plans could include a loss of public support. Most pandemic plans fail to tap into a community's self-knowledge, and the lack of effort to connect this linkage fails to recognize how influential community activists and grassroots organizations can be in the planning process.[104]

With the majority of information focused on domestic issues, CIDRAP maintains vigilance over a wide assortment of evolving issues, such as the tiered approach in a

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[100] Schnirring and Roos, "Critical care panel tackles disaster preparation, surge capacity, rationing," *CIDRAP News*. http://www.cidrap.news.umn.edu/cidrap/content/influenza/biz-plan/news/may1308chest.html Accessed May 19, 2008: 3.

[101] "US has enough H5N1 vaccine for 13 million people," *CIDRAP News*. http://www.cidrap.news.umn.edu/cidrap/content/influenza/panflu/news/mar2008panupdate.html Accessed March 21, 2008: 1-2.

[102] Schnirring and Roos, "Report suggests refocusing U.S. pandemic vaccine efforts," *CIDRAP News*. http://www.cidrap.news.umn.edu/cidrap/content/influenza/panflu/news/sep2208cbo.html Accessed September 23, 2008: 1-3.

[103] Schnirring, "Governors group identifies states' pandemic-preparedness gaps," *CIDRAP News*.http://www.cidrap.news.umn.edu/cidrap/content/influenza/avianflu/news/oct1608states-jw.html Accessed October 17, 2008: 1.

[104] Maryn McKena, "Pandemic planners urged to tap grassroots," *CIDRAP News*. http://www.cidrap.news.umn.edu/cidrap/content/influenza/panflu/news/apr1707citizen.html Accessed June 13, 2008: 1-3.

vaccination plan recommended by federal health officials, as well as the blowback from CIDRAP's own director due to the lack of consideration to specifically address key infrastructure and economic issues.[105]

With few large-scale pandemic influenza response exercises to use as a sample base, CDC nonetheless published recommendations from a March 2008 exercise, identifying potential benefits from the incorporation of subject-matter experts and planning experts in a planning-cell approach to more carefully assess dynamic situations as a pandemic event unfolds. CDC's report also recognized that an influenza pandemic will likely unfold at varying rates and in different ways in different regions of the country.[106]

During the 2007 CDC Summit on business preparedness, CIDRAP notes Julie Gerberding, MD, director of CDC, emphasized that CDC lists 1,600 tasks under the heading of pandemic preparedness, and that preparedness requires careful planning, with recommendations for exercises to test the validity of the plans.[107] Capturing comments on funding to help state and local public agencies build a mechanism to respond during pandemic influenza and other health emergencies, CIDRAP discloses CDC's Public Health Emergency Program (PHEP), a cooperative grant program, has distributed $4.9 billion in funds from fiscal years 2002 through 2007.[108] CIDRAP captures and reports on pandemic planning developments within individual states as well as regionally. CIDRAP notes that Indiana county-level planners encountered problems across the spectrum — from misunderstandings of the threat to a lack of coordination, and even rivalry between hospitals — and "some planners thought a pandemic would involve such

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[105] Schnirring and Roos, "New pandemic vaccine plan keeps focus on critical workers," *CIDRAP News*. http://www.cidrap.news.umn.edu/cidrap/content/influenza/panflu/news/jul2308vaccine.html Accessed July 24, 2008: 1-4.

[106] Roos, "CDC says pandemic drills hone decision-making tools," *CIDRAP News*, http://www.cidrap.news.umn.edu/cidrap/content/influenza/panflu/news/mar2508exercise-jw.html Accessed April 4, 2008: 1-2.

[107] Roos, "2007 Summit Coverage: CDC Chief calls pandemic preparedness a marathon," *CIDRAP News*, http://www.cidrap.news.umn.edu/cidrap/content/influenza/panflu/news/feb0607gerberding.html Accessed May 8, 2008: 1-2.

[108] Schnirring, "Public health groups report emergency preparedness gains," *CIDRAP News*, http://www.cidrap.news.umn.edu/cidrap/content/influenza/panflu/news/sep3008preparedness-br.html Accessed October 2, 2008: 1.

high rates of illness and death that planning would be useless, and many officials had unrealistic expectations about getting help from outside sources such as the National Guard or the state governor."[109] Quick to propagate practices with the potential for successful application across the United States, CIDRAP publishes "Promising Practices For Pandemic Planning," with recent reports revealing North Carolina's development of disaster preparedness kiosks, touch-screen computers available to assist county and city public health departments in outreach programs to provide interactive presentations on various health related topics, to include pandemic preparedness.[110] Another success highlighted was the launch of an online toolkit to streamline the needs assessments of vulnerable populations in Kansas, and noted the kit includes Spanish translations to assist in assessments.[111]

CIDRAP's "Promising Practices: Pandemic Preparedness Tools" is an online database showcasing peer-reviewed practices to assist other practitioners with their planning. Twelve state initiatives in establishing formal collaborations between public health and healthcare systems were published in early 2008, and the practices revealed a concerted effort to strengthen the collaborative process among these agencies.[112] Other initiatives among the states include a "Parents' Guide to Pandemic Flu" developed in Michigan[113] and Alabama's "Flu and You" Pandemic Flu educational poster, which

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[109] Roos, "Indiana profiles local pandemic planning problems," *CIDRAP News*. http://www.cidrap.news.umn.edu/cidrap/content/influenza/panflu/news/jul0908counties.html Accessed July 11, 2008: 1.

[110] Schnirring, "North Carolina fosters preparedness with a touch of a finger," *CIDRAP News* s article. http://www.cidrap.news.umn.edu/cidrap/content/influenza/panflu/news/may0508kiosksppp.html Accessed May 19, 2008: 1-2.

[111] Schnirring, "Kansas launches assessment tool to gauge needs of at-risk groups," *CIDRAP News*. http://www.cidrap.news.umn.edu/cidrap/content/influenza/panflu/news/mar1008kansaspp.html Accessed March 10, 2008: 1-2.

[112] "Formal collaborations between health and the healthcare system," Promising Practices: Pandemic Preparedness Tools," *CIDRAP News*, http://pandemicpractices.org/practices/list.do?topic-id=7 Accessed January 25, 2008: 1-2.

[113] "Parents Guide to Pandemic Flu (MI)," Promising Practices: Pandemic Planning Tools," *CIDRAP News* http://pandemicpractices.org/practices/resource.do?resource-id=293&state-id=277 Accessed January 25, 2008: 1.

promotes hygiene and social distancing.[114] CIDRAP also reports on pandemic planning developments within other agencies, including the Department of Defense. Given the ominous task to address the mortuary and medical necessities inherent to a national pandemic event, Joint Task Force Civil Support recommends the development of a separate Emergency Support Function within DHS to deal exclusively with mass fatalities, and includes the creation of memoranda of understanding among medical professionals with similar skill sets such as pathologists, anthropologists, and dentists, among others.[115]

In summary, reports and research papers from the medical and public health communities serve to keep numerous medical practitioners, planners, politicians, and international public health organizations apprised of continuing developments in pandemic planning efforts. These organizations and individuals highlight positive developments, such as medicinal advances and best practices in preparedness initiatives, as well as international developments impacting the public health community at large. Their perspective and openness in reporting negatives, such as shortages in medical practitioners and bed spaces, funding for more research, and consequences of inadequate coordination also provides value across pandemic planning communities.

E. CHAPTER SUMMARY

In order to adequately assess planning within the United States, it is useful to step back and evaluate whether this nation falls short, parallels, or leads other nations in pandemic planning. The literature review indicates the U.S. leads in virtually all aspects, and is one of the leaders in both financing and facilitating international pandemic planning efforts, primarily though the auspices of the World Health Organization and the Department of Health and Human Service's Centers for Disease Control and Prevention (CDC).

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[114] Alabama Pandemic Flu Poster. Promising Practices: Pandemic Planning Tools. *CIDRAP News* http://pandemicpractices.org/practices/resource.do?resource-id=289state-id=2 Accessed January 25, 2008: 1.

[115] "Mortuary and Medical Approaches to Mass Fatalities (National)." Promising Practices: Pandemic Preparedness Tools, *CIDRAP News* http://pandemicpractices.org/practices/resource.do?resource-id=176&standards-id=4 Accessed January 25, 2008: 1.

This literature review provides a solid foundation upon which to further explore the adequacies in pandemic planning across the United States. It is already suspected, based on this cursory review, that further analysis of pandemic plans developed on common guidance may reveal disparities in consistency, with potentially devastating results if not effectively remedied.

Beyond early multiagency confusion over which government agency was responsible for pandemic planning, there are clear indications that a coordinated federal, state, and local planning initiative failed to materialize. This was evidenced by the plethora of federal, media, advocacy group, and medical and public health publications and reports attesting to the lack of clear guidance from the federal government. Determining the amount and specificity of government guidance and direction, while a time-consuming initiative, may pay dividends in the revelation of how much or how little guidance is available to other pandemic planners.

Following this line of investigation, the following chapters of this thesis will analyze state and federal pandemic plans to determine adequacy and consistency among these plans.

Upon completion of the analysis, observations and recommendations will be submitted. It is already apparent, based on both the preliminary and comprehensive literature review, that the U.S. has significant room for improving the pandemic planning process. Two questions remain: What level of effort and course of action will be required, and do we have time to execute this option before the next pandemic occurs?

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III. ANALYTICAL MATRIX

A. MATRIX DEVELOPMENT

Developing an analytical tool to ensure consistency when comparing the state pandemic plans and the primary federal pandemic plan involved a somewhat complex process. The analytical tool evolved under the guidance of four professional plans analysts and twelve Subject Matter Experts (SMEs) from critical fields deeply entrenched in the response and recovery aspects of the pandemic planning process. The Emergency Plans Analysis Team (EPAT) is comprised of four members with master's degrees in various disciplines, and none of the four members has prior military service. EPAT routinely examines federal, state, and local jurisdiction crisis action plans for gap analysis purposes. The SMEs are all either military officers from all branches of service or military retirees. The average experience in their respective fields of expertise among the SMEs is approximately seventeen years, and these members were selected based on both their functional area and their years of experience. All participants routinely perform plans analysis within their respective functional areas, similar to the effort for this pandemic plans analysis.

