CENTER FOR ARMS CONTROL AND
NON-PROLIFERATION
**BIOLOGICAL AND CHEMICAL WEAPONS CONTROL PROGRAM**
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**Federal Funding for Biological Weapons Prevention and Defense,
Fiscal Years 2001 to 2008**

**Introduction**

Since the 2001 terrorist attacks on the United States, the U.S. government has spent or allocated over $40 billion among 11 federal departments and agencies to address the threat of biological weapons. For Fiscal Year 2008 (FY2008), the Bush Administration is proposing an additional $6.77 billion in bioweapons-related spending, approximately $550 million (9%) more than the amount that Congress appropriated for FY2007.[1] U.S. funding for bioweapons-related activities focuses primarily on research, development, and acquisition of medical countermeasures and protective equipment, enhancing medical surveillance and environmental detection of biological weapons agents, and improving state, local, and hospital preparedness. The Department of Defense proposes to double the amount of money that it spends on efforts to prevent the development, acquisition and use of biological weapons by states and terrorists and other non-state actors in FY2008. However, activities aimed at prevention still account for less than 2% of all federal bioweapons-related funding since FY2001. Further strengthening of prevention efforts, including a commitment to broad cooperative international action, are essential for improving our nation's security.

Annual bioweapons-related programs and funding for the following departments and agencies from FY2001 to FY2008 are summarized in Table 1: the Department of Agriculture (USDA), the Department of Commerce, the Department of Defense (DOD), the Department of Energy (DOE), the Department of Health and Human Services (DHHS), the Department of Homeland Security (DHS), the Department of State, the Department of Veterans Affairs (VA), the Environmental Protection Agency (EPA), the National Science Foundation (NSF), and the United States Postal Service (USPS). Table 1 also includes funding for Project BioShield, a ten-year program to acquire medical countermeasures to biological, chemical, radiological and nuclear agents for civilian use. As illustrated in Figure 1, annual bioweapons-related spending grew rapidly from FY2001 to FY2004. Excluding Project BioShield and one-time funding for the US Postal Service in FY2005, federal bioweapons-related funding has remained roughly steady at approximately $6.5 billion/year since FY2004.

Cumulative total funding by agency for the entire FY2001 to FY2008 period ($48.33 billion if the FY2008 request is funded in full) is illustrated in Figure 2, with DHHS funding broken down into its constituent agencies and offices (Food and Drug Administration (FDA), Health Resources and Services Administration (HRSA), the Centers for Disease Control (CDC), National Institutes of Health (NIH), and the Office of the Secretary (OS) plus the Agency for Healthcare Research and Quality (AHRQ)). Over 90% of all bioweapons-related funding goes to three lead departments: Health and Human Services, Defense, and Homeland Security (through which Project BioShield is funded).

In contrast to other preparedness efforts, biodefense research, development, testing, and evaluation (RDT&E) can be dual-use in nature: scientific knowledge, methods, and materials that can be used to protect against biological weapons can often also be used to develop biological weapons. The dual-use

[1] The estimates presented here differ from those in our FY2007 budget analysis. More refined analysis of Defense Department funding resulted in a reduction of $250 - $300 million annually, due to allocations within the Chemical and Biological Defense Program for chemical and radiological countermeasures. Project BioShield funding was previously reported as annual obligations listed in federal government budget documents. These data are no longer valid given the cancellation of a major BioShield contract, (discussed in Homeland Security analysis section). All Project BioShield funding is now reported in the year that it was appropriated.

**Table 1. Federal Funding for Bioweapons Prevention and Defense, by Agency, FY2001 – FY2008** (*in $ millions)*

| Department/Agency | FY01 (actual) | FY02 (actual) | FY03 (actual) | FY04 (actual) | FY05 (actual) | FY06 (actual) | FY07 (estimate) | FY08 (request) | FY01-FY08 |
|---|---|---|---|---|---|---|---|---|---|
| Agriculture | 7 | 42 | 204 | 111 | 298 | 247 | 187 | 341 | 1,437 |
| Commerce | 3 | 4 | 5 | 7 | 6 | 5 | 7 | 7 | 44 |
| Defense | 734 | 1,046 | 1,053 | 1,246 | 1,335 | 1,679 | 1,406 | 1,690 | 10,189 |
| Energy | 4 | 5 | 5 | 5 | 5 | 11 | 7 | 5 | 47 |
| Health and Human Services | 324 | 2,980 | 4,035 | 3,704 | 4,148 | 4,090 | 4,044 | 4,182 | 27,507 |
| Homeland Security/ Energy legacy | 40 | 85 | 119 | 1,038 | 554 | 523 | 397 | 340 | 3,096 |
| Project BioShield | | | | 885 | 2469 | | | | 3,354 |
| State | 20 | 49 | 35 | 46 | 44 | 37 | 42 | 43 | 316 |
| Veterans Affairs | | | 27 | 23 | 9 | 0 | 1 | 0 | 60 |
| Environmental Protection Agency | 20 | 155 | 95 | 114 | 111 | 103 | 103 | 137 | 838 |
| National Science Foundation | | 17 | 26 | 27 | 27 | 27 | 28 | 25 | 177 |
| US Postal Service | 175 | 587 | 0 | 0 | 503 | 0 | 0 | 0 | 1,265 |
| **Total** | **1,327** | **4,970** | **5,604** | **7,206** | **9,509** | **6,722** | **6,222** | **6,770** | **48,330** |
| **Total, excl. BioShield** | **1,327** | **4,970** | **5,604** | **6,321** | **7,040** | **6,722** | **6,222** | **6,770** | **44,976** |

