

**DEPARTMENT OF HOMELAND SECURITY**

**Office of Inspector General**

**Better Management Needed for the  
National Bio-Surveillance Integration  
System Program**



**OIG-07-61**

**July 2007**



Homeland  
Security

July 26, 2007

Preface

The Department of Homeland Security, Office of Inspector General was established by the Homeland Security Act of 2002 (*Public Law 107-296*) by amendment to the Inspector General Act of 1978. This is one of a series of audit, inspection, and special reports prepared as part of our oversight responsibilities to promote economy, efficiency, and effectiveness within the department.

This report addresses how well the National Bio-Surveillance Integration System is being developed to provide comprehensive and integrated bio-surveillance situational awareness. It is based on interviews with employees and officials of relevant agencies and institutions, direct observations, and a review of applicable documents.

The recommendations herein have been developed to the best knowledge available to our office, and have been discussed in draft with those responsible for implementation. It is our hope that this report will result in more effective, efficient, and economical operations. We express our appreciation to all of those who contributed to the preparation of this report.

A handwritten signature in cursive script that reads "Richard L. Skinner".

Richard L. Skinner  
Inspector General

# Table of Contents/Abbreviations

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Executive Summary .....	1
Background.....	2
Results of Audit .....	6
Program Leadership and Support.....	6
NBIS Program Execution .....	14
Recommendations.....	24
Management Comments and OIG Analysis .....	24

## Appendices

Appendix A: Purpose, Scope, and Methodology.....	27
Appendix B: Management Responses to the Draft Report.....	29
Appendix C: Major Contributors to this Report .....	33
Appendix D: Report Distribution.....	34

## Abbreviations

BCOP	Biological Common Operating Picture
DHS	Department of Homeland Security
GAO	Government Accountability Office
HSPD	Homeland Security Presidential Directive
IAIP	Information Analysis and Infrastructure Protection
IT	Information Technology
NBIS	National Bio-Surveillance Integration System
OCMO	Office of the Chief Medical Officer
OHA	Office of Health Affairs

## Figures

Figure 1 – NBIS Operating Environment.....	4
Figure 2 – NBIS Program Depiction of the BCOP.....	5
Figure 3 – NBIS Ownership and Program Transitions.....	6
Figure 4 – President G.W. Bush Speaking on Pandemic Influenza.....	9
Figure 5 – NBIS Organization Chart, as of March 2007 .....	13

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*Department of Homeland Security  
Office of Inspector General*

## **Executive Summary**

The ability to recognize quickly the signs of an intentional biological attack or naturally occurring outbreak is crucial to protecting the American public. Recognizing a gap in national biological threat analysis, in 2004, the President directed the Department of Homeland Security (DHS) to consolidate federal agency bio-surveillance data in one system. In response, DHS began efforts to develop the National Bio-Surveillance Integration System (NBIS), the nation's first system capable of providing comprehensive and integrated bio-surveillance and situational awareness.

As part of our ongoing responsibility to assess the efficiency, effectiveness, and economy of departmental programs and operations, we audited the NBIS program. The objectives of our audit were to determine (1) the efficacy of DHS' plans, policies, and procedures for collaborating with other federal, state, and local stakeholders to gather and share bio-surveillance information via NBIS; and (2) whether the system will meet user needs, information security requirements, and privacy policies and procedures. The purpose, scope, and methodology of this audit are discussed in Appendix A.

NBIS, a key element of DHS' bio-protection program, is falling short of its objectives. Specifically, DHS has not provided consistent leadership and staff support to ensure successful execution of the NBIS program. For various reasons, NBIS ownership has shifted among department organizations numerous times, with corresponding fluctuations in the program approach, priority, and accomplishments. NBIS also has struggled since its inception to secure the staff needed to manage program activities effectively. As a result of the repeated transitions and staffing shortfalls, planning documents needed to guide information technology (IT) development have yet to be finalized. Program management has not effectively communicated and coordinated with stakeholders to secure the data, personnel, and information sharing agreements needed to support system development. Additionally, program management did not provide the contractor with adequate guidance, requirements input, or data sources to deliver a fully functional system. As such, the contractor may not fulfill NBIS capability and schedule requirements, which potentially could result in cost increases to the program.

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## Background

The President issued two directives in 2004, aimed at improving coordination across all federal agency bio-awareness programs. Specifically, Homeland Security Presidential Directive (HSPD) 9, *Defense of United States Agriculture and Food*, dated January 30, 2004, charges federal agencies to create a new biological threat awareness capacity. HSPD-9 directs the Secretary of Homeland Security to coordinate with cross-federal efforts to build on updated and improved surveillance systems and create a new biological threat awareness capacity that will enhance detection and characterization of an attack. Further, HSPD-10, *Biodefense for the 21st Century*, dated April 28, 2004, calls for an integrated and comprehensive attack warning system that will assist in recognizing and responding to biological attacks on humans, animals, food, water, agriculture, and environmental resources. HSPD-10 directs the Secretary of Homeland Security to integrate all federal agency efforts to create a national bio-awareness system that will detect a biological attack at the earliest possible moment and permit initiation of a robust response to prevent unnecessary loss of life, economic impact, and social disruption. In addition, in November 2005, the President issued the *National Strategy for Pandemic Influenza*, which outlines the need for an early warning system to identify possible pandemic outbreaks.

Since 2001, federal agencies collectively have spent an estimated \$32 billion on electronic surveillance systems and various other IT initiatives to address bio-defense. Bio-defense is defined as procedures involved in taking defensive measures against attacks using biological agents. Defensive measures include research on vaccines and medications, hospital preparedness, and protection of water supplies. For example, since 2003, the Centers for Disease Control and Prevention has operated its BioSense program, which collects data on human health through partnerships with the Department of Veterans Affairs, the Department of Defense, and state and local entities. DHS, in cooperation with the Environmental Protection Agency and the Centers for Disease Control and Prevention, created the BioWatch program in 2004 to detect the release of airborne biological agents. In addition, the Food and Drug Administration and the United States Department of Agriculture, in September 2000 and October 2006 respectively, initiated programs to better analyze plant, animal, and human health data available within their agencies. Although these individual programs have helped in gathering and reviewing sector-specific data, the federal government has had no single system for consolidating and examining bio-surveillance across federal, state, and local lines.

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DHS' Science and Technology Directorate began the NBIS program in 2004 as a means of integrating bio-surveillance information across government. The program essentially is composed of three parts:

- A robust information management system capable of handling large quantities of structured and unstructured data;
- A corps of specially skilled subject matter experts responsible for analyzing the data and providing situational awareness; and
- A culture of cooperation among interagency partners.

In addition to integrating disparate agency systems, NBIS was designed to bring together bio-surveillance data from the various sector-specific systems used for human, animal, and plant health surveillance; environmental monitoring of air, agriculture, water, and food; and intelligence and threat analysis. Such data will be digitally fed into the system, integrated and illustrated based on defined ontologies,<sup>1</sup> analyzed using specific analytical tools, and then disseminated via a web portal. The data flow will be bi-directional, taking the sector-specific information from the relevant agencies and fusing it to provide comprehensive situational awareness back to the agencies. By correlating “subthreshold” data across the various sectors, NBIS can help ensure earlier recognition of biologically significant information and events that otherwise might not be reported beyond the originating agency. NBIS will incorporate rules, based on participating agency restrictions, to ensure protection of the information shared. Figure 1 provides a depiction of the NBIS data flow, as initially designed.

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<sup>1</sup> Ontologies are data models that represent a set of concepts within a system domain and the relationships between those concepts.