The fields of expertise represented by the SMEs were communications, mortuary affairs, medical, command and control, transportation, public affairs, and logistics. Questions developed for the matrix reflect considerations for anticipated shortfalls in capabilities within these functional areas, with the presumption these shortfalls would constitute the bases for assistance requests from federal agencies should the state need help. The following are examples of questions from each functional area included within the matrix:

> (Communications) Does the plan address mobile contingency communications vehicles, systems and/or communications interoperability among the state and local first responders?

(Mortuary Affairs) Does the plan address the issue of initial supply and re-supply of Mortuary Affairs materials and equipment, to include refrigerated vans, human remains pouches, etc.?

(Medical) Does the plan address how medical officials will coordinate in a multi-jurisdictional environment, with local health departments and state and federal officials?

(Command and Control) Does the plan address how the state will coordinate with local and federal officials, as well as the private sector, to maintain critical infrastructure services as well as transportation, utilities, and food supply, especially in the event of significant and sustained absenteeism?

(Transportation) Does the state anticipate need for supplementation of local government transportation systems with personnel and logistical support in order to transport essential goods and emergency services personnel where necessary?

(Public Affairs) Does the plan address how medical officials/healthcare personnel will coordinate with public affairs/communications officials for information dispersal to the public, including public education and risk communication measures?

(Logistics) Does the plan identify facilities that can be used for temporary housing operations for quarantine and/or non-traditional treatment centers, identify who has responsibility for overseeing quarantine and/or treatment locations, and how care and feeding of quarantined citizens can be performed?

The resultant tool was a matrix comprised of fifty questions from these functional fields. The basic purpose was to objectively assess whether plans include information critical to determining the amount of potential support needed from federal agencies that may respond to the state requesting federal support. The second purpose was to assign one of three degrees to a state's compliance with the functional question presented:

- *Fully Addressed,* indicating the components were in place to meet the requirements within the subject matter question

- *Partially Addressed,* indicating planning components were in place and could meet some, but not all, of the requirements based on the question, yet lacked the requirements for consideration of the *Fully Addressed* rating

- *Not Addressed,* indicating formal plan components were not in place at the time this review was undertaken or subject matter was not addressed within the state plans

It is noteworthy to consider that the questions used to develop an analytical matrix will produce a more specific focus on varying aspects of the pandemic plans. Depending on the intentions for analysis, a similar matrix may be developed to look exclusively at public health concerns, the differing aspects within an internal program (such as the security, prioritization, and distribution of vaccines), or the legal ramifications resulting from mandated quarantine initiatives. Once an area for review is determined and the analytical tool developed, the process is rather straightforward.

The analytical matrix was developed before the state pandemic plans were accessed, thus the questions were not tailored against known deficiencies. Instead, they developed logically, without prior knowledge of what the state plans specifically addressed. The resulting documentation provides a gap analysis between local and state capabilities and potential mission assignments for the federal response force. The analysis is based solely on the information provided in the plans, and does not identify nor measure specific capabilities. The states were not provided the same criteria used to assess their plans, as their plans were already published prior to executing this analysis.

B. ANALYSIS PROCESS

Each functional area was evaluated by two members, and members were given the latitude to discuss their individual observations between themselves during the rating process. Inter-rater reliability was assessed as outstanding by the team leadership due to the established working relationships among the participants, as all members are assigned to the same organization outside this analysis effort. At any time during the process, members could consult with other functional experts within or outside the evaluation

team. It is noteworthy that, due in large part to the seniority of the participants and the resident expertise among the team, no requests for supplemental support were presented. A post-analysis briefing was presented to the EPAT and SMEs with the opportunity to challenge any of the observations and submissions, and only one area required further explanation, due to the complex nature of the subject matter.

The analysis was executed using Emergency Support Function (ESF) linkage through functional groupings, as depicted in *The National Response Plan*, as the National Response Framework had not been released prior to the publication of the state plans and HHS' plan. The actual analysis of all fifty state plans occurred over a span of more than four months. The *HHS Pandemic Influenza Plan* analysis took less than a week to execute, as it lacks the complexity and variances inherent among the state plans.

The summary of this process provides analysis of state pandemic influenza plans and comparison to the federal plan to support both deliberate planning and contingency planning. The end product reveals commonalities in planning deficiencies among federal and state plans.

Per agreement with legal experts, the matrix and the results for individual states are not releasable outside Joint Task Force Civil Support (JTF-CS) without written permission from the Commander, JTF-CS, and are therefore classified. For the purposes of this thesis, the planning trends, deficiencies, laudable findings, and other observations were not specifically attributable to any single state, thus maintaining the integrity of the legal restrictions and allowing the results to be unclassified.

The final matrix design and the analysis process combined for an effort that exceeded five months in duration. Capturing professional plans analysts and subject matter experts to contribute to both aspects of this project was invaluable in developing the matrix tool, executing the analysis process, and validating the final analysis.

IV. ANALYSIS OF STATE AND FEDERAL PANDEMIC PLANS

Our Nation will face this global threat united in purpose and united in action in order to best protect our families, our communities, our Nation, and our world from the threat of pandemic influenza.

—President George W. Bush
May 2006

Pandemics, while rare, are not new. In the 20th Century, three flu pandemics were responsible for more than 50 million deaths worldwide, and almost a million deaths in the United States.

—The Pandemic Leadership Forum,
June 13, 2007

A. STATE PLANS ANALYSIS

It is important to note that while many states have pandemic influenza plans as stand-alone guides, others do not differentiate between pandemic influenza and other disaster scenarios. The states primarily intend pandemic influenza plans to augment existing state emergency operations plans and do not supersede biological or mass casualty annexes.

Thirty-nine states published pandemic influenza plans as stand-alone products, while eleven states have pandemic plans as an annex or appendix to more comprehensive disaster plans. Only three states specifically included additional plans with their overall pandemic influenza plan. Although originally required to have a state pandemic plan available to the general public by November 2007, several states missed that deadline. Specific reasons for this failure were not provided, but apparently, the tardiness incurred no repercussions. The majority of state plans were published in 2006 and 2007, with only a few exceptions as noted above.

The completed analysis revealed a substantial disparity on specificity among the states for planning to address:

- estimating the number of fatalities and assets needed to adequately manage the resultant strain on resources;
- anticipating the issues surrounding vaccine distribution, inventories, and licensing; response personnel recall and force augmentation processes;
- detailed procedures indicating points of contact for response agencies;
- implementation details for quarantine and isolation measures;
- procedures, security, and locations for distribution of emergency supplies; and
- specific procedures for coordination between agencies responsible for keeping the public informed,

This list highlights a few of the more common issues. The following graphs illustrate the disparities by functional areas, and the chapter conclusion will summarize the overall findings.

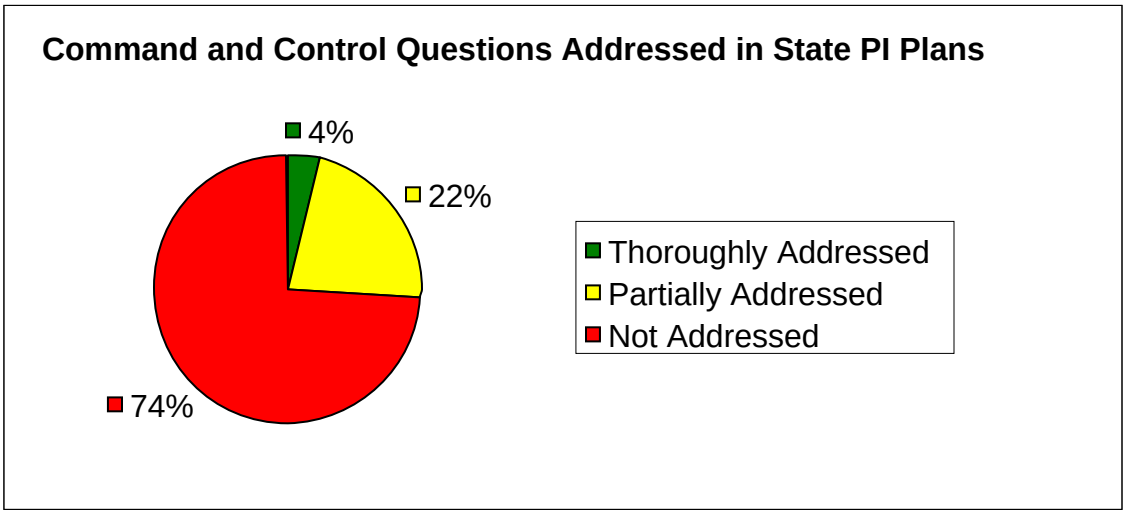

Figure 1. Most state plans failed to address command and control questions.