**Figure 1. Total Federal Funding for Bioweapons Prevention and Defense FY2001 - FY2008**

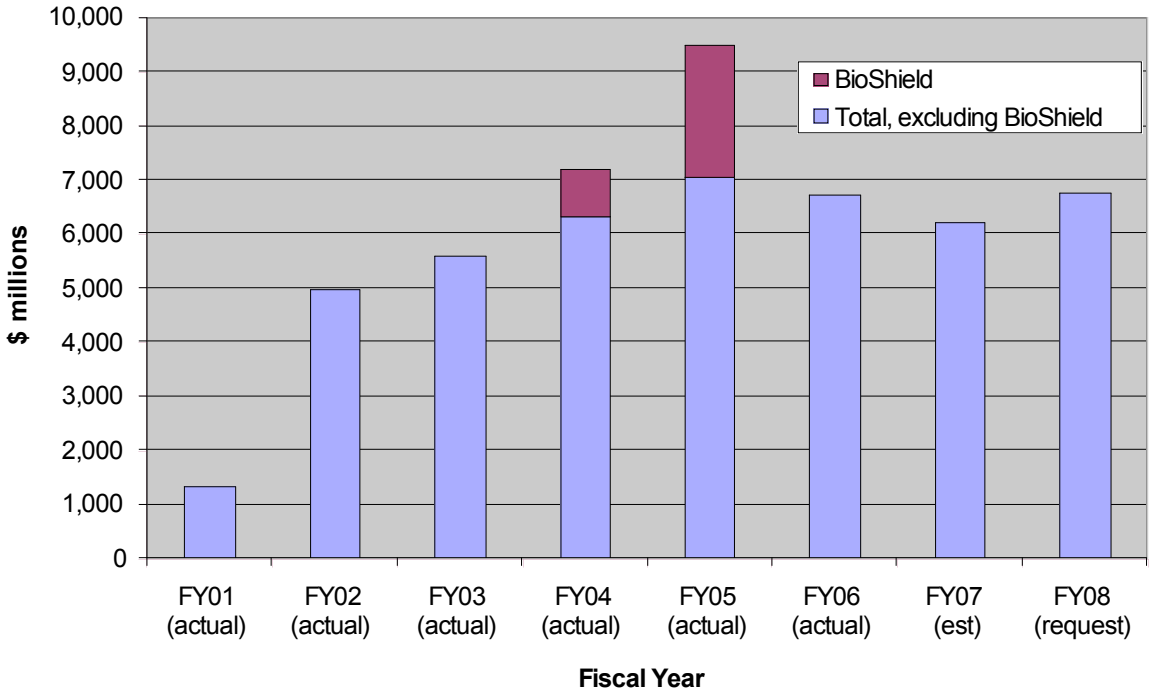
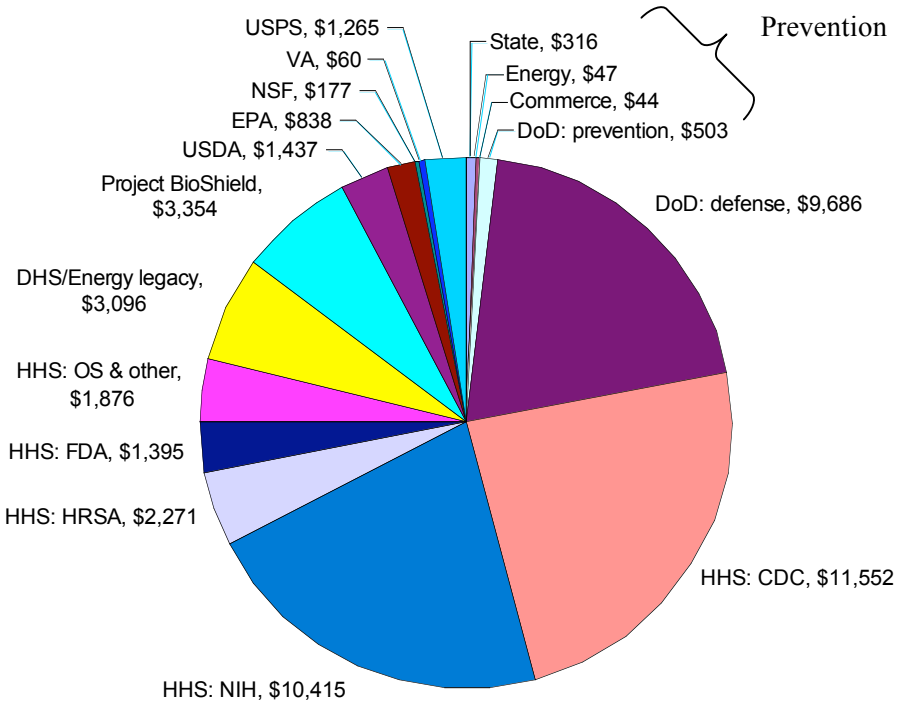


**Figure 2. Total Federal Funding for Bioweapons Prevention and Defense by Agency FY2001 – FY2008** *($ millions)*




problem has become a significant national and international policy concern. In the United States, the National Science Advisory Board for Biosecurity (NSABB) has been established under the auspices of theNIH, with *ex officio* representation from 18 Federal departments, agencies, and offices, in order to "provide advice, guidance, and leadership regarding biosecurity oversight of dual use research" to the Secretary of DHHS, the Director of the NIH, and the "heads of all federal departments and agencies that conduct or support life science research."[2]

Cumulative funding for biodefense RDT&E from FY2001 through FY2008 will reach $20 billion, over 40% of all bioweapons-related funding since FY2001 (Table 2). Of this, approximately $1.9 billion has thus far been spent, allocated, or requested for improving existing or building at least 20 new high containment research facilities around the country, including 7 new biosafety level 4 (BSL-4) facilities for conducting work on dangerous pathogens such as the ebola viruses and other hemorrhagic fever viruses. The Departments of Defense and Homeland Security are expected to request up to another $1.25 billion over the next five years for two of these BSL-4 facilities.

In contrast, cumulative funding for efforts to prevent the development, acquisition, and use of biological weapons is expected to reach approximately $874 million in FY2008 (Table 3). This is less than 2% of the total funding for biodefense RDT&E during the same time period. FY2008 sees the first substantive increase in funding for prevention efforts since FY2004. If approved by Congress, funding for prevention activities as a percentage of total bioweapons-related funding will increase to 3%, returning it to pre-2001 levels. Approximately 90% of prevention funding goes to the Departments of Defense, Energy and State for Cooperative Threat Reduction efforts, primarily in states of the former Soviet Union. Other prevention-related funding is provided to the Department of Commerce for Export Controls on materials and

[2] biosecurityboard.gov

equipment that could be used to develop biological weapons, and to the Select Agents programs at the CDC and USDA which regulate the possession, use, and transfer of potential biological weapons pathogens and toxins. The NSABB also receives roughly $1 million per year for its activities.