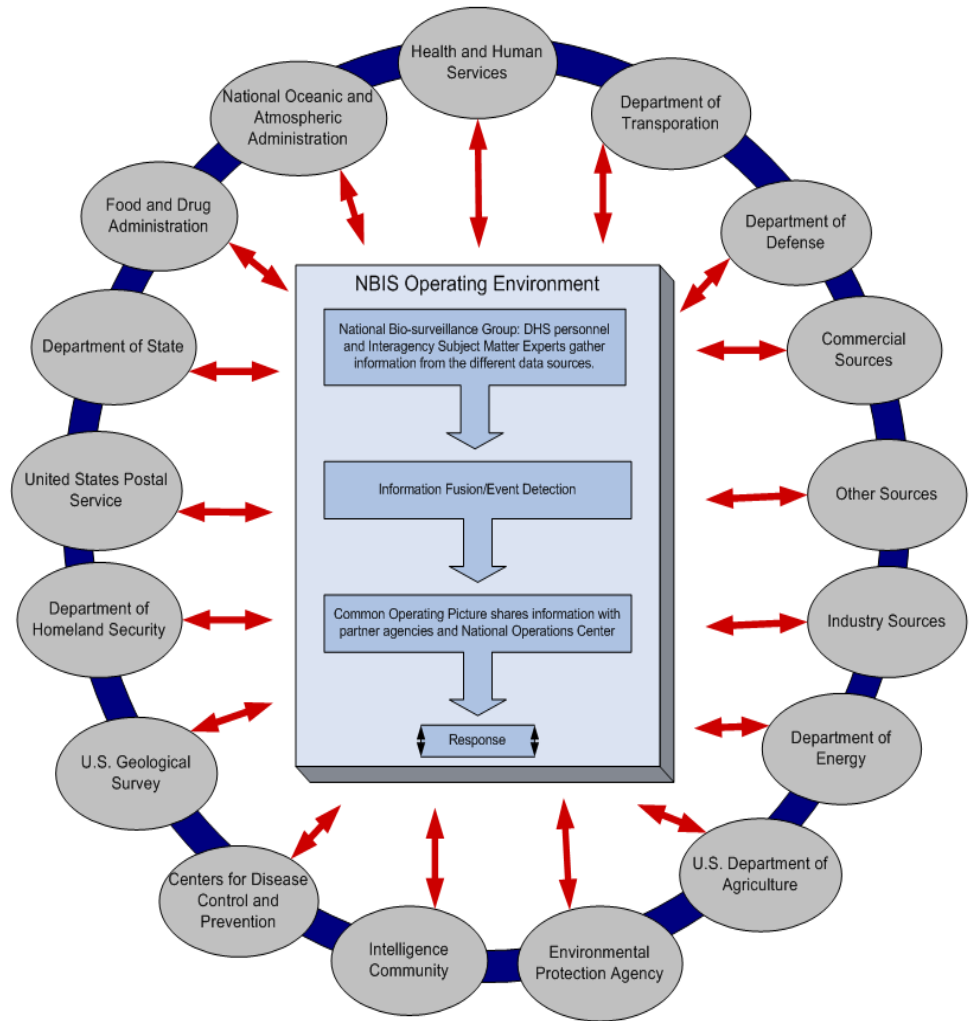


Figure 1: NBIS Operating Environment

NBIS will employ an open architecture using off-the-shelf tools and technologies, and operate at the top secret, secret, and sensitive-but-unclassified levels. The system will be flexible enough to join the disparate underlying IT systems and languages to provide a biological common operating picture (BCOP) for the world. This BCOP will assist in detecting anomalies or abnormalities caused by intentional or natural biological events. Figure 2 provides an illustration of the BCOP, highlighting how the data from the various sectors will be fused to identify biological patterns and trends, and provide actionable intelligence to facilitate national decisionmaking and timely response.

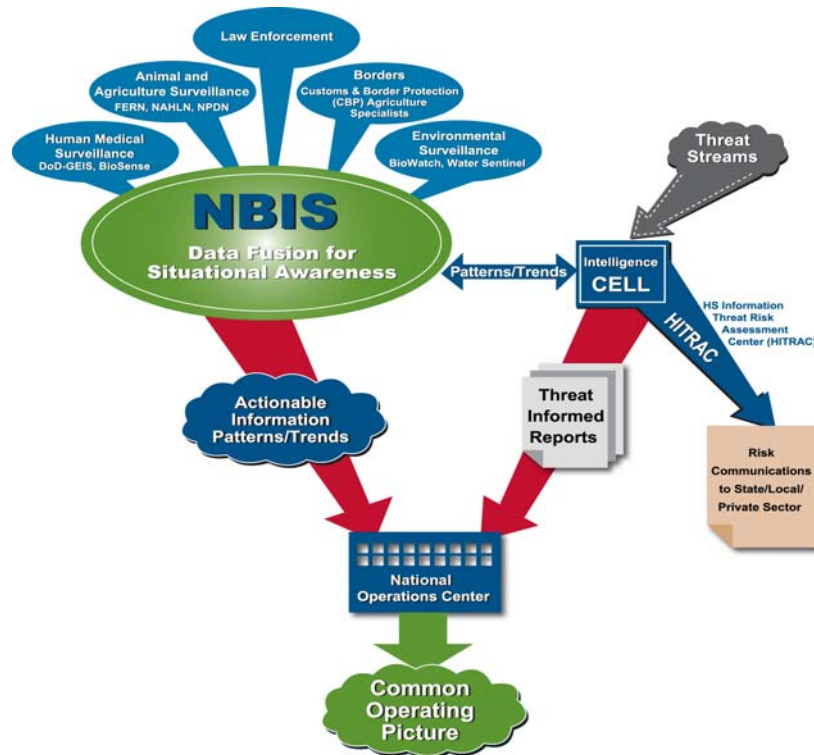


Figure 2: NBIS Program Depiction of the BCOP

The Government Accountability Office (GAO) discussed NBIS in its June 2005 report, which focused on federal activities and ongoing IT initiatives related to public health and agricultural infrastructure.<sup>2</sup> GAO reported that while the Centers for Disease Control and Prevention, Department of Health and Human Services, and DHS each have made progress in their respective public health IT initiatives, many challenges remain:

- Integrating current initiatives into a national health IT strategy and federal architecture to reduce the risk of duplicative efforts;
- Developing and adopting consistent standards to encourage interoperability;
- Coordinating initiatives with state and local agencies to improve the public health infrastructure; and
- Overcoming federal IT management weaknesses to improve progress on IT initiatives.

As such, GAO recommended that DHS assess the alignment of its two bio-surveillance initiatives, BioWatch and NBIS, with those of other federal organizations.

<sup>2</sup> *Information Technology: Federal Agencies Face Challenges in Implementing Initiatives to Improve Public Health Infrastructure*, U.S. Government Accountability Office (GAO-05-308, June 2005).



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## Results of Audit

### Program Leadership and Support

The NBIS program has not had the sustained leadership and priority needed to ensure continued progress toward achieving bio-surveillance systems integration goals. Although the program began with a clear mandate, strong support, and a strategy for accomplishing the presidential direction, for various reasons NBIS ownership has shifted among department organizations numerous times, with corresponding fluctuations in the program approach, priority, and accomplishments. In addition, NBIS has struggled since its inception to secure the staff needed to manage program activities effectively.

#### Repeated Changes in Program Ownership and Direction

Sustained leadership and direction are critical to ensure continued advancement of any IT program or improvement initiative. Senior executives have a major role to play in clearly assigning program sponsorship and holding managers accountable for leading the IT change process. With such leadership support, program managers can then move forward in establishing the management organizations, securing the resources, and guiding the directions and steps toward successfully accomplishing program objectives. Maintaining a consistent management structure and approach throughout the duration of a project can further ensure continuity toward meeting program goals.

However, the NBIS program has not had the benefit of sustained program leadership and priority. Although the program began with a clear mandate, strong support, and a strategy for accomplishing the presidential direction, for various reasons NBIS ownership since has shifted among department organizations numerous times, with corresponding fluctuations in the program approach, priority, and accomplishments. Figure 3 shows the repeated changes in NBIS sponsorship since the program's inception in 2004.

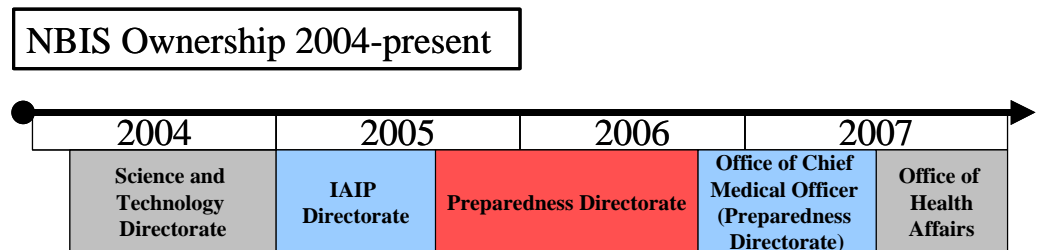


Figure 3: NBIS Ownership and Program Transitions

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### Initial Science and Technology Accomplishments

NBIS initially flourished under the leadership of the Science and Technology Directorate. In early 2004, DHS assigned the initial design work for this new effort to the directorate because, at the time, it had the technical knowledge and resources necessary to effectively undertake a public health program. Science and Technology was working daily with federal stakeholders on other bio-surveillance initiatives, such as the BioWatch program. The directorate used the contacts and experience gained through such programs to help identify an approach to developing an integrated bio-surveillance system. Specifically, the directorate held meetings with senior officials of the various federal stakeholders to determine the feasibility of a new system and draft a statement of work. During these meetings, the directorate also discussed scenarios for NBIS operations, data sharing challenges, and steps toward forging interagency cooperative agreements.