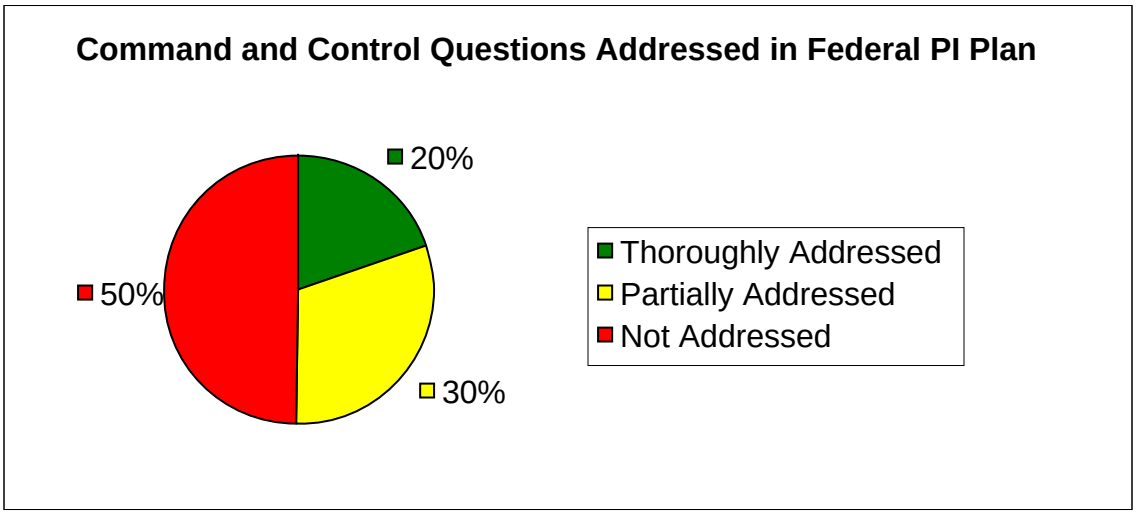

Figure 2. The federal plan failed to address 50 percent of the command and control questions.

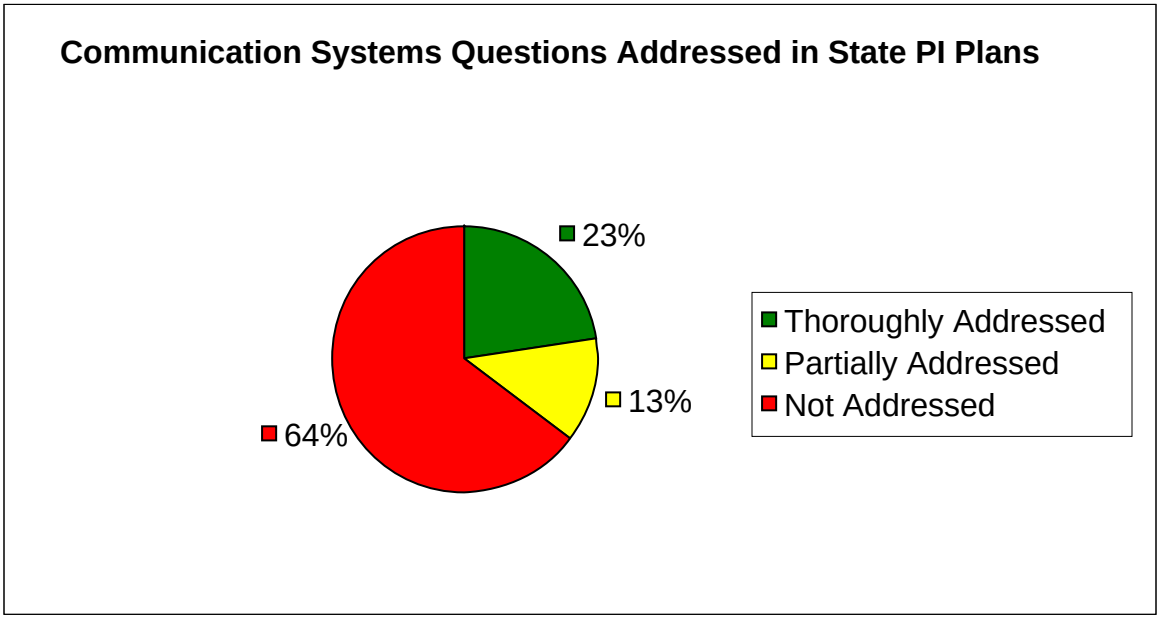

Figure 3. About one-fourth of the communications systems questions were thoroughly addressed by the state plans.

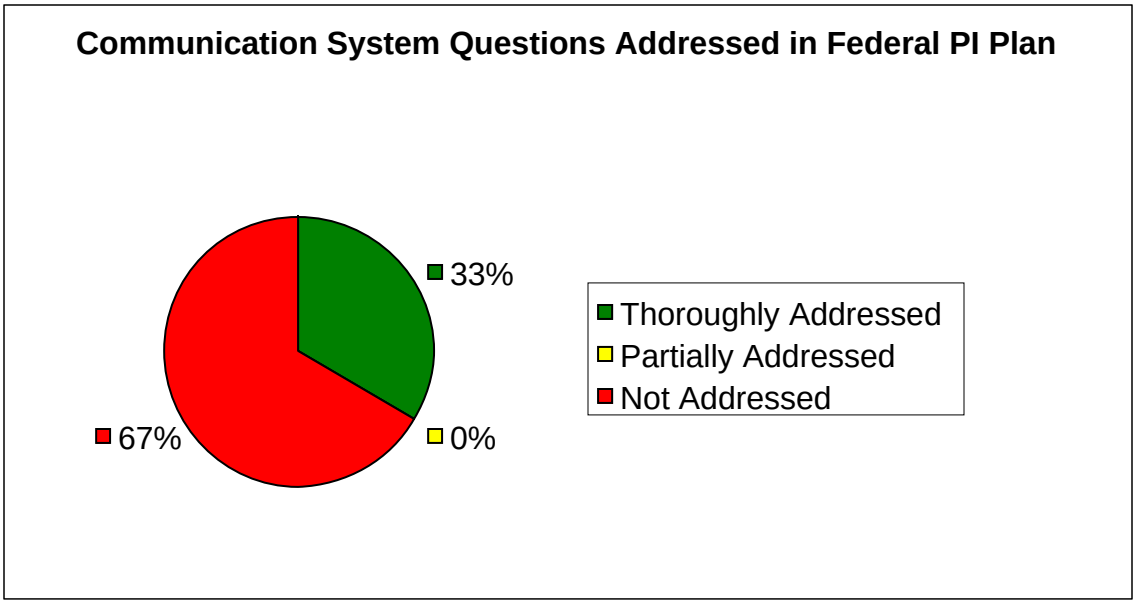

Figure 4. The federal plan failed to address more than two-thirds of the communication system questions.

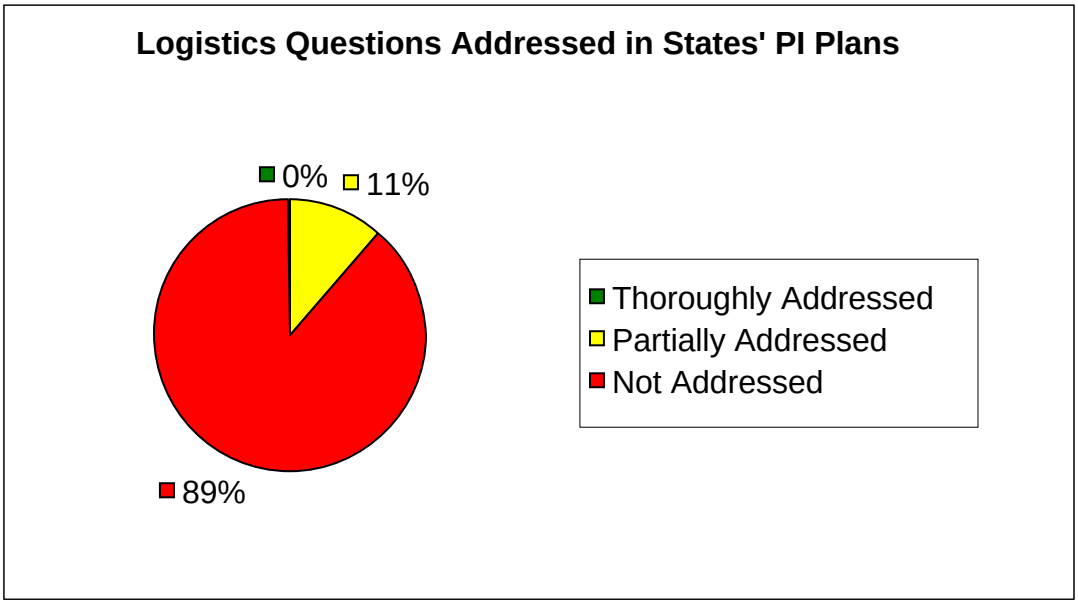

Figure 5. States overwhelmingly failed to address questions of logistics.

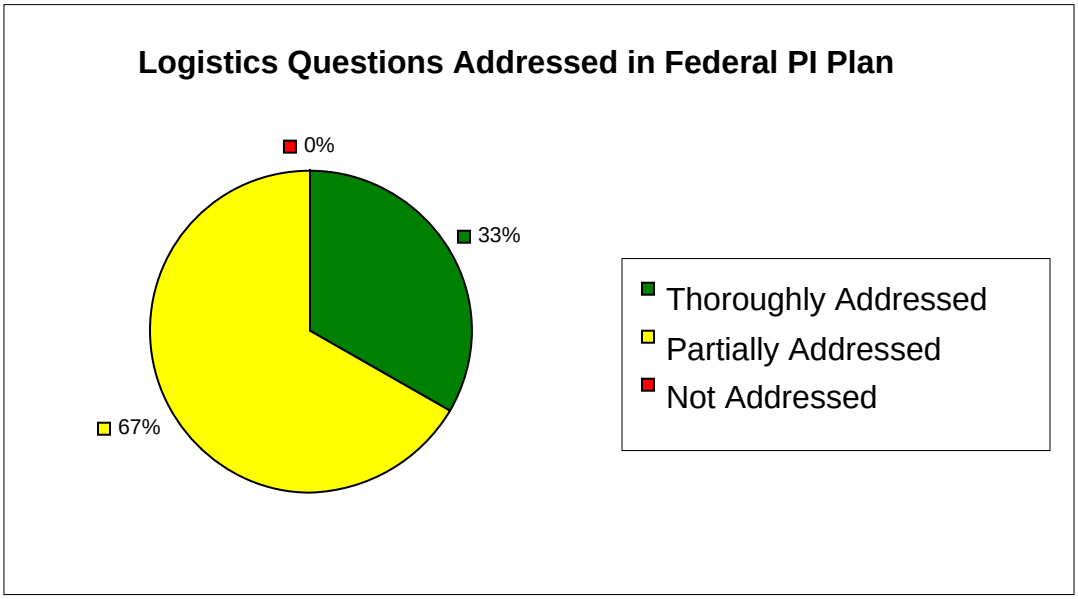

Figure 6. None of the logistics questions were ignored in the federal plan.