**Table 2. Funding for Biodefense Research, FY2001 – FY2008** (*in $ millions)*

| Department/Agency | FY01 (actual) | FY02 (actual) | FY03 (actual) | FY04 (actual) | FY05 (actual) | FY06 (actual) | FY07 (estimate) | FY08 (request) | FY01-FY08 |
|---|---|---|---|---|---|---|---|---|---|
| Facilities | | | | | | | | | |
| USDA | 7 | 30 | 143 | 0 | 121 | 58 | 0 | 16 | 375 |
| DOD | | | | | | 21 | 29 | 150 | 200 |
| DHHS | | 92 | 743 | 0 | 149 | 30 | 25 | 0 | 1039 |
| DHS | | | 30 | 108 | 68 | 36 | 23 | n/a[a] | 265 |
| *Facilities, Subtotal* | *7* | *122* | *916* | *108* | *338* | *145* | *77* | *166* | *1879* |
| Programs | | | | | | | | | |
| USDA | | 9 | 12 | 20 | 29 | 34 | 32 | 81 | 217 |
| DOD: Army | | 17 | 19 | 22 | 19 | 16 | 25 | 16 | 134 |
| DOD: DARPA | 146 | 172 | 158 | 142 | 155 | 133 | 113 | 99 | 1118 |
| DOD: CDBP | 302 | 488 | 505 | 578 | 565 | 844 | 773 | 827 | 4882 |
| *DOD, Subtotal* | *448* | *677* | *682* | *742* | *739* | *993* | *911* | *942* | *6134* |
| DHHS: FDA | 6 | 46 | 53 | 53 | 57 | 57 | 55 | 57 | 384 |
| DHHS: CDC | 29 | 20 | 20 | 18 | 17 | 14 | 14 | 0 | 132 |
| DHHS: NIH | 53 | 198 | 810 | 1821 | 1593 | 1604 | 1610 | 1628 | 9317 |
| DHHS: OS/BARDA | | | | | | | 54 | 189 | 243 |
| *DHHS, Subtotal* | *88* | *264* | *883* | *1892* | *1667* | *1675* | *1733* | *1874* | *10076* |
| DHS: S&T[b] | | | 53 | 218 | 247 | 244 | 196 | 183 | 1141 |
| DOE | 40 | 85 | | | | | | | |
| VA | n/a | n/a | 27 | 23 | 9 | 0 | 1 | 0 | 60 |
| EPA: S&T | 0 | 5 | 17 | 33 | 51 | 46 | 46 | 67 | 265 |
| NSF | 0 | 17 | 26 | 27 | 27 | 27 | 28 | 25 | 177 |
| *Programs, Subtotal* | *576* | *1057* | *1700* | *2955* | *2769* | *3025* | *2947* | *3172* | *18201* |
| ***Research, Total*** | ***583*** | ***1179*** | ***2616*** | ***3063*** | ***3107*** | ***3170*** | ***3024*** | ***3338*** | ***20080*** |

[a] n/a: no information available.

[b] Based on estimate that 60% of non-facility Biological and Chemical Division funding from FY2003 - FY2007, and 80% in FY2008, is devoted to biodefense RDT&E.

**Table 3. Funding for Bioweapons Prevention Activities, FY2001 – FY2008** *(in $ millions)*

| Department/Agency | FY01 (actual) | FY02 (actual) | FY03 (actual) | FY04 (actual) | FY05 (actual) | FY06 (actual) | FY07 (estimate) | FY08 (request) | FY01-FY08 |
|---|---|---|---|---|---|---|---|---|---|
| USDA:APHIS: Select Agents | | | | | 3 | 3 | 3 | 7 | 16 |
| DOD: CTR | 12 | 17 | 55 | 68 | 69 | 70 | 68 | 144 | 503 |
| DHHS: CDC: Select Agents[a] | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 40 |
| State: Nonproliferation Programs | 16 | 45 | 20 | 29 | 27 | 25 | 31 | 32 | 225 |
| Commerce: Export Controls | 3 | 4 | 5 | 7 | 6 | 5 | 7 | 7 | 44 |
| DOE: NIS Programs | 4 | 5 | 5 | 5 | 5 | 5 | 7 | 5 | 41 |
| **Prevention, Total** | **40** | **76** | **90** | **115** | **116** | **114** | **122** | **201** | **874** |

[a] HHS and CDC do not provide data on funding for the Select Agent Program. This is an estimate based on USDA data and CDC data from FY2002 (from GAO-03-315R "CDC Select Agent Program," 11/22/02).

**Methodology**

The information provided in this analysis was compiled primarily from the budget summaries submitted to Congress by each department or agency for each fiscal year. These publications usually offer a solid and detailed examination of programs and activities with accompanying explanations and funding numbers. They typically provide information on actual spending for the previous fiscal year, spending estimates for the current fiscal year, and budget requests for the upcoming fiscal year. Thus, unless otherwise noted, all FY2001 – FY2006 numbers are "actual" – the amount of money that the respective department or agency spent on that specific activity or program for that fiscal year. Funding totals and subtotals may not always be identical to the sum of the funding levels listed for the individual components, due to rounding errors, estimation discrepancies, or lack of information about funding for specific components.

Not all numbers, however, are readily available. Particularly for the Department of Homeland Security (DHS) and the State Department, but sometimes also for other programs within various departments and agencies, information must be gathered from a number of different sources. These include, but are not limited to, Congressional Justifications, Appropriations bills (and accompanying House, Senate, and Conference Reports), Congressional Research Service (CRS) Reports, Government Accountability Office (GAO) Reports, department/agency websites, and other non-governmental organizations. Even with so many varied sources, funding numbers do not always match with one another, and many programs remain unclear, ambiguous, confusing, and even dually-named at times. An added challenge to understanding and evaluating funding, again particularly within DHS but also sometimes in other departments, is frequent reorganization, including the transfer or sharing of programs and activities between two or more different departments and agencies.