Under Science and Technology direction, the program made good first steps in initiating system design. Since funds had yet to be appropriated for the NBIS program, in July 2004, Science and Technology used \$1.686 million of its budget to contract for the initial architecture design study, known as NBIS 1.0. Science and Technology coordinated meetings with interagency representatives to obtain their assistance in evaluating vendor proposals and making the contract award decision. Subsequently, the stakeholders also assisted the contractor in formulating general system requirements and participated in a series of system design reviews to help validate these requirements. All such activities served to build a sense of community among federal agency participants.

### Program Changes Under IAIP

Due to its transfer to the former Information Analysis and Infrastructure Protection (IAIP) Directorate in January 2005, the NBIS program lost momentum generated during the Science and Technology design study phase. The program appointed a new program manager, a contractor to oversee NBIS development, but this official had minimal assistance. Because the program received limited office space, the program manager was hindered in efforts to bring on board additional staff or detailees to assist with activities such as stakeholder outreach, contract management, and information analysis. Also, although the program manager suggested awarding a sole source contract to expedite development of the IT system, NBIS 2.0, DHS determined that the contract should be competitively bid to ensure it was awarded fairly and objectively. The additional time required to competitively bid the contract contributed to delays in NBIS 2.0 development.

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### Increased Priority, But Contract Challenges Remained Under Preparedness

The NBIS program received limited attention in the initial months after being reassigned from IAIP to the new Preparedness Directorate (Preparedness). This directorate, focused on preparedness and response, was one of three organizations established after DHS reorganized IAIP in July 2005. Program management attempted to encourage program progress in August 2005 by awarding a contract, at a cost of about \$123,000, for development of a prototype system known as NBIS Lite. This prototype was a basic database designed to receive and store bio-surveillance data from open sources, such as ARGUS, an information gathering tool sponsored by Georgetown University. ARGUS integrates and catalogs biological indicators and threat warnings gathered from open source information, such as news releases, reports, or other publicly available media.

The contractor created and demonstrated the prototype system, which also received initial authority to operate on the DHS network. However, NBIS Lite had limited capability and was not robust enough for widespread use. The program needed additional funding for a follow-on development contract to achieve full functionality. Program managers awarded the follow-on contract in August 2006, but ultimately decided not to proceed with this effort after progress was concurrently made in getting the full-scale system, NBIS 2.0, in place.

The Administration's spotlight on bio-defense and pandemic issues helped ensure increased priority and leadership attention for the NBIS program. Specifically, in a November 1, 2005, speech at the National Institutes of Health, the President discussed his bio-surveillance initiatives, including NBIS, capturing the attention of senior Preparedness officials. (See Figure 4.) Program officials said that prior to the President's speech, they sensed no urgency by Preparedness leadership to promote a functioning NBIS program. However, following the President's speech, the program received additional support in terms of office space and contract personnel. For example, an NBIS management official explained that the program was assigned office space in a secure location, affording program management not only ample room to work and house additional staff, but also the facilities needed to handle potentially sensitive bio-defense information. Further, existing contract vehicles were used to bring contract staff on board to support NBIS program activities.



*To strengthen domestic surveillance, my administration is launching the National Bio-surveillance Initiative. This initiative will help us rapidly detect, quantify and respond to outbreaks of disease in humans and animals, and deliver information quickly to state, and local, and national and international public health officials. By creating systems that provide continuous situational awareness, we're more likely to be able to stop, slow, or limit the spread of the pandemic and save American lives.*

Figure 4: President G.W. Bush Speaking on Pandemic Influenza

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With the added support, the program manager was able to move the program forward in a number of ways. Specifically, a new staff member was assigned to manage NBIS planning and policy formation, provide briefings to market the program, and initiate discussions with interagency stakeholders concerning the memoranda of understanding needed to govern their participation in the NBIS program. The program manager used the secure office space to establish a 24-hour watch capability. Watch staff were responsible for conducting nonstop research and analysis on biological events and their impacts worldwide, and producing bio-surveillance reports for DHS and federal agency stakeholders. Distributed daily and weekly, these situational reports included both new developments and updates on previously reported information. Further, another newly acquired employee with a biological science background assisted watch staff efforts by determining the types of data needed to perform bio-surveillance and developing catalogues that describe the protocols for and implications of reported outbreaks of various diseases. By late 2005, the NBIS program had distributed a first draft of the interagency memorandum of understanding for comment, developed an audience for its situational reports, and determined the types of information that NBIS, once implemented, should report to meet bio-defense mission needs.

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However, the additional resources alone were not adequate to help move the program forward to contract award without further setbacks. For example, as the NBIS program prepared in early 2006 to issue a request for proposals for NBIS 2.0 development, the Office of Procurement Operations assigned a new contracting officer to the program. This official tasked the NBIS program to refine the proposal language, thereby delaying the contract by several months. Moreover, in February 2006 when the program was ready to issue a request for bid, the Office of Procurement Operations decided to use the department's new Enterprise Acquisition Gateway for Leading Edge Solutions program to award the NBIS 2.0 contract, even though DHS had not yet finalized this contract vehicle. DHS will use the Enterprise Acquisition Gateway for Leading Edge Solutions contract vehicle to purchase a range of IT services to support the department's mission of securing the homeland. This contract vehicle constitutes DHS' preferred method to obtain end-to-end solutions for IT development, deployment, operations, and maintenance. Because NBIS 2.0 was the first contract awarded using this vehicle, significant revisions were required to restructure the contract to meet the new documentation format. This rework delayed the contract by a few more months.

The Preparedness Directorate assigned a full-time employee to help overcome these challenges and prepare the NBIS program for projected transition to the Office of the Chief Medical Officer. Recognizing that program funding would no longer be available once appropriations expired by the end of the fiscal year, the program manager gave priority attention to working with the Office of Procurement Operations and closely monitoring contract management processes to get the NBIS 2.0 contract in place. On September 28, 2006, DHS finally succeeded in awarding a \$14.3 million contract for NBIS 2.0 development—albeit well over a year after the contract award time frame anticipated when the program first began.

#### Program Redirected Again Under Office of Chief Medical Officer

Concurrent with NBIS 2.0 contract award, program ownership shifted once again. This time, DHS moved NBIS to the Office of the Chief Medical Officer (OCMO), where the program focus changed to become more medical-based and risk-averse in sharing information, versus the prior emphasis on situational awareness and response under Preparedness. In line with the new focus, the NBIS program decided to seek personnel with medical training and public health knowledge and expertise to staff the 24-hour watch capability. Despite positive feedback from stakeholders who had received the publications, in October 2006, OCMO management decided to stop distributing the situational awareness reports begun in 2005 under Preparedness. Although several stakeholders appreciated the publications, OCMO officials said that they included inconsistent interagency input, provided little or no medical oversight, and contained inaccuracies, as reported by subject matter experts.

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Despite the changes in program focus, the NBIS program benefited from increased senior-level support and priority under OCMO. For example, the Chief Medical Officer assigned a new director and program manager for NBIS, and instructed the director to give the program top priority. With this heightened support, the program director and manager have been able to pursue additional personnel to assist with program development. Principally, this has included hiring contractors to support watch operations, conduct stakeholder outreach, and manage program activities.

The NBIS program received even greater visibility when OCMO was elevated within DHS in March 2007 to form part of the newly created Office of Health Affairs (OHA). This shift consolidated NBIS and other biological and chemical threat programs, such as BioWatch, under one office, reporting directly to the DHS Secretary and Deputy Secretary. The NBIS program manager said that the Secretary is optimistic about NBIS; program officials are scheduled to brief the Secretary every 90 days on program progress. As a sign of support for OHA's authority in managing bio-threat programs, the President has requested an increase in the office's funding, from \$5 million in FY 2007 to \$118 million in FY 2008.