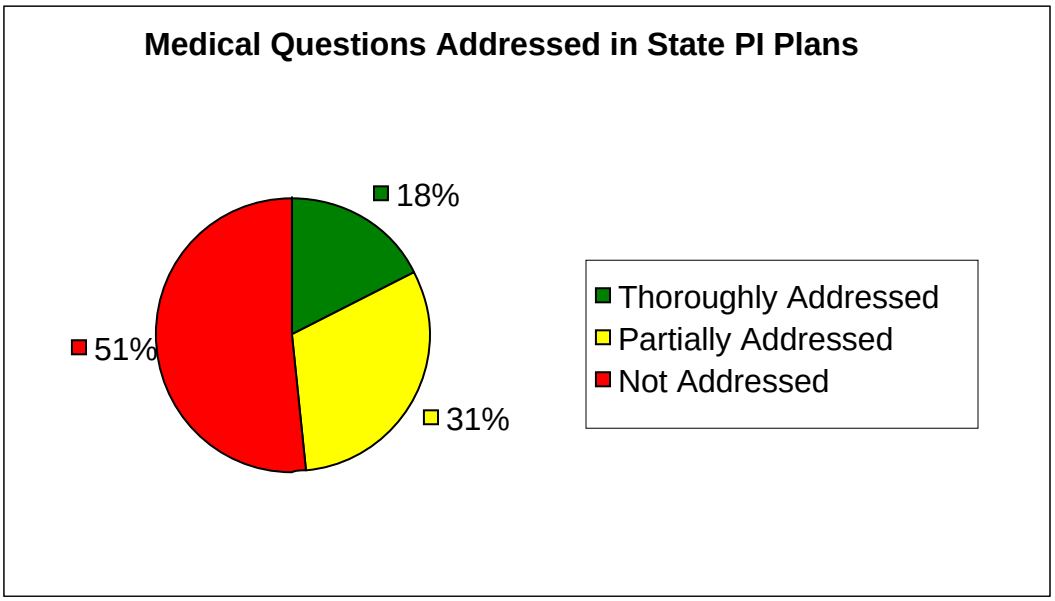

Figure 7. State plans addressed the majority of medical questions.

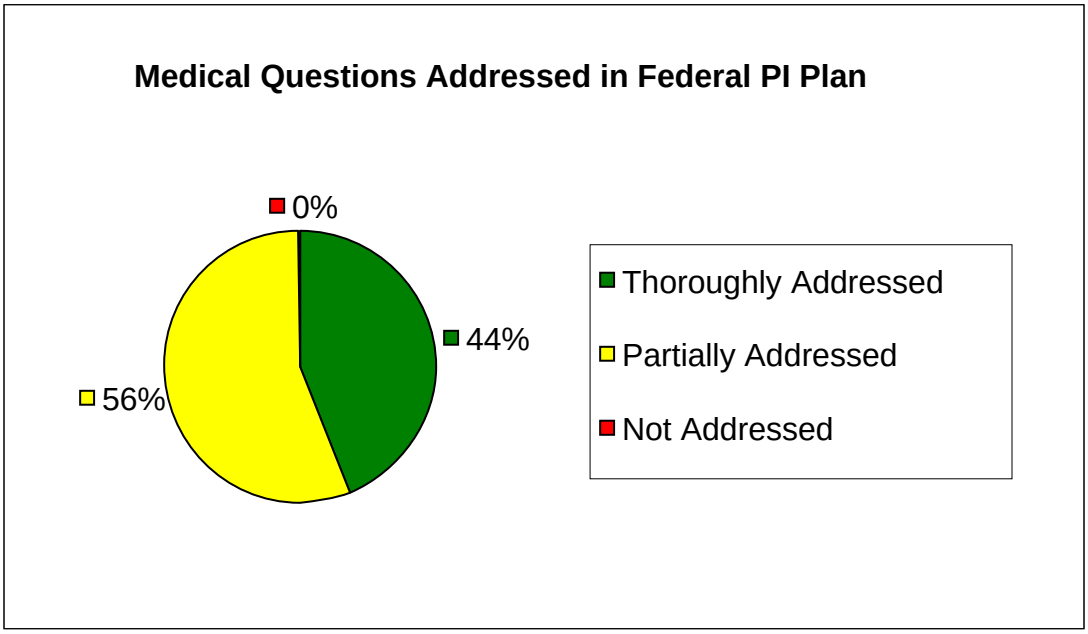

Figure 8. Federal plans addressed all of the medical questions.

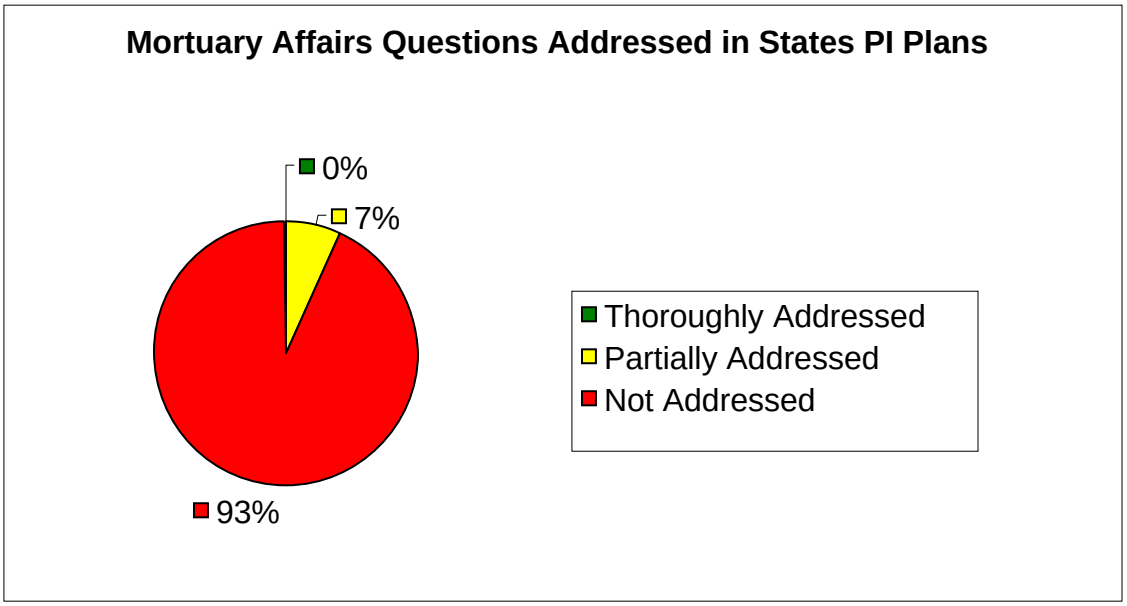

Figure 9. State plans failed to thoroughly address any of the mortuary affairs questions.

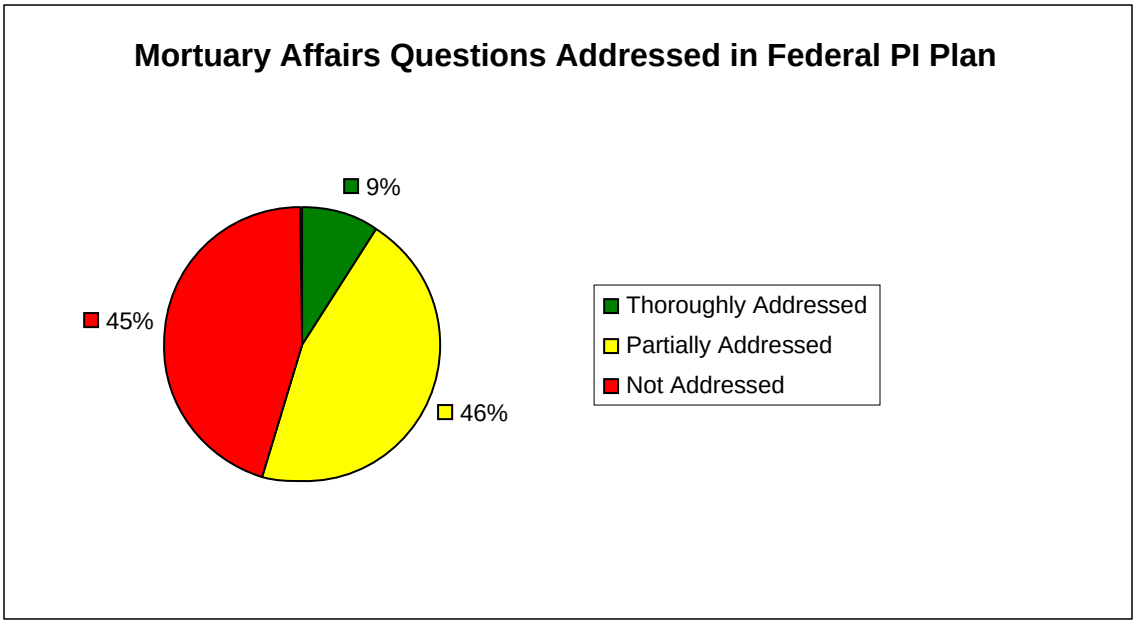

Figure 10. The federal plan addressed about half of the mortuary affairs questions.