It is important to note that some of the activities and programs included in the following charts may not be devoted entirely to biological weapons-related activities, but may also involve aspects related to chemical, radiological, or nuclear research or countermeasures. Funding for such a program is typically included in its entirety in this analysis if the program relates primarily to biodefense or if it is not possible to distinguish between or separate out the other chemical, nuclear, or radiological elements. In some cases, best estimates of bioweapons-related spending are provided based on the publicly available information. Similarly, funding for some programs which address emergency preparedness and response more generally ("all-hazards" type activities) is not included, even though some of these programs should improve our nation's ability to respond to a biological weapons attack. Additional information that will help improve this analysis is welcomed.

This analysis focuses on funding that revolves around preventing, preparing for, and mitigating the threat of biological weapons. In that sense, funding for pandemic and avian influenza is not included in the tables, although efforts to prepare for pandemic disease outbreaks will surely contribute to U.S. biodefense. A supplementary table detailing nearly $8 billion in spending on pandemic and avian influenza is included at the end of this analysis.

**Department of Agriculture (USDA)**

The Department of Agriculture's FY2008 budget request for bioweapons-related funding is $341 million, an increase of 93% over FY2007 estimated spending (Table 4). The increases come mainly from larger requests for the Food Emergency Response Network (plus $17 million), Food Defense Research (plus $14 million), Agriculture Defense Research (plus $35 million), Enhanced Surveillance within the Animal and Plant Health Inspection Service (APHIS) (plus $42 million). However, similar increases have been rejected by Congress for the last several budget cycles. $16 million is also requested for planning and design of a new biocontainment laboratory and Consolidated Poultry Research Facility in Athens, GA, which will be the major USDA facility for conducting research on high-impact exotic and emerging poultry diseases.

**Table 4. Department of Agriculture (USDA) budget breakdown** *(in $ millions)* [a]

| Department of Agriculture (USDA) | FY01 actual | FY02 actual | FY03 actual | FY04 actual | FY05 actual | FY06 actual | FY07 estimate | FY08 request |
|---|---|---|---|---|---|---|---|---|
| Food and Agriculture Defense Initiative | | | | | | | | |
| Complete Ames Iowa BSL-3 Facility (ARS) | | | 143 | 0 | 121 | 58 | | |
| Athens, GA Biocontainment Lab/Poultry Research Facility | | | | | | | | 16 |
| Food Defense: | | | | | | | | |
| Surveillance and Monitoring (FSIS) | | | 1 | 1 | 3 | 3 | 3 | 3 |
| Food Emergency Response Network (FERN) (FSIS) | | | | | 3 | 2 | 2 | 19 |
| FSIS Enhanced Inspections | | | | 2 | 2 | 2 | 2 | 2 |
| Laboratory Upgrades and Physical Security (FSIS) | | | 1 | 3 | 3 | 3 | 3 | 6 |
| Education/Training (FSIS) | | | 2 | 2 | 3 | 2 | 2 | 4 |
| Other FSIS Activities | | | 4 | 4 | 5 | 5 | 5 | 5 |
| Research (ARS) | | | 2 | 3 | 8 | 9 | 9 | 23 |
| *Subtotal, Food Defense* | | *3* | *11* | *16* | *27* | *26* | *26* | *62* |
| Agriculture Defense: | | | | | | | | |
| Research (ARS) | | 9 | 10 | 17 | 21 | 25 | 23 | 58 |
| National Plant Disease Recovery System (ARS) | | | | | 2 | 2 | 2 | 6 |
| Regional Diagnostic Network (CSREES) | | | | 8 | 9 | 10 | 10 | 14 |
| Higher Education Agrosecurity Program (CSREES) | | | | | | | | 5 |
| Pest Detection/Animal Health Monitoring: (APHIS) | | | | | | | | |
| Enhanced Surveillance | | | | 38 | 80 | 87 | 87 | 119 |
| Biosurveillance | | | 4 | 0 | 2 | 2 | 2 | 3 |
| Plant Safeguarding Activities | | | | 17 | 17 | 17 | 17 | 23 |
| Select Agents – Plants and Animals | | | | | 3 | 3 | 3 | 7 |
| National Veterinary Stockpile | | | | 1 | 3 | 3 | 3 | 8 |
| Other APHIS | | | 37 | 14 | 13 | 14 | 14 | 19 |
| *Subtotal, Agriculture Defense* | | *9* | *50* | *95* | *150* | *163* | *161* | *263* |
| *Total, Food and Agriculture Defense Initiative* | | *12* | *204* | *111* | *298* | *247* | *187* | *341* |
| Plum Island Animal Disease Center (PIADC)[b] | 7 | 30 | | | | | | |
| ***Total, USDA*** | ***7*** | ***42*** | ***204*** | ***111*** | ***298*** | ***247*** | ***187*** | ***341*** |

[a] Sources: USDA FY2003 - FY2008 Budget Summaries and Annual Performance Plans. Minimal estimates for FY2001 and FY2002 are provided, based on the limited available information.

[b] Sources: USDA FY2001 Conference Report (H. Rept. 106-948); http://www.whitehouse.gov/omb/dhs/MajorComp_Total.pdf, accessed June 20, 2006. All biodefense activities for Plum Island were transferred to DHS in FY2003.

**Department of Defense (DOD)**

The Department of Defense FY2008 budget request for bioweapons-related funding is $1.69 billion, a 20% increase over FY2007 estimated spending (Table 5). Construction of a new research facility at the U.S. Army Medical Research Institute for Infectious Diseases (USAMRIID) at Fort Detrick, MD, projected to cost approximately $1 billion,[3] accounts for the largest portion of this increase ($121 million). There is also a major increase for applied research ($54 million) as part of the Chemical and Biological Defense Program's "Transformational Medical Technologies Initiative" (TMTI). TMTI "aims to invest more than $1.5 billion from FY2006 – FY2010 "to develop broad-spectrum medical countermeasures against advanced bio-terror threats, including genetically engineered intracellular bacterial pathogens and hemorrhagic fevers."[4] It was funded at nearly $75 million in FY2006; estimated funding in FY2007 is $126 million. The Department is requesting an overall increase of nearly $250 million over FY2007 levels for TMTI in FY2008. Congress cut $125 million from the FY2007 request ($225 million) due to concerns about program execution. FY2008 also sees the first significant funding increase ($76 million, or 112%) since FY2003 for biological weapons prevention efforts within the Cooperative Threat Reduction (CTR) program. According to the FY2008 Cooperative Threat Reduction Annual Report, this enhanced level of funding is expected to be sustained through at least FY2013. The DOD BioWeapons Prevention Program is currently reducing its engagement with Russia and expanding its involvement with other nations of the former Soviet Union "due to Russia's unwillingness to cooperate on biological threat reduction."[5]