### **Program Staffing**

Leading organizations assign adequate human resources to help ensure successful accomplishment of their IT initiatives. However, with NBIS experiencing inconsistent leadership, the program has struggled since its inception to secure the staff needed to manage program activities effectively.

For example, it was not until May 2006, when the program was under the auspices of Preparedness, that a full-time DHS program manager was assigned. Prior to this time, for about one and half years, the program was led by a detailee, who encountered roadblocks in obtaining needed information and working through unfamiliar DHS processes to carry out assigned program management responsibilities. As an external agency employee, this official also had problems getting the hiring authority to bring additional staff into DHS. This official, along with subsequent NBIS program managers, needed personnel of all types—full-time government employees, detailees, and contractors—to help support the program.

Initially, NBIS sought interagency detailees to manage program activities, but arranging to bring them on board was problematic. For example, despite assurances from senior leadership that temporary staff would be made available, the first NBIS program manager, who was also a detailee, faced barriers to acquiring other detailees to support program efforts. First, the general shortage of personnel meant a lack of staff to develop and coordinate

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the interagency agreements needed to govern the personnel exchanges. Second, the agencies that considered lending personnel to DHS to support NBIS would not agree to do so until sufficient office space was arranged to house them. DHS had not yet provided the NBIS program the office space needed.

NBIS also has looked to contractor personnel as an alternative means of staffing. As previously discussed, following the President's speech in November 2005 that drew priority attention to the program, there was an influx of contractors to assist with the NBIS program. Specifically, the program used existing contract vehicles to bring in 8-10 contract staff. These contractors helped support the NBIS watch capability, reporting, stakeholder outreach, and IT contract management. Since that time, additional contractors have been added to assist with program management activities such as planning, policy formulation, outreach, and coordination of interagency agreements on data sharing and personnel exchanges with federal stakeholders.

Although the contractor support has been beneficial, the program still needs adequate full-time federal employees to oversee contractor activities. This need for additional employees was documented in the September 2006 "OMB 300" program business case, which advised hiring additional full-time program staff. Further, the NBIS program lacked specialized personnel in several key areas. For example, the program does not have sufficient staff, such as public health officials, to analyze and process biological information. The program has not fully staffed analyst positions needed to provide expertise in reviewing and interpreting NBIS information on the range of agriculture, human, and environmental matters. The program also needs a staff representative to coordinate with the intelligence community and gain access to the information needed for bio-surveillance analysis and reporting. The statement of work says that NBIS 2.0 should integrate intelligence data into the system. However, the staff member with biological and defense subject matter expertise who initially served as liaison to coordinate such matters left the program in late 2006 and has not yet been replaced.

These staffing challenges have been complicated by high turnover rates among the staff positions that the program did acquire. For example, the program has had four program managers since its inception. For the most part, turnover among these officials was due to changes in program ownership. It nonetheless has resulted in a loss of institutional knowledge and a lack of continuity in program management direction. For example, whereas the Preparedness program manager promoted collaboration and teamwork, OCMO program managers have guided the various aspects of the program in more of a "stovepipe" manner. Disconnected from the technical management aspects of the program due to the stovepipes, one official said that NBIS staff

no longer have a good understanding of the direction in which the program is headed.

In recent months, the NBIS director responsible for governing the program within OCMO acknowledged that the program needs more staff resources and cannot continue to run primarily on a contractor supported basis. The program manager said that although OHA management approved hiring seven additional full-time employees to oversee functional program areas, the office delayed announcing these positions until after March 31, 2007, when its new organization became official. Specifically, OHA approved the billets for GS-14 and GS-15 federal employees in each of its four divisions: Program Management, Administration, and Business Support; Operations; Plans, Policy, and Outreach; and Information Technology. As of April 2007, these vacancies had not yet been announced. Until these inherently government positions are filled, the program will continue to rely on contractors to fill the void. Figure 5 displays the current organization chart for the NBIS program, showing full-time staff positions as well as vacancies.

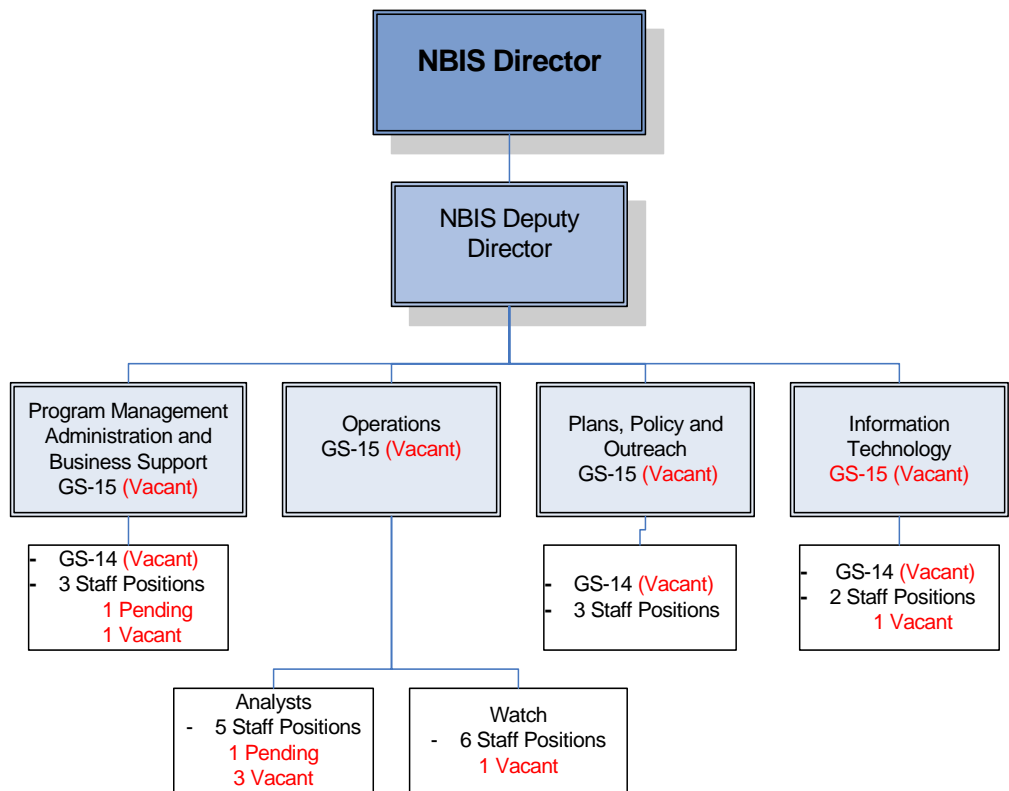


Figure 5: NBIS Organization Chart, as of March 2007



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## **NBIS Program Execution**

Because of repeated changes in program leadership and direction, and a need for staff support, DHS has not effectively executed the NBIS program. A number of the planning documents needed to guide IT development have yet to be finalized. Further, NBIS program management has not effectively communicated and coordinated with stakeholders to secure their commitment to provide the data and personnel needed to support system development. Key security and privacy issues related to bio-surveillance data sharing remain unaddressed. Additionally, program management did not provide the contractor with adequate guidance, requirements input, or data sources to deliver a fully functional system. As such, the contractor may not fulfill the system capability and schedule requirements for NBIS development, which potentially could result in cost increases to the program.

### **Program Planning**

The *Government Performance and Results Act of 1993* (Section 2, *Findings and Purposes*, Public Law 103-62) was enacted to help federal managers improve service delivery by requiring that they plan for meeting program objectives. Program planning should include a description of how goals and objectives are to be achieved, as well as details on the operational processes, human capital, information, technology, and other resources needed to meet those goals. Where program goals are insufficiently articulated, federal managers are seriously disadvantaged in their efforts to improve program efficiency and effectiveness.

Despite such guidance, planning to support the NBIS program has not been adequate. In September 2006, Preparedness officials submitted a business case to the Office of Management and Budget to justify the investment and establish the NBIS program framework. This business case outlines the NBIS vision for developing a collaboration tool to complement and interoperate with existing bio-surveillance systems of other federal government agencies. The business case and supporting documentation also discuss at a high-level the strategic goals, milestones, costs, staffing levels, and performance measures for accomplishing the program. As such, the business case provides the foundation for additional, more detailed planning by which to guide the program.

However, NBIS does not have an up-to-date plan at the tactical, more detailed level for managing day-to-day program activities in support of system development. In September 2006, concurrent with developing the business case, Preparedness officials began drafting a program plan for NBIS. The draft includes limited discussion of the end-state for NBIS; how the system will operate to collect, collate, and provide context for bio-surveillance

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information; and the tools that will be integrated into the system to expand situational awareness. However, NBIS transferred to OCMO before the program officials who began drafting the plan could complete it or get it approved.