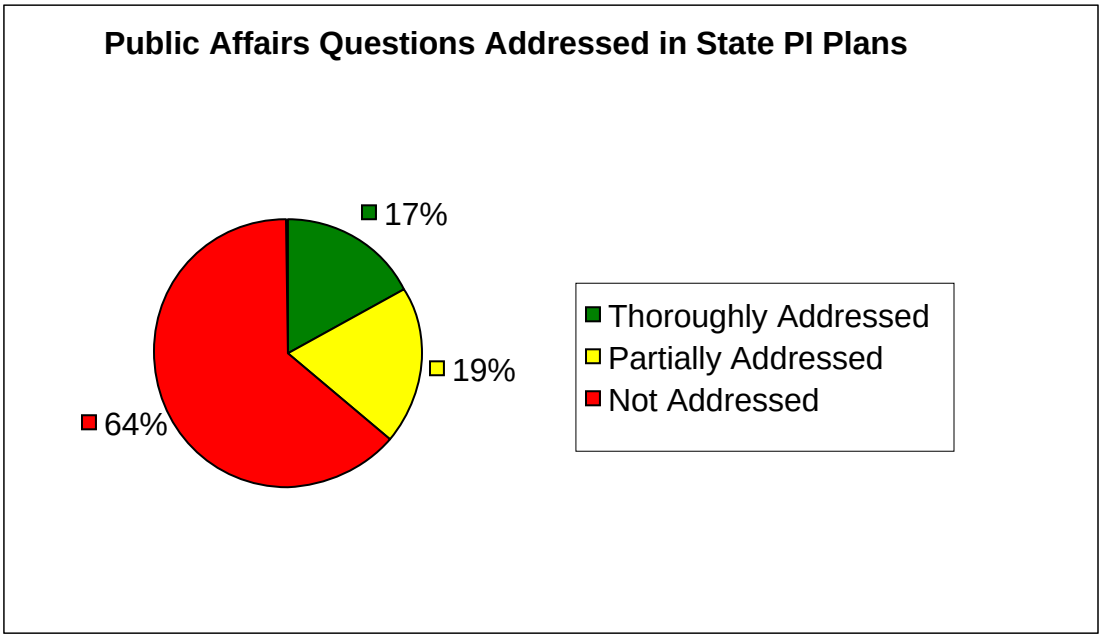

Figure 11. Public affairs questions were mostly ignored in the state plans.

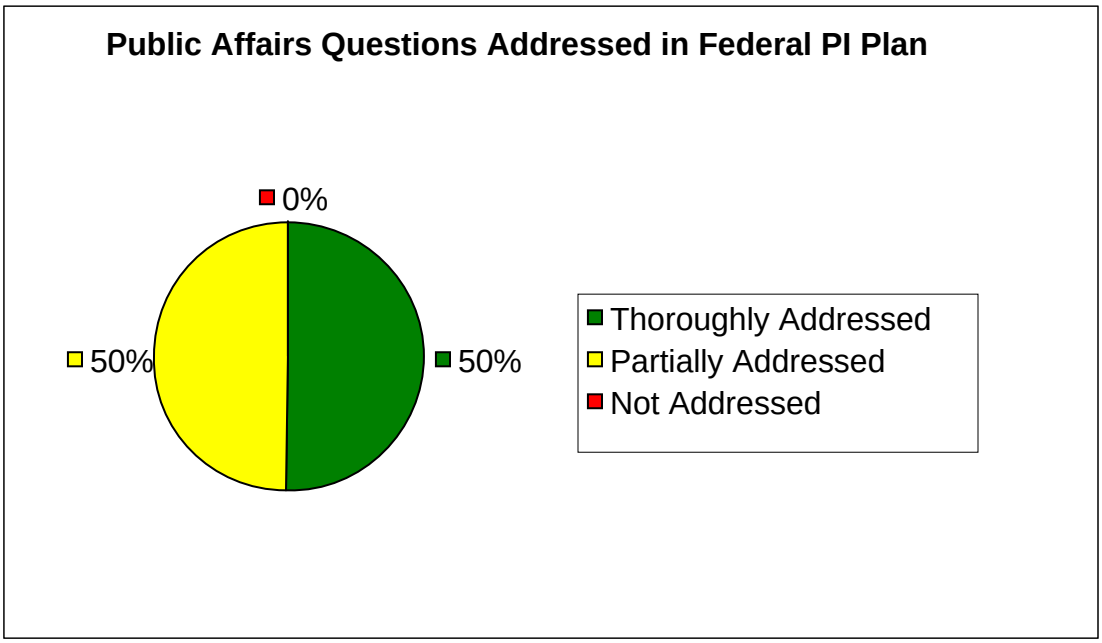

Figure 12. None of the public affairs questions were ignored in the federal plan.

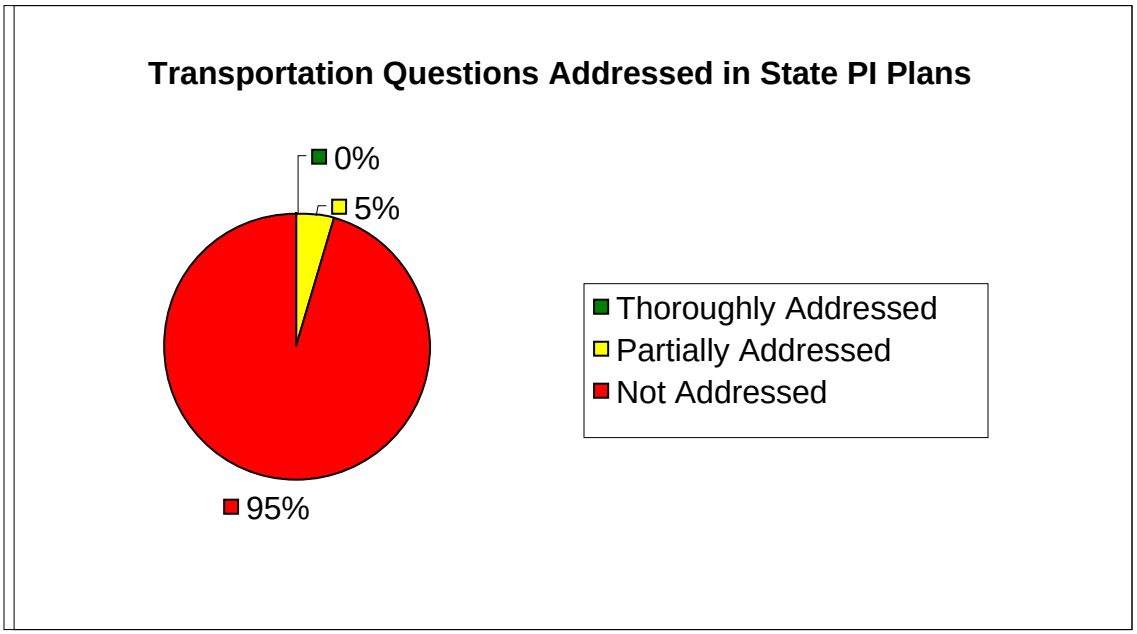

Figure 13. Transportation questions were mostly ignored in the state plan.

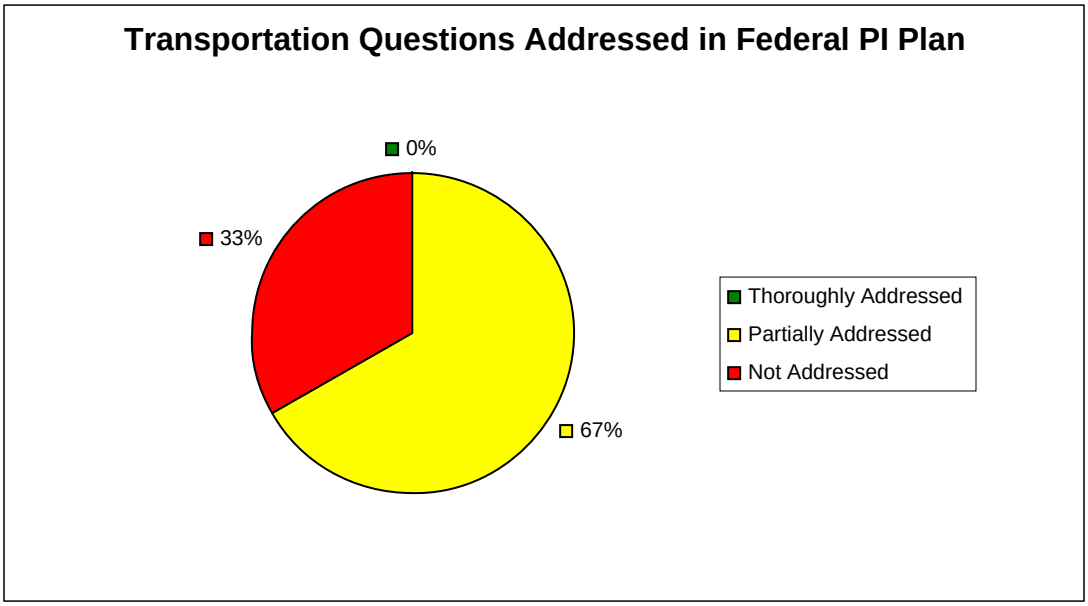

Figure 14. One-third of Transportation questions were not addressed in the federal plan.