**Table 5. Department of Defense (DOD) budget breakdown** *(in $ millions)* [a,b]

| Department of Defense (DOD) | FY01 actual | FY02 actual | FY03 actual | FY04 actual | FY05 actual | FY06 actual | FY07 estimate | FY08 request |
|---|---|---|---|---|---|---|---|---|
| Research, Development, Test, and Evaluation | | | | | | | | |
| Department of the Army Medical Materiel/Medical Biological Defense Equip. | n/a | 17 | 19 | 22 | 19 | 16 | 25 | 16 |
| Defense-Wide | | | | | | | | |
| Basic Research: Chemical and Biological Defense Program (CBDP)[c] | 26 | 34 | 41 | 37 | 41 | 81 | 92 | 60 |
| Applied Research: | | | | | | | | |
| CBDP[d] | 65 | 104 | 131 | 109 | 119 | 166 | 177 | 226 |
| Defense Advanced Research Projects Agency (DARPA): Biological Warfare Defense | 146 | 172 | 158 | 142 | 155 | 133 | 113 | 99 |
| Advanced Technology Development: CBDP[e] | 46 | 70 | 88 | 134 | 143 | 195 | 206 | 198 |
| Advanced Component Development and Prototypes: CBDP[f] | 74 | 103 | 77 | 119 | 100 | 75 | 23 | 21 |
| System Development and Demonstration: CBDP[g] | 57 | 133 | 119 | 123 | 110 | 216 | 185 | 215 |
| RDT&E Management Support: CBDP | 34 | 44 | 49 | 56 | 50 | 101 | 83 | 99 |

[3] From http://www.dcmilitary.com/army/standard/12_13/features/, accessed June 20, 2006.
[4] From Transformational Medical Technologies Initiative FY2007 Congressional Report, at http://www.acq.osd.mil/cp/cbdreports/tmti.pdf
[5] Cooperative Threat Reduction Annual Report to Congress FY2008, p. 24, at http://www.dtra.mil/documents/oe/ctr/FY08%20CTR%20Annual%20Report%20to%20Congress.pdf

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Operational Systems Development: CBDP | | | | | 2 | 10 | 7 | 8 |
| Military Construction Tricare Management Activity: New USAMRIID Facility at Fort Detrick MD | | | | | | 21 | 29[h] | 150 |
| *Subtotal, RDT&E* | *448* | *677* | *682* | *742* | *739* | *1014* | *940* | *1092* |
| Procurement, Defense-Wide | | | | | | | | |
| Chemical and Biological Defense | | | | | | | | |
| Installation Force Protection | | | | | 90 | 194 | 87 | 83 |
| Individual Protection | 18 | 16 | 29 | 32 | 50 | 65 | 39 | 87 |
| Decontamination | 7 | 16 | 26 | 21 | 15 | 3 | 19 | 29 |
| Joint Biological Defense Program | 142 | 208 | 130 | 71 | 101 | 61 | 47 | 56 |
| Collective Protection | 40 | 48 | 56 | 56 | 45 | 31 | 43 | 39 |
| Contamination Avoidance | 67 | 63 | 75 | 256 | 226 | 238 | 184 | 160 |
| *Subtotal, Procurement* | *274* | *352* | *316* | *436* | *527* | *592* | *419* | *454* |
| Cooperative Threat Reduction (CTR) Program: Biological Threat Reduction[i] | | | | | | | | |
| Biological Weapons Infrastructure Elimination | | | 10 | 17 | 0 | 2 | 2 | 0 |
| Cooperative Biological Research | | | 10 | 16 | 10 | 1 | 20 | 19 |
| Threat Assessment and Disease Response[j] | | | 26 | 20 | 55 | 66 | 47 | 126 |
| Biosecurity and Biosafety[i] | | | 9 | 15 | 3 | | | |
| *Subtotal, CTR Biological Threat Reduction Program* | *12* | *17* | *55* | *68* | *69* | *70* | *68* | *144* |
| ***Total, Defense Department*** | ***734*** | ***1,046*** | ***1,053*** | ***1,246*** | ***1,335*** | ***1,679*** | ***1,406[k]*** | ***1,690*** |

[a] Sources: DoD FY2003 - FY2008 Budget Summaries unless otherwise noted.

[b] Funding for DARPA's "Materials and Biological Technology," which may include biodefense- and non-biodefense-related money, includes: $0 before FY2005; $252m for FY2005; $271m for FY2006; and $298m for FY2007 estimate; and $306m for the FY2008 budget request.

[c] Funding for program TC1 for medical countermeasures to chemical agents not included.

[d] Funding for programs TC2 and TR2 for medical countermeasures to chemical and radiological agents, and funding for chemical weapons related funding in program CB2, not included.

[e] Funding for programs TC3 and TR3 for medical countermeasures to chemical and radiological agents, for program CP3, and for chemical weapons related funding in program CB3, not included.

[f] Prior to FY2002, was named "Demonstration and Validation." Funding for programs MC4 and MR4 for medical countermeasures to chemical and radiological agents, for program CP4, and for other chemical weapons specific funding in Budget Authority 4 not included.

[g] Prior to FY2002, was named "Engineering and Manufacturing Development." Funding for programs MC5 and MR5 for medical countermeasures to chemical and radiological agents, and for other chemical weapons specific funding in Budget Authority 5 not included.

[h] In 2006, Congress authorized a total of $550m for "stage 1" of the new USAMRIID facility.

[i] Renamed for FY2008, in prior years was "Biological Weapons Proliferation Prevention (BWPP). Sources: FY2003 - FY 2008 Defense Wide Operations and Maintenance Budget Justification, Volume 1, CTR section; Cooperative Threat Reduction Annual Report to Congress, Fiscal Year 2006. The CTR Annual Report for FY2008 also provides projected spending for BWPP for the FY2009-FY2013 period: BWIE, $0; CBR, $72.2m; and BS&S and TADR, $749.2m.