Initially, OCMO did not focus on creating an approved program plan given competing priorities, such as securing staff resources and data sharing agreements. At the time, the office did not have the staff available to devote to planning activities; the program manager was working alone to carry out a range of program activities, such as stakeholder outreach and defining requirements, which consumed his time. However, as of March 2007, the NBIS program plan was still in draft.

Without a tactical plan to guide program directions and decisions, NBIS program managers have been managing in an ad hoc manner. For example, without clear program milestones, NBIS managers have been unable to track accomplishment of program activities or monitor progress toward meeting long-term goals. An NBIS official cautioned that the program must first define its “as is” and “to be” architectures before management can establish milestones for measuring program progress.

Recognizing the potential consequences of inadequate plans to guide program activities and decisions, NBIS officials have recently taken steps to correct this situation. For example, in April 2007, program branch chiefs hosted an off-site workshop to address program priorities. The goals of this workshop were to develop functional descriptions of staff roles and responsibilities, a mission statement for at least one program division (Operations), an organization chart, and a master schedule of program development milestones. The branch chiefs also developed a strategy for improved communication and coordination in conducting program activities. Further, the branch chiefs discussed how NBIS fits into the overarching DHS enterprise architecture goals and worked to finalize an NBIS concept of operations. Program managers have initiated similar discussions to define the final capabilities for the system, including what information NBIS should acquire, and what outputs it should offer.

### **Outreach to Ensure Stakeholder Involvement**

A major concept of HSPD-9 and -10 is that DHS should coordinate with other federal agencies to create a coordinated biological threat awareness and detection capability. Similarly, a supplement to Office of Management and Budget Circular A-11 directs federal agencies to reduce project risk by involving stakeholders in the requirements definition process to ensure that IT

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assets meet mission and user needs.<sup>3</sup> Further, a task order request pursuant to the NBIS 2.0 contract also encourages user cooperation in the iterative and incremental system development process.

### Initial Outreach To Federal Agency Stakeholders

In 2004, Science and Technology began NBIS outreach activities by hosting a series of meetings to involve federal agency stakeholders in early system design planning and review. An NBIS management official said that approximately 40 representatives from a range of stakeholder organizations attended these sessions. One stakeholder said that program officials used these meetings to discuss NBIS goals and how the system would operate to meet the needs of the user community. Subsequently, in 2005, NBIS hosted tabletop exercises and planning meetings with stakeholders to consider biological event scenarios and provide updates on NBIS program activities. Collectively, these meetings helped forge broad interagency cooperation, develop trust, and ensure buy-in for the NBIS approach.

As previously discussed, situational reports distributed to DHS components and other federal, state, and local agencies on a routine basis during 2005 and 2006 also facilitated communications and coordination with NBIS stakeholders. The 24-hour watch function, established to monitor biological events worldwide, helped produce the daily reports. The watch officers would research and compile information on the pathogens and then draft the reports. The reports were then reviewed for content and edited, and upon approval, disseminated to stakeholders in the afternoon. Along with NBIS program officials and DHS component representatives, a number of federal agencies participated or provided routine input in the process of reviewing and finalizing the reports. This process generally yielded two different types of reports: publications on outbreaks of general diseases such as E. Coli or salmonella, and supplemental information on avian influenza.

According to NBIS officials, stakeholders found the reports highly useful in that they provided broader, more in-depth coverage than other existing sources. The reports were important to advancing the NBIS approach of integrating bio-surveillance information in one central location. The reports also heightened trust in sharing information and raised expectations among stakeholders that they would continue to receive some sort of NBIS product or publication while system development was ongoing.

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<sup>3</sup> Office of Management and Budget Circular No. A-11, Part 7, *Planning Budgeting, Acquisition, and Management of Capital Assets, Executive Office of the President*, Supplement, June 2006.

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### Communication and Coordination Needed to Sustain Stakeholder Commitment

As NBIS ownership was transferred from one DHS component to the next, continuity of operations was disrupted. For example, one federal agency representative told us that each time there was a change, the new program leadership had to be reeducated on the inner workings of the stakeholder agency, creating a sense that no progress was being made in NBIS development. Further, the new program managers did not ensure effective communications to sustain working relationships with federal agency stakeholders. As successive management teams introduced new processes and approaches to accomplishing NBIS development, the mission and vision for the interagency system became less clear and agency stakeholders struggled to keep up with the transitions. Disengaged and lacking communications from program officials, agencies had no effective means of keeping abreast of program direction and status. During lengthy communication lapses in 2005, several stakeholders questioned whether NBIS was still being developed at all. Moreover, when U.S. Department of Agriculture representatives offered help in developing interagency agreements to move the program forward, NBIS managers did not follow up or communicate effectively to accept their offer. Given the lack of communications to keep them engaged, federal stakeholders' commitment and support for the NBIS program declined. As the program lost credibility, stakeholders began to doubt that anything would ever result from the initiative.

Conversely, coordination with NBIS in some areas helped stimulate internal federal agency efforts to improve systems and processes for managing bio-surveillance information. For example, the Department of Agriculture is creating an NBIS-like system that will integrate, analyze, and monitor agriculture and food safety data maintained in its various subagency systems. Proof of concept for this system was scheduled for March-April 2007. Similarly, in September 2000, the Food and Drug Administration began developing an integrated, web-based, information network to allow health officials engaged in food safety activities at multiple government agencies to compare, share, and coordinate laboratory analysis findings. These two agencies have not yet determined how these systems will potentially share information with NBIS.

### Coordination with Stakeholders on Data Sharing

NBIS program managers have not effectively coordinated with interagency stakeholders on the data resources needed to support IT system development. In 2004, NBIS officials began high-level discussions with interagency stakeholders concerning establishing partnership agreements, as well as determining the types of data needed to support system operations. Despite

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these initial communications on data sharing matters, there was little follow up with stakeholders to refine the details. As program officials focused increasingly on getting the NBIS 2.0 contract in place and managing the repeated transfers of program ownership, the data issues received less attention. According to stakeholders, NBIS program managers still had not defined the details as to what data would be needed and how it would be supplied to NBIS. One official said that NBIS managers had not conducted an information needs assessment to define specific data requirements to support system operations.

After the NBIS 2.0 contract was awarded in September 2006, the need for data once again came to the fore. By this time, the contractor had begun system development and needed interagency bio-surveillance information to populate NBIS and test its operations. Because the task order request promised that data would be available, NBIS program managers reached out once again to agencies to put data sharing agreements in place. Specifically, the approach was to draft broad memoranda of understanding on stakeholder participation, get the memos signed, and then determine the details later. Subsequent interagency agreements would be used to govern the details of the data sharing arrangements, i.e., what data would be shared and through what means, along with such matters as the exchange of personnel, information security, and IT systems interfaces. The Chief Medical Officer transmitted a memorandum of understanding signed by the DHS Deputy Secretary to stakeholders on December 26, 2006. By February 2007, five agencies<sup>4</sup> had agreed to sign the document and participate in the program.

However, subsequent efforts by NBIS program officials to work out the details of these interagency partnerships were not effective. Specifically, in January 2007, NBIS officials requested meetings with the Departments of Defense and Interior, two key stakeholder agencies, to establish data sharing arrangements as a prelude to forging interagency agreements. However, program officials held the meeting with Defense representatives without first identifying NBIS data needs to support a meaningful discussion as to what information the agency might provide. A Defense official said that NBIS program officials needed to schedule a follow up meeting for a later date, after they had more specifics about NBIS data requirements. As of late March 2007, program officials had not yet reached agreement with any federal stakeholders on when and how data would be supplied to support system operations.

In the absence of interagency agreements, program officials have not been able to secure the federal data needed to test or develop the NBIS system. To proceed with some level of system development until the federal data is

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<sup>4</sup> The five agencies included; U.S. Department of Agriculture, Department of Defense, Department of Health and Human Services, Department of the Interior, and Department of State.

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acquired, the program pursued open source information to populate the NBIS database. As a result, as of March 2007, the NBIS system contained only publicly available information, such as reports from the World Health Organization, the Organization for Animal Health, and the European Commission, which can be obtained via the internet. This approach to using open source data has helped further NBIS 2.0 development activities; however, it has not fulfilled HSPD guidance for integrating the bio-surveillance information of the various federal agencies.