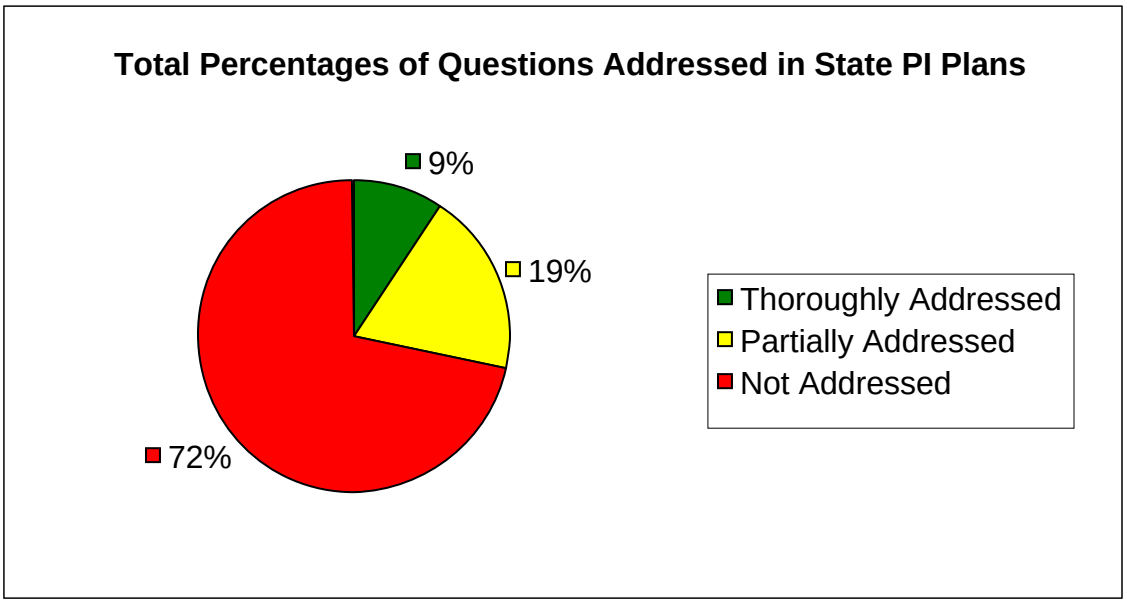

Figure 15. Overall, the state plans failed to address pandemic planning issues.

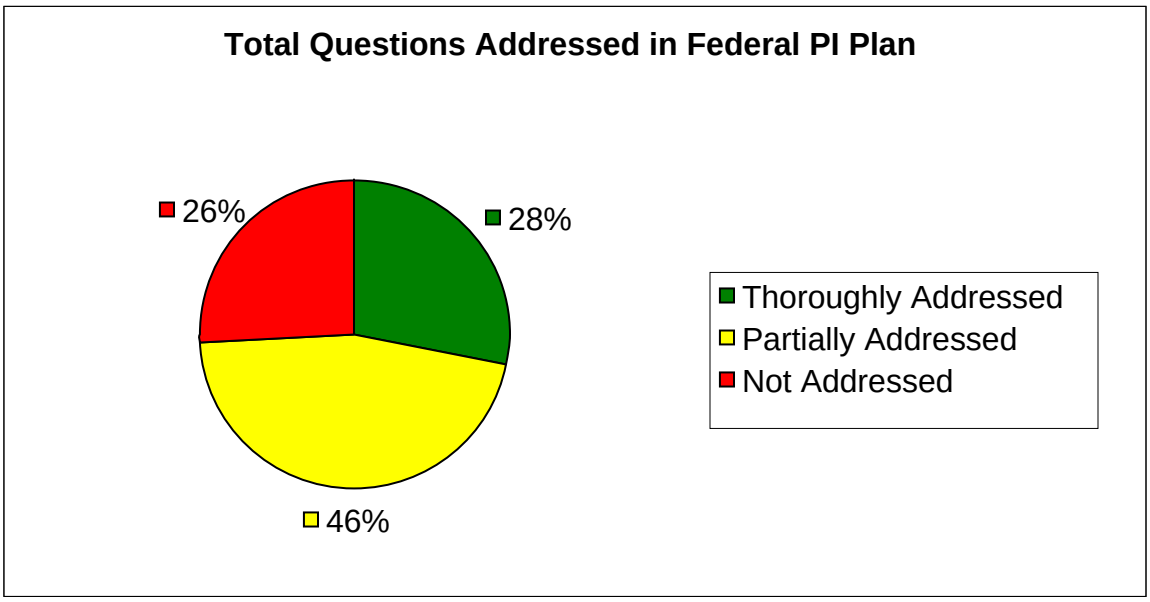

Figure 16. Overall, most pandemic planning issues were at least partially addressed in the federal plan.

As depicted graphically, the questions referencing transportation received the least attention collectively among all the states, with no single question being fully addressed and only seven states partially addressing the questions. As critical as movement of goods and people will be during a pandemic event, both within a state's boundaries as well as transitioning into another state, it is discouraging to find this particular functional area received so little attention.

Only one other functional field of questions received a zero fully compliant rating; logistics filled that dubious honor. Only eleven states partially addressed the issues, while the vast majority of states were non-compliant. With the inquiry focused on facilities for emergency staging, warehousing, and distribution of medications and temporary housing for treatment centers and quarantine, the perplexing issue was the total failure of all fifty states to address policies and procedures for sanitation of quarantined areas.

Third in line to the bottom rung for collective inattention was the mortuary affairs functional area. This is particularly discouraging as the magnitude of deaths resulting from an influenza pandemic will wreak havoc within every jurisdiction where the disease is prevalent. Only two states fully addressed the specific questions, and the majority of states were clearly non-compliant, with one state failing to address a single aspect of the eleven questions comprising the mortuary affairs battery of questions.

The functional area of command and control also received marginal attention as indicted by this analysis, with four of ten questions receiving zero fully compliant findings. The core questions with the zero compliance ratings dealt with coordination and specific roles for state and federal agencies, processes for requesting federal assistance, and integration of the private sector to maintain critical infrastructure supplies and functions.

Communications issues were somewhat balanced between full compliance and partial compliance, yet the results show a majority of states registered non-compliance on such issues as expansion of trunks and nets, coordination among all jurisdictions of

responders, and actual contingency communications vehicles, systems, and interoperability within the local first responder community.

In the public affairs, intelligence, and information-sharing category, the results indicate most states understand the necessities in reaching out to the impacted communities to ensure an honest, consistent message is broadcast in respect to recommended courses of actions, spread of the disease, and actions underway by local, state and federal responders in mitigating the impacts of the pandemic. A notable shortfall within this category was the lack of planning in listing the television and radio stations in the area, and points of contact for these venues, which will be critical in getting any messages to the public at large during the advancement and aftermath of the pandemic event. Only one state fully complied with this aspect, and forty-nine states received a non-compliant finding.

The sole area where it appears the majority of states focused their pandemic planning efforts was in the medical functional area. While far from sterling results were found, this area showed the state plans acknowledged the enormity of the pandemic threat by treating this area with apparently more deliberate contingency planning. With sixteen total questions comprising the medical battery, the attention to detail among many of the states was evident. This single area of focus, while leaving substantial margin for improvement, captures the essence of what many planners perceive as the greatest obstacle: developing comprehensive medical response plans to effectively minimize the catastrophic loss of life, mitigate the impact to local and national economies, and minimize the sustained suffering of the public through the multi-wave attack of the next pandemic.

The overall analysis of the state plans shows considerable room for improvement in multiple functional areas. When reviewing the analysis of the combined state plans, the weakest areas are mortuary affairs, transportation, logistics and public affairs. Only two questions in the entire matrix had fifty *Not Addressed* ratings:

- Does the plan address a preventative medicine plan for Mortuary Affairs staff and support personnel (immunizations, antidotes, and prophylaxis)?

- Does the plan address policies and procedures for sanitation of quarantined/isolated areas?

As state planners were provided the initial federal pandemic influenza plan as the basis for development of their own internal plans, how is it the state plans appear to have missed the mark? Is there a problem in planning methodology, were the wrong personnel on the planning committees, or was the document that serves as the template for the state plans inadequate?

B. FEDERAL PLAN ANALYSIS

The United States Department of Health and Human Services (HHS) is the federal department selected to formulate a national plan for preparing and responding to a pandemic influenza event within the United States. HHS published its comprehensive document in November 2005 on their government web site for pandemic flu. HHS notes that the plan is "a blueprint for pandemic influenza preparation and response. It provides guidance to national, state, and local policy makers and health departments."[116]

For the purposes of this thesis, the first two parts of the plan — outlining federal plans and preparation for public health and medical support, and providing detailed guidance to state and local health departments — are analyzed for adequacy of preparedness and planning guidance. The analysis of the *HHS Pandemic Influenza Plan (HHS Plan)* on its own merit was undertaken to determine if the plan provided the salient guidance to meet the needs for which it was published, and to determine specific shortfalls, if any, that would impact the communities for which the plan was produced. The most specific details HHS provides for planning purposes are found in both the ten appendices in Part 1, HHS Strategic Plan, and the eleven supplements, including various checklists, contained in Part 2, Public Health Guidance for State and Local Partners.

It is appropriate to note that the *National Strategy for Pandemic Influenza* was released almost simultaneously with the HHS Plan, and may have influenced the

[116] "HHS Pandemic Influenza Plan," U.S. Department of Health and Human Services publication. November 2005.

development of some state plans. The Homeland Security Council's approach provided an outline of how the nation would prepare, detect, and react to a pandemic, and defined roles for federal, state, and local agencies, as well as private industry and individual citizens. The verbiage outlining specific roles and responsibilities was extremely vague, which may have had a direct consequence as states developed their pandemic influenza plans.

For the purpose of this paper, the same grading criteria was used for the federal plan as was used for the state plans, with the expectation that the overall results would reveal differences and similarities commensurate with the results from the state plans analysis. A minor obstacle arose in using the same analytical matrix applied to the state plans for the *HHS Plan* evaluation. The matrix was designed to address specific items within state plans, which are not addressed at all in the federal plan. This issue is annotated within each specific functional area to the degree it affects the overall ratings, but it does not affect the outcome of the analysis for the purpose of this paper.

The first area analyzed was Communications. While the *HHS Plan* fully addressed coordination among local, state, federal, DoD, and interagency partners, it completely failed to address the remaining two communications questions. This shortfall is directly attributable to the development of the analytical matrix as mentioned above, specifically that the capabilities would not be addressed from a federal perspective, but rather are unique issues that fall under the purview of state and local jurisdictions. Supplement 10, Public Health Communications, provides the most comprehensive guidance for interagency and multi-jurisdictional coordination.