[j] Combined in FY2007. $55m was requested in FY2006 for the TADR component, but the actual amount spent on each component is not reported in the FY2008 Budget Summary.

[k] includes $8 Million for the Army National Guard Strategic Biodefense Initiative

**Department of Energy (DOE)**

The Department of Energy FY2008 budget request for bioweapons-related programs is approximately $5 million, a decrease of $2 million from FY2007 (Table 6). Since FY2003, DOE bioweapons-related programs have focused on export controls, redirection of former Soviet bioweapons scientists, treaty support, and confidence building activities. Bioweapons-related funding information is not specifically identified in the annual Congressional Budget Request submitted by the National Nuclear Security Administration (NNSA). For FY2001 – FY2006, the funding levels presented here are estimated by multiplying program and activity funding figures, found in the NNSA budget requests, by an estimate of the amount of total funding dedicated to biodefense-related activities, as discussed in the notes accompanying Table 11. FY2007 and FY2008 funding data are based on information provided by NNSA (personal communication).

**Table 6. Department of Energy (DOE) budget breakdown** *(in $ millions)*[a]

| Department of Energy (DOE) | FY01 actual | FY02 actual | FY03 actual | FY04 actual | FY05 actual | FY06 actual | FY07 estimate | FY08 request |
|---|---|---|---|---|---|---|---|---|
| National Nuclear Security Administration (NNSA) | | | | | | | | |
| Non-Proliferation and Verification R&D: Chemical and Biological National Security Program [b] | 40[c] | 85[d] | | | | | | |
| Non-Proliferation and International Security (NIS) | | | | | | | | |
| Export Control Programs [e] | | | 1 | 1 | 1 | 1 | 2 | 2 |
| Global Security Engagement and Cooperation (GSEC): Confidence Building Measures[f] | | | | | | | 1 | 1 |
| GSEC: Global Initiatives for Proliferation Prevention (GIPP)[g] | 4 | 5 | 4 | 4 | 4 | 4 | 3 | 2 |
| Non-Proliferation Treaties | | | | | | | 1 | 1 |
| CB Detection; National Cntr for Biodefense at George Mason University[h] | | | | | | 6 | | |
| ***Total, DOE*** | ***44*** | ***90*** | ***5*** | ***5*** | ***5*** | ***11*** | ***7*** | ***5*** |

[a] Sources: FY2003 - FY2008 DOE Congressional Budget Request, Volume I: National Nuclear Security Administration

[b] These figures may include more than biodefense-related money. Transferred to DHS in FY2003, together with portions of the Microbial Genomics/Pathogens program in the Office of Biological and Environmental Research, for which bioweapons-related funding data are not available.

[c] From FY 2002 Congressional Budget for Department of Energy, under Defense Nuclear Nonproliferation/Nonproliferation and Verification R&D

[d] From CRS Report (RL31914): Research and Development in the Department of Homeland Security (6/20/03)

[e] Starting in FY2007, DOE's NNSA's Export Control activities are divided into 3 separate programs: International Non-Proliferation and Export Control, Export Control Licensing Operations, and Export Control Multi-lateral. For FY2003 – FY2006, budget numbers for export control programs were multiplied by the fraction of export license requests for biological materials processed by the Department of Commerce each year, and then by 50% for FY2003, 60% for FY2004, 70% for FY2005, and 100% for FY2006; the latter percentages are stated in DOE budget documents as the proportion of all biological export control applications that NNSA will review. For FY2007 and FY2008, budget numbers were provided by NNSA (personal communication).

[f] Information provided by NNSA (personal communication)

[g] Previously called the Russian Transitions Initiative, comprising the Nuclear Cities Initiative (NCI, approximately 40%) and International Proliferation Prevention (IPP, approximately 60%). The Nuclear Cities Initiative was terminated in September 2006. Approximately 15% of IPP funding was bioweapons related through FY2005 (Frida Kuhlau, "From bio threat reduction to cooperation in biological proliferation prevention: Annex to background paper 4." Approximately 12% of IPP is bioweapons-related in FY2007 and FY2008 (NNSA, personal communication).

[h] Sources: FY2006 Appropriations, Conference Report 109-275: $5m for CB detection R&D, $1m for National Center.

**Department of Health and Human Services (DHHS)**

The Department of Health and Human Services FY2008 budget request for bioweapons-related funding is $4.18 billion, approximately 3% higher than the estimated spending for FY2006 (Table 7). Research at NIH continues to account for the largest portion of DHHS funding: $1.6 billion in the FY2007 request. An additional $189 million is requested for advanced research and development activities funded by the Biomedical Advanced Research and Development Authority (BARDA), which was established in April 2007 pursuant to the Pandemic and All-Hazards Preparedness Act (P.L. 109-417). In addition to promoting medical countermeasure advanced research and development, BARDA will manage the procurement of medical countermeasures for chemical, biological, radiological and nuclear agents under Project BioShield. It will also manage the advanced development and procurement of medical countermeasures for pandemic influenza and other emerging infectious diseases that fall outside of Project BioShield.[6] The enacting legislation authorized a total of $1.07 billion for BARDA activities in FY2006 – FY2008. CDC requests an 11% increase ($55 million) for the Strategic National Stockpile (SNS) in FY2008, but proposes to cut funding for state and local capacity building for public health preparedness by over 11% ($86 million). Hospital preparedness and bioterrorism training were moved from the Health Resources Services Administration to the Office of the Assistant Secretary for Preparedness and Response in FY2007. Funding for these programs was eliminated (training) or cut by approximately 13% ($60 million, hospital preparedness) in the FY2008 request. Most other programs at DHHS remain at levels similar to those in FY2007.