In attempts to get back on track, NBIS program officials have modified their approach to acquiring bio-surveillance data once again. Specifically, in March 2007, NBIS staff met with contractor representatives to develop a two-tiered approach to securing data sources. This approach involves continued use of open source data, but concurrent pursuit of federal information, which will take more time to acquire. NBIS officials said that priority remains on ensuring access to federal data sources. Officials said that with this approach, they can increase the amount of data provided to NBIS and also advance system development efforts.

#### Information Security and Privacy Concerns

In conjunction with not getting the data sharing agreements in place, NBIS officials also did not effectively coordinate with federal stakeholders to address concerns about the privacy and security of data shared. Without NBIS program officials first defining what information NBIS needs, there is little basis for stakeholders to determine what information might be released by their agencies. For example, one stakeholder said that any release of sensitive or inaccurate information about U.S. agricultural products could have serious repercussions on exports and trade. Other stakeholders expressed similar concerns about releasing human health data. For example, a stakeholder said that, according to the *Health Information Portability and Accountability Act of 1996, Public Law 104-191*, information on human populations generally cannot be shared outside of the public health community without prior authorization.

Interagency agreements can help outline basic data handling procedures and prescribe the measures that partner agencies should take to ensure the security of shared data. NBIS program officials have developed a general interagency agreement to address these information security and privacy issues. NBIS officials plan to use the draft agreement as a mechanism for coordinating with stakeholders on what systems will feed NBIS. As of March 2007, however, this document was still in draft and had not been finalized with any stakeholder agency. Until the NBIS program coordinates these issues, officials cannot know the full range of privacy and information security implications for each agency data source.

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## **Guidance for Contractor Efforts**

Office of Management and Budget Circular A-11 directs agencies to employ good management disciplines to ensure that programs achieve intended cost, schedule, and performance outcomes. More specifically, the circular directs federal agencies to provide clear guidance and support to ensure contractor activities and products deliver intended benefits. Further, agencies are to reduce project risk by involving stakeholders in the requirements definition process to ensure that IT assets meet mission and user needs.

### **Functional System Requirements**

NBIS program management did not provide the contractor with adequate guidance to support system development activities. NBIS 2.0 was proposed as an iterative developmental system, for which methods, requirements, and data sources were to be identified in the course of system development. As such, program management established general system requirements at the outset, but tasked the contractor to develop more detailed requirements as the program evolved. Specifically, the task order request includes a broad statement of objectives regarding what the system is intended to do to enhance detection and awareness of biological events and support the exchange of bio-surveillance information among agencies.

The task order request also addresses high-level technical requirements that NBIS integrate stakeholder systems, be bi-directional to provide comprehensive situational awareness back to the agencies, and ensure protection of the information shared based on participating agency restrictions. The document does not provide detailed procedures on how the contractor is to develop the system to meet these requirements; rather, the contractor is to outline these strategies for subsequent DHS approval. As system development activities progress, NBIS program management is to incrementally provide additional guidance to support contractor efforts and ensure complete coverage of the statement of objectives.

Based on the limited guidance, the contractor proceeded to outline a statement of work, program management plan, quality assurance plan, configuration management plan, risk management plan, and implementation plan for moving forward. The contractor also created a basic framework for NBIS to demonstrate limited system capabilities. However, NBIS management did not provide the supplemental guidance as promised to support continued contractor efforts. Specifically, NBIS management did not provide a concept of operations, outlining the strategies, policies, and operational processes for implementing the system with full functionality. This document was due to the contractor at the time of contract award in September 2006. The contractor's monthly earned value reports for NBIS 2.0 development, from October 2006 through February 2007, identified the continued lack of this

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document as a risk to system development. As of April 2007, NBIS program management had not officially approved a concept of operations; the document had undergone several iterations and was still under review.

### User Requirements

Although user input is critical to the requirements definition process, NBIS management also did not ensure that subject matter expert personnel were available to support the development effort. The contractors needed user input to understand how to automate routine business processes for analyzing bio-surveillance information. For example, contractors needed to know frequently used sources for such information, types of data needed to perform analysis, and the content and structure of reports generated to share bio-surveillance information among the user community. As such, the contractor expressed an interest in October 2006 in meeting with NBIS watch officers to discuss how they might use the system. The contractors also wanted to meet with interagency analysts to determine how the system might be developed to address their individual agency requirements.

Although the contractors began NBIS 2.0 development in October 2006, they were not able to obtain any form of interagency user input until April 2007 when NBIS program managers held focus group sessions with interagency representatives to discuss their user needs. Up until that time, new NBIS program management focused on competing program management activities such as acquiring staff and securing access to the data needed for system development. Additionally, as previously discussed, NBIS program managers had not established the interagency agreements needed to secure interagency participation in defining NBIS 2.0 user needs. In April 2007, however, recognizing the contractors' need for user requirements to support achieving full operating capability by September 2008, NBIS program management finally brought users in from selected stakeholder organizations to dialogue openly on what they expected from the system.

Similarly, internal DHS end users have had only limited involvement in defining user requirements. NBIS contractors expected to meet with watch officers and subject matter experts that the program intended to bring on board. However, the subject matter experts, who would use NBIS tools to perform bio-surveillance information monitoring on a daily basis, had not yet been hired. Watch officers were the only potential users of the system already in place. Nonetheless, in January 2007, the program manager told us of a decision to have NBIS administrative and management personnel, acting as users, meet with the contractor to provide user requirements instead. Program management ultimately coordinated a meeting between the contractor and watch officers in March 2007 but, for the most part, NBIS administrative and



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management personnel will continue to be the primary source for user requirements.

### Delays in Providing Needed Data Resources

NBIS program officials were not timely in providing the contractor with the federal data resources they needed to support system development. For each of the first two phases of NBIS 2.0 development after contract award in September 2006, the contractor requested that NBIS program officials provide three data sources for use in populating and testing the system. The first time, program management responded by identifying two sources, the Global Disaster Alert and Coordination System, and EpiSpider ProMed, which provide biological or medical surveillance data via the internet. The two sources were integrated into the system in time for the initial NBIS 2.0 demonstration in January 2007. Program management was not able to execute the nondisclosure agreements necessary to use a third source, Georgetown University's ARGUS information gathering tool.

Further, NBIS program management was late in providing the contractor with three additional data sources needed for the second phase of system development, which began in November 2006. The contractor had requested that NBIS management arrange access to those sources by late January 2007; however, NBIS program managers did not officially approach the owners of two identified data sources, Wildlife Mortality Database (EPIZOO) and Electronic Surveillance System for the Early Notification of Community-Based Epidemic (ESSENCE), until that same month.<sup>5</sup> At that time, NBIS managers learned that they could neither arrange data access to meet the January 2007 deadline, nor ensure a date as to when access would be possible. Due to the delays in acquiring the sources, in March 2007 NBIS management once again substituted open source data feeds to sustain development. This was about two months later than the timeframe for which the contractor needed to support system development. Additionally, program managers still had not secured a nondisclosure agreement for contractor to access to ARGUS, the third data source, by the January 2007 time frame.

### Contractor May Not Meet Schedule and Requirements for NBIS Development

Because program management did not provide adequate system guidance, user input, and data sources to support system development activities, the contractor has made limited progress in executing the NBIS 2.0 contract.

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<sup>5</sup> EPIZOO is a U. S. Geological Survey database documenting over 25 years of information on epizootics (epidemics) in wildlife. EPIZOO tracks die-offs throughout the United States and its territories, primarily among migratory birds and endangered species. Further, ESSENCE is a prototype system developed by the Department of Defense for early detection of human infectious disease outbreaks.

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First, without clear guidance on system needs and functionalities, the contractor is spending valuable time and resources determining the system design, processes, and products needed to fulfill NBIS program objectives. For example, while the statement of objectives establishes broad guidance for NBIS to integrate, monitor, and analyze bio-surveillance information across federal agencies, the program office has not provided additional guidance or a concept of operations to guide contractor activities. As a result, the contractor has relied on its own in-house disease specialists to draft functional requirements, including how to structure and sort biological information supplied to the system—an approach that may not adequately satisfy NBIS mission requirements.