Mortuary Affairs guidance, as provided under Supplement 3, Healthcare Planning, was partially addressed in four of the ten questions, only fully addressed in one question, and five questions were rated as not addressed. References to other federal guides and publications regarding mortuary affairs issues may have positively improved the ratings in the non-compliant questions, but the intent of analyzing the primary *HHS Plan* was to review it as a stand-alone guide, thus additional reference material was not included in the overall analysis.

Not a single question within the Medical section of the matrix failed to be either fully or partially addressed, and this area received a majority of the focus throughout the *HHS Plan*. The span of the medical questions required researching six of the eleven supplements, including Supplement 1, Pandemic Influenza Surveillance; Supplement 2, Laboratory Diagnostics; Supplement 3, Healthcare Planning; Supplement 6, Vaccine Distribution and Use; Supplement 7, Antiviral Drug Distribution and Use; and Supplement 11, Workforce Support: Psychosocial Considerations and Information Needs. Only one other area within this analysis scored as well as this section, and no area exceeded this overall evaluation, with seven questions being fully addressed.

Within the Command and Control area, two of ten questions received fully addressed ratings, while three questions were partially addressed, and four areas were not addressed due to the questions being targeted to the individual states plans. Remarkably, one question was not addressed which would significantly influence many state plans, and the failure to address measures to educate, prepare and care for citizens with disabilities and/or special needs populations is an oversight with substantial repercussions, both in depth and breadth of impacted populations. Supplement 9, Managing Travel-Related Risk of Disease Transmission, provided the basis for this section of analysis.

Transportation was also covered within Supplement 9, Managing Travel-Related Risk of Disease Transmission, with two of the three questions being partially addressed. The remaining question was, again, state-specific and involved augmentation of local transportation systems to transport essential goods and emergency services.

The single area outside Medical where considerable effort was expended to address a critical aspect of pandemic influenza planning was Public Affairs. With two of four questions being fully addressed, and the remaining two being partially addressed, it is evident the federal government places a premium on orchestrating a well-coordinated, consistent, and timely information campaign during all phases of a pandemic influenza event. The comprehensive guidance for this field was found in Supplement 10, Public Health Communications, and is applicable from tactical to strategic planning.

The final area for evaluation was Logistics, which also received solid ratings. Two of three questions were partially addressed, and the remaining question was fully addressed. Due to the nature of the specific questions, two supplements provided the requisite guidance: Supplement 4, Infection Control; and Supplement 8, Community Disease Control and Prevention.

As the analysis matrix revealed, the overall *HHS Plan* had several minor gaps in specific guidance to other planning communities, but generally provided sound general guidance. The functional areas of Communications, Logistics, and Transportation were generally solid, with room for interpretation and adjustment to fit the individual needs of the non-federal planners. The two strongest areas, Medical and Public Affairs, support the conviction and purpose in this planning effort, that is, the medical aspects require significant focus, as does the collective public information campaign. While Command and Control was adequate in this analysis, the issue regarding the need to educate, prepare, and care for citizens with disabilities and special needs populations would be value-added in future guidance, if only as a reminder to the planning community that the whole population is at risk during a pandemic. The single area most in need of additional concentrated focus is the Mortuary Affairs functional area. In planning for an imminent national disaster, state and local planners and responders should not be burdened with the need to access and interpret additional guides and publications, especially when considering these plans are meant to anticipate, as well as mitigate, the wide-scale mortality expected during a pandemic influenza event.

Although plans are meant to be anticipatory by their very nature, many challenges were cast toward HHS in taking the lead for our nation. Among those challenges was the necessity to publish guidance quickly, despite changes in public perception of the validity and enormity of the pandemic influenza threat. Additionally, the plan needed to target a broad audience and include areas of consideration such as legal, medical, logistics, transportation, and vaccination protocols, among others. Another factor challenging the development and publication of a single federal plan is the reality that most plans are living documents, subject to refinements as time, operating environment, and situation dictates. When consideration is given to the magnitude of impact upon the population,

infrastructure, medical communities, economy, emergency responders, and consumer goods and services, the *HHS Plan*, in its initial "blueprint" version, provides a solid tool in assisting others to create, modify, exercise, adjust, and solidify their individual plans.

Driven by executive-level tasking and fully comprehending the challenge, HHS produced a solid primary reference guide, neither perfect nor final, and provided the broader planning community a tool to assist in adapting a proactive approach to pandemic planning and preparedness.

C. COMBINED PLANS AND COMMON DEFICIENCIES

HHS has the primary responsibility for actions required to protect the health of all Americans and provide essential human services, and is the lead agency to provide recommendations to ensure continuity of services to federal, state, local, and tribal agencies, private sector businesses, and other communities of interest. The current planning guidance, while getting better over time, still lacks the specificity to encourage a collaborative environment. This is due in large part to the federal government's inability to mandate compliance over lower level jurisdictions.

Capturing the planning deficiencies common to both the states' pandemic influenza plans and the *HHS Pandemic Influenza Plan* (*HHS Plan*) reveals significant areas where planning efforts require more attention from executive-level planners and preparedness managers. Common deficiencies applicable to both plans in general include

- failure to adequately identify specific roles and responsibilities of government agencies at all levels
- failure to provide in-depth planning for all aspects of mortuary affairs, troublesome due to the modeling projection of close to two million fatalities in the United States alone
- failure to address strategic message outreach through local or national media outlets
- failure to emphasize the importance of sanitation and general hygiene for quarantined areas and areas controlled for mandated population isolation
- failure to develop substantial Mutual Aid Agreements among all agencies and across all jurisdictions

- failure to identify processes and procedures to restrict, discourage, or encourage the movement of personnel, goods, and vessels across state borders as deemed necessary by governing officials to mitigate pandemic impact

The importance of this list is to highlight how inconsistencies in planning, arguably in planning processes, planning team composition, and attention to details, may result in inadequate and inconsistent pandemic plans. Addressing these concerns is neither difficult nor problematic. In order to prevail over these issues, planning process owners and leaders need to determine what goals are being sought and how to mold the planning process to achieve these goals. Additionally, adequate representation of functional area experts will facilitate thorough planning across the spectrum of issues, ensuring proper focus and depth is given to each facet of the plan. It is conceivable that these aspects of an effective planning process received little or no attention during the development of both the *HHS Plan* and the majority of state plans, yet the suggested remedy is straight-forward. While these common planning deficiencies showcase problems within both echelons of government as analyzed, other crucial planning areas are also worth mentioning.

During any incident of national significance, including a pandemic influenza, the potential for disruption of critical services and real, or perceived, interruptions in government availability and administration may result in complete loss of confidence in government, with the potential to erupt into massive civil disturbances. A critical area in both the federal and states plans, which was not evaluated fully by the plans analysts for this thesis, is the continuity of operations plan (COOP), which details providing goods, services, and critical infrastructure support. Additionally, the continuity of the government (COG) plan, which formalizes processes to ensure the continuation of civil obedience and perpetuates the validity of security in maintaining law and order, was missing in the majority of all plans reviewed. Consensus among the group of evaluators conducting the analysis for this paper indicated the lack of planning for COOP or COG was a major omission, and one with particularly dire consequences should public disorder elevate from concern to panic, and ultimately to civil disturbance on a grand scale.

The analysis of the *HHS Plan*, using the single matrix for this thesis, revealed minor deficiencies in planning and preparedness guidance. It is significant to note HHS has published multiple updates to the basic plan and, in furthering their commitment and responsibility toward nationwide pandemic influenza planning, has also carefully developed guides targeted to both specific audiences and topics. Concurrently published in November 2005 with the *HHS Plan* was the Homeland Security Council's *National Strategy for Pandemic Influenza*, which revealed the federal government's strategic plan for confronting this national threat. While not intended to supplement nor augment the *HHS Plan*, it successfully laid out the groundwork for rationalizing the federal approach.

It is also worthwhile to note the majority of the states' plans were developed and published in 2006 and 2007, during which time HHS, through the CDC as well as other mechanisms, published numerous guides for local, state, and tribal agencies, and across other domains including private industry and other federal agencies. A feasible factor contributing to the deficiencies noted within the state plans is the timing of these subsequent federal guidelines. The majority of the states have yet to incorporate the recent recommendations. As planning is a resource-intensive effort, states may delay adjusting their plans pending further major changes in the federal approach, or may have dedicated a specific timeframe to making adjustments, perhaps in a scheduled periodic review.

As indicated previously, the intent of the federal government in the publication of the *HHS Plan* was to provide a broad blueprint to be utilized across all jurisdictions, especially states, in their development of pandemic influenza planning. Given the deficiencies evident in the federal plan, it is not surprising that many states reflect the same planning omissions as the *HHS Plan*. While no repercussions were suggested for failure to produce plans identical to the federal plan, there were also no rewards for producing more robust plans. Several states produced comprehensive pandemic plans in individual functional areas within their overall plan, taking the federal blueprint and expanding details significantly, according to their own needs and goals. This is significant in consideration of the potential positives results stemming from information sharing across the pandemic planning community. Whether through attention to details,

careful selection in assembling the planning committee membership, or instituting an effective and thorough planning process, the resultant state planning efforts validated that the *HHS Plan* could be used as a guiding tool and not just a mandatory, cut-and-paste template.

With continuous refinement in subsequent federal guides, the overall national planning and preparedness posture has the potential for significant improvement. Providing more fidelity in the federal planning guidance, with the intent of sharing these refinements among the state, local and tribal agencies, as well as among all interested parties, would provide a consistent blueprint for enhanced pandemic planning efforts. Would taxpayers expect anything less?

D. ONGOING RESEARCH WARRANTED

Additional and more rigorous research is clearly warranted to realize the full impact of the diverse claims regarding the adequacy of national-level planning efforts in preparation for a pandemic event impacting the United States. A systematic review of all current federal pandemic planning documents and guides, as well as all recent revisions to state pandemic plans, will reveal whether planning has stagnated or if it continues to evolve. Furthermore, an analysis of the composition of the individual pandemic planning committees within each jurisdiction may provide valuable insight into how this composition impacted specific functional areas within the overall plans. Finally, more insight may be gained by determining the review cycle for state and federal plans to ascertain whether the pandemic plans will remain dynamic products.