**Table 7. Department of Health and Human Services (DHHS) budget breakdown** *(in $ millions)* [a]

| **Department of Health and Human Services (DHHS)** | **FY01 actual** | **FY02 actual** | **FY03 actual** | **FY04 actual** | **FY05 actual** | **FY06 actual** | **FY07 estimate** | **FY08 request** |
|---|---|---|---|---|---|---|---|---|
| Food and Drug Administration (FDA) | | | | | | | | |
| Food Safety and Defense[b] | 1 | 98 | 97 | 116 | 150 | 158 | 156 | 178 |
| Medical Countermeasures – Vaccines, Drugs, Diagnostics | 6 | 46 | 53 | 53 | 57 | 57 | 55 | 57 |
| Physical Security | 2 | 13 | 7 | 7 | 7 | 7 | 7 | 7 |
| *Subtotal, FDA* | *9* | *157* | *157* | *176* | *214* | *222* | *218* | *242* |
| Health Resources and Services Administration (HRSA)[c] | | | | | | | | |
| Bioterrorism Hospital Preparedness | | 135 | 514 | 515 | 487 | 474 | | |
| Bioterrorism Training and Curriculum Development | | | 28 | 28 | 28 | 21 | | |
| Smallpox Compensation | | | 42 | | | | | |
| *Subtotal, HRSA* | *0* | *135* | *584* | *543* | *515* | *494* | *0* | *0* |
| Centers for Disease Control and Prevention (CDC)[d] | | | | | | | | |
| CDC Physical Security and Facilities | 3 | 46 | 20 | | | | | |
| Upgrading State and Local Capacity | 67 | 940 | 939 | 918 | 919 | 823 | 784 | 698 |
| Biosurveillance Initiative | | | | 22 | 79 | 133[e] | 79 | 88 |
| Upgrading CDC Capacity | 22 | 143 | 159 | 151 | 141 | 137 | 137 | 137 |
| Anthrax Research | 18 | 18 | 18 | 18 | 17 | 14 | 14 | 0 |
| Strategic National Stockpile[f] | 51 | 645 | 398 | 0 | 467 | 524 | 525 | 581 |
| Supplemental appropriations (smallpox) | | 512 | 100 | | | | | |

[6] http://www.hhs.gov/news/press/2007pres/04/pr20070426b.html. For more information on BARDA, see http://www.hhs.gov/aspr/ophemc/index.html.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Independent Studies | 11 | 2 | 2 | | | | | |
| Other (Planning; Deterrence) | 10 | 19 | | | | | | |
| *Subtotal, Centers for Disease Control and Prevention (CDC)* | *182* | *2,324* | *1,634* | *1,110* | *1,623* | *1,631* | *1,541* | *1504* |
| National Institutes of Health (NIH) | | | | | | | | |
| Research | 53 | 198 | 687 | 1,629 | 1,548 | 1,604 | 1,610 | 1,628 |
| Advanced development fund (non-add)[g] | | | | | | 54 | | |
| Extramural laboratory construction | | | 373 | 0 | 149 | 30 | 25 | 0 |
| Intramural physical security and facilities | | 92 | 370 | | | | | |
| rPA Anthrax Vaccine Intermediate Scaleup[h] | | | 123 | 117 | | | | |
| MVA Smallpox Vaccine Intermediate Scaleup[h] | | | | 75 | 45 | | | |
| NSABB[i] | | | | 1 | 1 | 1 | 1 | 1 |
| *Subtotal, National Institutes of Health (NIH)* | *53* | *290* | *1,553* | *1,822* | *1,743* | *1,689* | *1,636* | *1,629* |
| Office of the Secretary (OS) | | | | | | | | |
| Office of Public Health and Emergency Preparedness (OPHEP)[j] | 63 | 49 | 42 | 41 | 41 | 41 | | |
| Office of the Assistant Secretary for Preparedness and Response (ASPR)[k] | | | | | | | | |
| Operations | | | | | | | 9 | 13 |
| Preparedness and Emergency Operations | | | | | | | 15 | 48 |
| National Disaster Medical System[l] | | | | | | | 47 | 53 |
| Hospital Preparedness Grants[c] | | | | | | | 474 | 414 |
| Training and Curriculaum Development[c] | | | | | | | 21 | 0 |
| Advanced Research and Development | | | | | | | 54 | 189 |
| BioShield Management | | | | | | | 0 | 22 |
| International Early Warning Surveillance | | | | | | | 9 | 9 |
| Media/Public Information Campaign | | | | | | | 3 | 2 |
| *Subtotal, ASPR* | | | | | | | *632* | *751* |
| Metropolitan Medical Response System (MMRS)[m] | (17) [m] | 22 | 50 | | | | | |
| Healthcare Provider Credentialing | | | | | | | | 3 |
| Medical Reserve Corps | | 3 | 10 | 10 | 10 | 10 | 10 | 15 |
| Revitalization/Transformation of Commissioned Corps | | | | 3 | 3 | 4 | 4 | 38 |
| *Subtotal, Office of the Secretary* | *80* | *74* | *102* | *54* | *54* | *54* | *646* | *807* |
| Agency for Healthcare Research and Quality (AHRQ) | | | 5 | | | | | |
| ***Total, DHHS*** | ***324*** | ***2,980*** | ***4,035*** | ***3,704*** | ***4,148*** | ***4,090*** | ***4,041*** | ***4,182*** |

[a] Sources: DHHS Budget-in-Briefs for FY2003, FY2004, FY2005, FY2006, FY2007 and FY2008 unless otherwise noted.

[b] Includes, among other activities, funding for the Food Emergency Response Network, food defense research, food biosurveillance activities, inspection activities, and crisis/incident management.

[c] Programs transferred to the Office of the Assistant Secretary for Preparedness and Response in FY2007.

[d] For FY2003 - FY2008, CDC FY2006 - FY2008 Budget Request Summaries and the FY2007 Joint Resolution CDC Detail Table (http://www.cdc.gov/fmo/PDFs/FY_2007_JR_Detail_Table.pdf) provide supplemental data.

[e] Includes $55M transferred from Department of Defense.

[f] Transferred to DHS during FY03 and transferred back to DHHS at the beginning of FY05; FY04 funding for is therefore included in the DHS budget table. Prior to FY03, the SNS was previously known as the National Pharmaceutical Stockpile. The SNS primarily contains medical countermeasures to biological agents, but also includes some countermeasures to chemical and rad/nuc agents. Includes $11M in FY06 and $50M in FY07 for Federal Medical Shelters (portable hospital units) as part of the Mass Casualty Initiative.