Second, without user input the contractor was unable to gather and integrate DHS and stakeholder requirements in the initial demonstration of NBIS 2.0 capabilities. Specifically, without the opportunity to interact with system users to determine their preferences regarding report format or content, the contractor could only present generic, analytical reports of bio-surveillance information as a part of its January 2007 NBIS 2.0 demonstration. Such reports provided a general illustration of what the system could produce, but may not be a true reflection of the types of NBIS products that users really need or want. It remains unclear as to whether or how user requirements will be incorporated at initial operating capability for NBIS 2.0, which is expected for June-July 2007.

Third, the lack of federal data to support NBIS development has hindered contractor efforts in several ways. In particular, the contractor has been unable to build and test system functionality, such as how interagency information will flow within NBIS 2.0 and then be sorted, integrated, and analyzed to support government-wide bio-surveillance. Further, because DHS did not provide adequate data for the first stage of NBIS 2.0 development, the contractor had to develop a synthetic data set to support testing of the analytical tools needed for continued system development.

Overall, because of the lack of data, the contractor has struggled to meet scheduled program milestones, which could have an adverse effect on contract costs. Specifically, initial operating capability for NBIS 2.0 was projected for April 2007; however, delays in receiving the data needed to ensure system functionality postponed delivery by approximately three months, to June-July 2007. This delay is significant when combined with the fact that the system projected for delivery at this time may have limited functionality due to the lack of user input and adequate data sources. The contractor submitted an unofficial proposal, outlining suggestions for modifying the NBIS 2.0 contract and adjusting the system development schedule. As of April 2007, program management had not yet made a decision on this proposal. However, pushing back these interim dates could have the ultimate effect of delaying full

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operational capability, the date when contractor is scheduled to deliver the system, which is set for March 2008. Further, an NBIS official said accepting the modifications could potentially increase the contract cost by \$2.8 million, beyond the initial award cost of \$14.3 million.

## **Recommendations**

We recommend that the Assistant Secretary and Chief Medical Officer of the Office of Health Affairs ensure that NBIS program management:

**Recommendation #1:** Assess NBIS staffing needs and apply adequate resources to effectively oversee and support program management activities.

**Recommendation #2:** Develop and implement a program plan identifying program activities, milestones, and outcomes needed to develop an integrated bio-surveillance system as required by HSPD-9 and -10.

**Recommendation #3:** Develop a concept of operations, outlining functional and user requirements for NBIS 2.0 to the IT system contractor.

**Recommendation #4:** Develop a plan aimed at improving NBIS outreach and communication with stakeholders to ensure commitment and participation in the creation of an integrated bio-surveillance system.

**Recommendation #5:** Perform an information needs assessment, outlining interagency data content requirements to support NBIS 2.0 operational capability.

## **Management Comments and OIG Analysis**

We obtained written comments on a draft of this report from the Assistant Secretary and Chief Medical Officer for the Office of Health Affairs. We have included a copy of the comments in their entirety at Appendix B.

In the comments, the Assistant Secretary concurred with all of the findings and recommendations in our report. The Assistant Secretary said that since the conclusion of the audit, significant accomplishments have been achieved that directly apply to the audit recommendations. In an attachment to these general comments, and in response to each of our report recommendations, the Assistant Secretary summarized progress that the NBIS program has made. We believe that such efforts are good steps toward addressing the various issues we raised in our report and look forward to learning more about continued progress and improvements in the future.

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Responding to Recommendation 1, the Assistant Secretary commented that NBIS management has worked to address staffing issues since August 2006, and more recently, since the formation of the Office of Health Affairs. Specifically, NBIS management has assessed staffing needs through FY 2008, put a staffing plan into place, and requested resources for personnel to support NBIS activities. In addition, the Assistant Secretary explained that the NBIS program is working to hire government employees to fill positions, which have been occupied by contract personnel; the program has advertised four federal employee positions for management slots and selected seven members of the U.S. Public Health Service to provide improved expertise and continuity for the 24/7 watch function. Further, a contractor support assessment was conducted to identify the nature and extent of future contractor requirements.

In response to Recommendation 2, regarding the need for a program plan, the Assistant Secretary indicated that the program has contracted a project manager to develop a master schedule, consisting of a work breakdown structure and a chart to track the project's timelines. These documents outline tasks, deliverables, and timelines from January 2007 through full operational capability in September 2008. Also, the Assistant Secretary noted that these planning documents are updated weekly and tracked by the Secretary.

The Assistant Secretary outlined various efforts to address Recommendation 3, regarding development of a concept of operations. The Assistant Secretary acknowledged the importance of a cross-cutting concept of operations and, as result, has enlisted a contractor to develop this document. In addition, the program addressed certain system requirements by developing standardized daily reports for interagency partners. Further, the NBIS program will solicit input on the concept of operations from four interagency customer focus groups.

The Assistant Secretary discussed NBIS' commitment to outreach and communication with stakeholders to address Recommendation 4. The Assistant Secretary stated that an engagement plan is in place, which establishes milestones and timelines for memorandums of understanding and interagency agreements; these timelines are reflected in the program plan discussed above regarding Recommendation 2. In addition to the five agencies that have signed a memorandum of understanding with the NBIS program already, a sixth federal agency has since been added. Further, the Assistant Secretary stated that all remaining federal agencies designated as future NBIS partners have been positively engaged and briefed on NBIS, and involved in an Interagency Principals Working Group. Also, the NBIS leadership recognizes that any successful interagency effort requires justification beyond what is directed by a single HSPD, and they are focusing on active two-way communication between all federal partners to foster the

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necessary understanding, willingness, and cooperation. Lastly, the Assistant Secretary stated that they are actively soliciting partner concerns, requirements, and needs to avoid communication lapses that might otherwise slow progress.

Finally, in response to Recommendation 5 on performing an information needs assessment, the Assistant Secretary stated that direct engagement using focus groups and meetings with interagency partners to discuss applicable data content and feeds for NBIS 2.0 have resulted in refined requirements, enhanced understanding of program deliverables, and the near-term addition of comprehensive data sources to establish an integrated common operating picture. In addition, the NBIS program and the system development contractor are designing a Data Acquisition Strategy as part of an overarching transition plan to move the program from Initial Operational Capability to Full Operational Capability.

## Appendix A

### Purpose, Scope, and Methodology

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As part of our ongoing responsibility to assess the efficiency, effectiveness, and economy of departmental programs and operations, we conducted an audit of the NBIS program. The objectives of our audit were to determine:

- The efficacy of DHS’ plans, policies, and procedures for collaborating with other federal, state, and local stakeholders to gather and share bio-surveillance information via NBIS; and
- Whether NBIS will meet user needs, information security requirements, and privacy policies and procedures.

To establish criteria for this review, we researched U.S. laws, regulations, and other federal guidance applicable to bio-surveillance initiatives. Documentation, such as media articles and press releases obtained through internet searches, provided background information on the NBIS program. Additionally, we reviewed prior reports and congressional testimony by the Government Accountability Office and industry organizations to learn more about their findings and recommendations related to the NBIS program and federal bio-surveillance initiatives.

We met with representatives from DHS’ Preparedness Directorate, Science and Technology Directorate, Office of Intelligence and Analysis, and Office of the Chief Medical Officer to learn about their roles, responsibilities, and activities related to the NBIS program. Senior Preparedness officials provided initial briefings on the program, and more specifically on NBIS and its functionality. The NBIS program manager discussed with us the system development process, as well as the incremental approach to implementing IT. Current and former NBIS officials, along with other staff from the contractor organization, Science Applications International Corporation, told us about NBIS development, testing, plans for ensuring systems interoperability, and end-user training. Additionally, these officials provided information on NBIS contract requirements and performance measurement.

We also interviewed NBIS stakeholder representatives from the Department of State, the United States Postal Service, the Centers for Disease Control and Prevention, the Central Intelligence Agency, the U.S. Department of Agriculture, the Department of Defense, the Department of Interior, the Environmental Protection Agency, the Federal Bureau of Investigation, the National Oceanic and Atmospheric Administration, the Department of Veterans Affairs, the National Geospatial-Intelligence Agency, and Georgetown University’s Imaging Science and Information System Center. These officials offered their perspectives on NBIS program management activities, communication with stakeholders, and strategies for sharing bio-surveillance information. These officials also discussed their involvement in

## **Appendix A**

### **Purpose, Scope, and Methodology**

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NBIS development activities and their views on the successes and possible challenges that the program may face in the future.

We limited our work to the planning, requirements definition, and information sharing activities ongoing during NBIS development at the time of our audit. We did not observe systems testing or address classified aspects of the NBIS program.