V. RECOMMENDATIONS AND POLICY IMPLICATIONS

Those who cannot remember the past are condemned to repeat it.

—Philosopher George Santayana

I have always found that plans are useless, but planning is indispensable.

—Dwight D. Eisenhower, Supreme Allied Commander for the D-Day Invasion of France and later 34th President of the United States

My interpretation of the analysis for the states' plans and the HHS *Pandemic Influenza Plan* supports the initial premise that the collective federal and state pandemic plans are inadequate. While there is a dire need for improvement in multiple facets, the need for a collaborative approach, reaching across all communities of interest, rises to the highest priority.

As history has shown, pandemic events occur in random fashion. Determining the scope and scale for a potential pandemic influenza event is beyond the capabilities of modern medicine and public health practitioners. Much can be estimated, based on modeling initiatives and a thorough understanding of all the factors that add to the complexity of determining the adequacy of planning, response, and recovery efforts designed to mitigate the anticipated worldwide devastation the next pandemic will deliver.

According to the U.S. Department of Health and Human Services and the Center for Disease Control and Prevention, in the worst case scenario, approximately 156,500,000 Americans could be afflicted with the Avian Influenza virus, with predictions of 90 million ill, 45 million in outpatient care, almost 10 million hospitalized, 1.5 million in intensive care, and 742,500 on ventilation. The total estimated deaths for this scenario are approximately 2 million in the United States alone. With this level of impact in a highly industrialized nation, it is easy to imagine the loss of life and massive medical response necessary in developing countries, as the worldwide impact of a

pandemic will significantly challenge the global community at large. While this particular scenario appears precise, other pandemics may involve varying degrees of severity. Factors such as ease of transmission, total affected regions and populations, and regional readiness efforts, including the immediate initiation of a vaccination strategy, bear considerable weight for minimizing the potential devastation.

An optimistic estimate forecasts that an effective vaccine may not be available for up to six months after the initial pandemic outbreak, yet many in the medical community believe eighteen months is more realistic. With so much at stake for tens of millions of people in the international community, as well as tens of millions within the United States, it is imperative that every effort is made to elevate the pandemic response from its current back-burner status and manage it as a national planning priority. Ultimately, the measures of effectiveness regarding the adequacy of pandemic planning may never be realized until the next pandemic occurs.

The basis of reaching an effective plan is to identify and articulate the desired outcome of the planning effort, in this case, a comprehensive pandemic plan, but with the recognition that planning must be viewed as a dynamic process, subject to continuous revision and refinement based on experience, shared information, advances in technology, and multiple environmental factors. Pandemic planning is particularly complex due to many of the following factors:

- the unpredictability of when a pandemic will occur and where it will strike;
- the severity of the impact, both in terms of mortality and geographical boundaries;
- the limited pharmaceutical interventions currently available and the willingness of the affected population to adhere to public health advice; and
- the dynamics of collaboration among planning communities.

Due to the scope and magnitude of the pandemic threat and these combined complexities, pandemic planning must be an iterative process to maintain relevance and effectiveness. As the principal stakeholders in pandemic planning and readiness,

communities of interest including public health, medical, and critical infrastructure will need to continue confronting, analyzing, validating, consolidating, and sharing best practices and lessons learned as more effective strategies and planning practices evolve.

Although pandemic planning is commonly viewed as an exclusively public health responsibility, consideration for potential wide-scale impacts on the economy and critical infrastructure must also be considered. Attention must be given to continuity of operations and continuity of government issues as well.

Another consideration in the planning process is strategic communications, vital for conveying plans, actions, and mitigation strategies to be shared with the public. The strategic message must instill public confidence through honest and message-consistent outreach. Is there a simple option worthy of consideration in sharing pandemic plans? An option for facilitating public outreach and education on pandemic readiness would provide pandemic planning information to the lowest denominator, the individual and family members. Notwithstanding excellent public information outreach initiatives within many states, such as Washington State's Pandemic Influenza guide,[117] a concerted effort to publish personal pandemic influenza information and preparedness guides would mitigate much of the public's frustration over the uncertainty of what to expect during a pandemic event. To keep costs to a minimum, a single-page information bulletin could be enclosed with every state and federal income tax return, providing, at a minimum, web site information and public health agency contact information.

Recognition that the planning process must engage multiple cross-domain partners, facilitating this initiative will require considerable interagency skills in team-building and process development. Multiple stakeholders and partners must unite in purpose to capitalize on the capabilities, experience, and expertise within the community of interest to improve pandemic planning. To accomplish the collective goal, the new partnership must develop relationships that will induce trust, improve collective capabilities, provide mutual advocacy, and embrace a culture of collaboration. Pandemic planning efforts among all partners must be consistent, comprehensive, and mutual. The

[117] "Preparing for Pandemic Influenza – A personal and family guide," Washington State Department of Health pamphlet. DOH Publication number 820-029. 2006: 1-5.

efforts of this collaborative enterprise must focus on enhancing information sharing, especially regarding best practices, to capitalize on their momentum.

As a precursor to an elaborate and potentially protracted process, consideration must be given to what the invigorated pandemic planning process will cost. Another perspective would recognize this effort as an investment vice an expense, especially in terms of national preparedness in advance of a potential wide-scale catastrophe. Investment in continued development of an effective national pandemic plan would pay long-term benefits in the nation's ability to confront and recover from a multitude of natural and human-caused disasters. With hundreds of millions of dollars spent on pandemic planning and preparedness over the past four years, an argument can be made that we have spent enough.

With the ultimate goal of saving lives, reducing suffering, minimizing the economic impact, and facilitating a rapid return to the pre-pandemic norm, pandemic influenza planning must be done with deliberation, professionalism, consistency, and attention to detail across many disciplines. As a nation, we have already invested deeply in pandemic influenza planning and preparedness, yet a gapping hole still exists. With proper sponsorship and a collaborative investment of time and talent, we can produce an effective national pandemic plan that would serve to provide all the strategic disaster preparedness goals already in place. Indeed, with today's technology and a collaborative spirit, a properly motivated community of interest could effectively develop a one-stop, comprehensive pandemic planning guide with national applicability. The results of this effort could also be shared among the international public health community, further benefiting pandemic planning actions among our allies and developing countries. This comprehensive plan would also provide an effective blueprint that would be applicable across a wide spectrum of natural, accidental, and terrorist-induced disasters.

When considering potential terrorists threats such as weaponized smallpox, anthrax, or a hemorrhagic agent, the energy and time expended in developing a comprehensive national pandemic plan are well spent, especially with the plan's applicability toward an all-hazards event. Focusing on the known deficiencies identified during the analysis of all pandemic plans, the comprehensive plan would target these

inadequacies to provide not only a superb pandemic plan, but also the basis for a robust public health all hazards disaster response plan. Addressing the mortuary affairs deficiencies alone would be an enormous first step, as most jurisdictions consider ten to thirty casualties a significant event. Facing the potential tens of hundreds to tens of thousands of deaths within individual states during a national catastrophic event is not only unprecedented, but sure to overwhelm local response and recovery capabilities. There are many more facets of a comprehensive national pandemic plan that would benefit the public health response domain, but the aforementioned mortuary affairs functional issues highlight the need for further investigation throughout all functional areas. Another application of this comprehensive plan would be its application as the malleable blueprint for a generic, all-domain response-planning template. While substantive collaboration would be required to achieve this initiative, the value added to our national preparedness posture is immeasurable.

The further development and nurturing of a comprehensive pandemic plan requires strong executive agency sponsorship. Why not start at the top of the federal government? The new White House leadership team must quickly discern which critical issues to tackle and prioritize these challenges according to the level of threat to the nation. Continuing with the Democratic campaign promise of "change," the timing is right for changing our approach to pandemic planning. The change must go beyond merely addressing the known deficiencies; change must highlight the need for a collaborative, multi-disciplinary effort that bridges all echelons of government and reaches across all communities of interest. It is fundamentally important to initiate a national, and not a federal, approach to resolving this issue to garner stakeholder buy-in across all echelons of participation, and action must be taken beyond socializing the current inadequacies in planning. Creating a comprehensive national pandemic plan, with potential international applicability, would increase our ability to respond to multiple challenges and threats involving large populations and vast geographical impacts. Under the continued aegis of the Department of Health and Human Services, the renewed efforts for pandemic influenza planning must go beyond status quo rhetoric and become a primary goal of the current administration. The collective message to the public resulting

from this effort must be honest, reassuring, positive, and proactive in order to reinforce and sustain public trust in the nation's capabilities and the government's determination to prevail over the perpetual pandemic threat. By garnering a partnership with communities of interest, instead of the usual approach of publishing federal edicts, HHS will provide the leadership that rightly owns not only the problem, but also the solution for effective strategic pandemic planning. The new Secretary of HHS, Kathleen Sebelious, is in the enviable position of taking a fresh look at the totality of federal pandemic guidance and positively sculpting the national pandemic plan anew. There are few places where the efforts of so few planners could benefit so large a population, especially given the severe repercussions of failing to act at all.

In closing, any planning process of this magnitude is complex and dynamic, but these facts should not deter a determined community from initiating a concerted, collaborative effort to surmount this challenge, especially given the dire consequences of ignoring the need. As the American public has become more accustomed to relying on federal and state resources to recover from all disasters, the federal government must renew its focus on planning for the uncertainties surrounding a monumental mass casualty catastrophe to meet public expectation. A comprehensive national pandemic plan would go far in meeting that expectation.

The American people depend on the planning efforts of organized, highly functional government at all levels, and must have confidence and trust in the mechanisms enacted to protect, defend, and recover from a pandemic catastrophe; they are owed nothing less.

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