We conducted our audit from November 2006 through May 2007 in the Washington, D.C. metropolitan area. We performed our work according to generally accepted government audit standards. The principal OIG points of contact for this audit are Frank Deffer, Assistant Inspector General, Information Technology Audits, and Sondra McCauley, Director, Information Management Division. Other major contributors are listed in Appendix C.

**Appendix B**  
**Management Comments to the Draft Report**

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U.S. Department of Homeland Security  
Washington, DC 20528



**Homeland  
Security**

June 26, 2007

MEMORANDUM FOR: Richard L. Skinner, DHS Inspector General

FROM: Jeffrey W. Runge, M.D.   
Assistant Secretary for Health Affairs (Acting)  
Chief Medical Officer

SUBJECT: Response by DHS/OHA to the Draft Audit Report – *Review of the National Bio-surveillance Integration System (NBIS) Program*, dated May 21, 2007

The Office of Health Affairs, to include the Director and staff of the National Biosurveillance Integration Division, has reviewed the subject draft report. OHA concurs in the findings and recommendations of the audit and appreciates the opportunity to provide comment and clarification, explain recently implemented improvements, and describe actions being taken to correct identified deficiencies. Of note, since the conclusion of the audit to present, significant accomplishments have been achieved that directly apply to the audit recommendations.

The attached comments are provided for your consideration

If you have any questions or need additional information, please contact Mr. Eric Myers, Deputy Director, NBIS at (202) 282-9022.

Attachments:

OHA/NBIS Comments on Draft Report



## Appendix B Management Comments to the Draft Report

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### OHA/NBIS Response to Draft OIG Audit Report

*“Review of the National Bio-surveillance Integration System (NBIS) Program”, 21 May, 2007 .*

#### **Recommendation #1: Assess NBIS staffing needs and apply adequate resources to effectively oversee and support program management activities.**

**Concur with findings (with clarifications).** While we agree that movement of the program across organizations has caused personnel and management turmoil, it should be noted that these decisions were beyond the purview of the current management team. Regardless, this has since been rectified with the establishment of NBIS within the Office of Health Affairs and the August 2006 assignment of a Program Director and Deputy Director.

Additionally, NBIS staffing needs have been assessed, a staffing plan has been put into place through FY 2008 and sufficient resources have been applied to ensure adequate personnel are assigned to support program management activities. Some of these actions were noted within the Audit Report on page 15, noting that “...NBIS officials have recently taken steps to correct this situation. For example, in April 2007, program branch chiefs hosted an off-site workshop to address program priorities. The goals of this workshop were to develop functional descriptions of staff roles and responsibilities, a mission statement for at least one program division (Operations), an organization chart...” etc. Results of this workshop reinforced current manpower assessments previously done by NBIS leadership.

Page 13 of the Report noted the lack of permanently assigned Federal employees. Currently, four Federal positions have been advertised and are expected to be filled as quickly as possible. Additionally, seven U.S. Public Health Service (USPHS) individuals have been selected to provide improved expertise and continuity for our 24/7 Watch duties that are currently being performed via contractor support. A contractor support assessment was conducted to identify the nature and extent of future contractor requirements. Until sufficient Federal employees/detailees become available, contractors will provide critical augmentation to incoming permanent personnel.

#### **Recommendation #2: Develop and implement a program plan identifying program activities, milestones, and outcomes needed to develop an integrated bio-surveillance system as required by HSPD-9 and -10.**

**Concur with findings (with clarifications).** Activities to address this recommendation began prior to the conclusion of the investigation and drafting of the Report and have resulted in a contract for a project manager to formulate a master schedule, comprised of a detailed Work Breakdown Structure and Gantt chart. This schedule identifies all tasks, subtasks, timelines, key deliverables, and any dependencies across all program elements within the NBIS program from January 2007 through project ‘full operational capability’ in September 2008. To formalize this process, the schedule is updated weekly and has been uploaded for viewing on the Secretary’s tracker. This specifically

## Appendix B

### Management Comments to the Draft Report

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addresses concerns raised within the report on page 14 that "...NBIS does not have an up-to-date plan at the tactical, more detailed level for managing day-to-day program activities in support of system development." Finally, an NBIS Branch Chiefs off-site in April, 2007 further contributed to the development of this schedule.

#### **Recommendation #3: Develop a concept of operations, outlining functional and user requirements for NBIS 2.0 to the IT system contractor.**

**Concur with findings (with clarifications).** OHA/NBIS recognizes the pressing need for a cross-cutting and comprehensive Concept of Operations (CONOPS). To address this issue, we have already engaged Mitre Corporation to develop an initial CONOPS by 29 June 2007.

Additionally, certain functional and user requirements have been addressed through the development of standardized Daily Reports to interagency partners as well as the establishment of four interagency customer focus groups, through which CONOPS input will be solicited and system information presented and discussed.

#### **Recommendation #4: Develop a plan aimed at improving NBIS outreach and communication with stakeholders to ensure commitment and participation in the creation of an integrated bio-surveillance system.**

**Concur with findings (with clarifications).** We have established an Engagement Plan, including interagency Memorandum of Understanding (MOU) and Interagency Agreement (IAA) milestones and timelines, to facilitate better cross-cutting communication in the future. These timelines and milestones are reflected in the master schedule discussed in our response to Recommendation #2. In addition to the five NBIS MOU signatories identified in the Audit Report, we have since added a sixth signatory, the Department of Transportation. All remaining Federal agencies designated as future NBIS partners have been positively engaged, briefed on all aspects of the program, and are participating in an Interagency Principals Working Group to facilitate MOU signature. This stakeholder 'buy-in' is already operationalized in that we have a 24/7 Watch capability at the National Operations Center (NOC) that includes automatic notification of the Office of Health Affairs (OHA) watch desk—who, in turn, notifies operational centers and key personnel in partner agencies.

Recognizing that any successful interagency effort of this magnitude requires justification beyond that in a single HSPD, we are focusing on active, two-way communications between all Federal partners to foster the necessary understanding, willingness, and responsive cooperation. To that end, we are very actively soliciting partner concerns, requirements, and needs to avoid communication lapses that might otherwise slow our progress. We believe that this combination of internal and external communication activities—directed at multiple levels—will more than adequately address concerns regarding stakeholder communication.

## Appendix B Management Comments to the Draft Report

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### **Recommendation #5: Perform an information needs assessment, outlining interagency data content requirements to support NBIS 2.0 operational capability.**

**Concur with findings (with clarifications).** We agree with the need to perform an overarching needs assessment, as recommended in the Audit Report. Since that time, however, significant strides have been made in addressing that recommendation. Direct engagement via previously mentioned communication activities (e.g., focus groups, information sharing, and requirements solicitations) aims specifically at applicable data content and feeds for NBIS 2.0. These efforts are already paying dividends in the form of refined requirements, enhanced understanding of program deliverables, and the near-term addition of comprehensive data sources to establish an integrated ‘Common Operating Picture.’ An example of these additional data sources is the DoD-wide Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE).

. Additionally, the NBIS 2.0 team (USG and SAIC-contractor) are developing a Data Acquisition Strategy to move the program more quickly from Initial Operational Capability (IOC) to Full Operational Capability (FOC).

Other recently completed actions, facilitated by recent real-world food defense issues, resulted in the development of a common reporting format for bio-events. We have also streamlined the national level information flow process, described in the NOC notification process (see clarification to Recommendation #4), to designate DHS as the single point of interagency information consolidation prior to higher level reporting.

In conclusion, we appreciate the recommendations made by the DHS Office of Inspector General and agree that they highlight a pathway for program improvement. We believe we have already taken steps down that pathway and will utilize this Audit Report to continue those efforts.

**Appendix C**  
**Major Contributors to this Report**

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**Information Management Division**

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John Shiffer, Audit Manager  
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## Appendix D Report Distribution

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### **Department of Homeland Security**

Secretary  
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Assistant Secretary and Chief Medical Officer, Office of Health Affairs  
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Assistant Secretary for Policy  
Assistant Secretary for Public Affairs  
Assistant Secretary for Legislative and Intergovernmental Affairs  
Program Director, National Bio-Surveillance Integration System  
Program Manager, National Bio-Surveillance Integration System

### **Office of Management and Budget**

Chief, Homeland Security Branch  
DHS OIG Budget Examiner

### **Congress**

Congressional Oversight and Appropriations Committees, as appropriate

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