[g] Transferred from NIH to the Office of the Assistant Secretary for Preparedness and Response in FY2007.

[h] rPA Anthrax Vaccine Intermediate Scaleup was a 2-year plan by NIAID to "move the anthrax recombinant protective antigen (rPA) vaccine from late-stage development to production for research purposes." The same plan was also initiated for intermediate-scale advanced development of the modified vaccinia ankara (MVA) vaccine for smallpox. (see http://www.niaid.nih.gov/ncn/budget/anthraxvac.htm) All references to these initiatives disappear after the FY05 Budget-in-Brief for HHS. Thus the FY2004 and FY2005 funding figures are estimates.

[i] From NSABB Charter. The estimated annual cost for NSABB is approximately $1 million per year to support its activities. Established mid-2004; estimated funding $500,000 in FY2004.

[j] Formed in FY2002 from the merger of the Office of Emergency Preparedness and the Office of Public Health Preparedness. These figures include $30m for "advanced research" in FY2001, $5m in FY2002, and $5m in FY2003. The two offices combined included $63m in funding for FY2001. Information on research funding in subsequent years is not available.

[k] Replaces OPHEP. Created in FY2007 pursuant to the Pandemic and All-Hazards Preparedness Act (P.L. 109-417).

l Transferred from DHS in FY2007. FY2007 data from the FY2008 HHS Budget-in-Brief. Note that this disagrees with the figure of $34m listed in the FY2008 DHS Budget-in-Brief.

[m] Transferred to DHS in FY2004. FY2001 data is non-additional funding, included within the Office of Emergency Preparedness budget.

**Department of Homeland Security (DHS)**

The Department of Homeland Security FY2008 budget request for bioweapons-related funding is estimated to be $340 million, approximately 14% lower than the estimated spending for FY2007 (Table 8). This estimate is subject to significant uncertainty, as biological weapons-specific funding in the new Chemical and Biological Division of the recently reorganized DHS Directorate of Science and Technology is not identified in publicly available documents. In addition, the reorganization moved funding for operations of the Plum Island Animal Infectious Disease Center and the National Biodefense and Analysis Center (NBACC), and for design and construction of the the National Bio and Agrodefense Facility (NBAF), into the Office of National Laboratories (see http://www.dhs.gov/xnews/testimony/testimony_1175109753037.shtm). Additional difficulties in determining bioweapons-related funding at DHS in FY2008 since FY2003 are detailed in the footnotes to Table 8 (especially notes k and n).

The Chemical and Biological Division sees the most significant funding decrease ($121 million, or 35%). Two-thirds of this decrease is due to the transfer of BioWatch operations to the newly created DHS Office of Health Affairs (much of the rest may reflect the transfer of laboratory facilities funding to the Office of National Laboratories). BioWatch is an environmental sampling and laboratory analysis system designed to detect the release of biological agents in the air. It is deployed in over thirty metropolitan areas nationwide. The Chemical and Biological Division will continue to be responsible for research and development for into “next-generation” sensors for the BioWatch system. The Office of Health Affairs, created from the Office of the Chief Medical Officer in the former Preparedness Directorate, is also responsible for the National Biosurveillance Integration System (NBIS). NBIS aims to integrate and analyze data from human health, animal, plant, food and environmental monitoring systems (both national and international) maintained by multiple agencies into a single comprehensive system that will provide “comprehensive biosurveillance situation awareness.” A new Office of Animal Disease and Agro Defense is also proposed for the Office of Health Affairs in FY2008.

The other significant proposed decrease in DHS bioweapons-related funding is the elimination of funding for the Metropolitan Medical Response System (MMRS, $33 million in FY2007). The MMRS assists highly populated jurisdictions develop plans, conduct training, and in other ways prepare for terrorist attacks using chemical, biological, nuclear and radiological weapons. Congress has rejected DHS proposals to eliminate this program

every year since FY2004. In its FY2007 DHS appropriations bill, Congress pre-authorized $30 million in funding for the MMRS in FY2008 (see FY2007 Homeland Security Appropriations Conference Report H Rept 109-699).

Of the $3.393 billion in Project BioShield money available for FY2004 through FY2008, DHS has thus far obligated $39 million for countermeasures to radiological agents and $1.01 billion for countermeasures to biological agents (botulinum toxin and anthrax). This figure excludes the $878 million award to VaxGen for a new anthrax vaccine, which was cancelled on December 19, 2006.[7] On June 4, 2007 DHHS announced a new $500 million contract with Bavarian Nordic A/S of Denmark for 20 million doses of a next generation smallpox vaccine.[8]

Congress has expressed its displeasure with financial management and accounting at the Science and Technology Directorate,[9] and withheld a total of $110m of FY2007 appropriated funding from the Directorate until its appropriations committees received and approved a detailed expenditure plan for its activities and a detailed report on its overhead and management costs and procedures (see H Rept 109-699).

**Table 8. Department of Homeland Security (DHS) budget breakdown, FY2001 – FY2008** *(in $ millions)* [a]

| Department of Homeland Security (DHS) | FY03 actual | FY04 actual | FY05 actual | FY06 actual | FY07 estimate | FY08 request |
|---|---|---|---|---|---|---|
| FEMA | | | | | | |
| National Disaster Medical System[b] | | 84[c] | 34 | 34 | | |
| Strategic National Stockpile[d] | | 398 | | | | |
| Metropolitan Medical Response System (MMRS)[b, e] | | 50 | 30 | 30 | 33 | 0 |
| *Subtotal, FEMA* | | *532* | *64* | *64* | *33* | *0* |
| Office of Health Affairs | | | | | | |
| National Biosurveillance Integration System (NBIS)[f] | | 2 | 11 | 14 | 9 | 11 |
| Biowatch[g] | | | | | | 83 |
| Animal Disease and Agro Defense | | | | | | 1 |
| Office of Chief Medical Officer | | | | 2 | 5 | |
| Management and other expenses | | | | | | 16 |
| *Subtotal, Office of Health Affairs* | | *2* | *11* | *16* | *14* | *111* |
| Science and Technology Directorate | | | | | | |
| University Programs (Homeland Security Centers of Excellence)[h] | | 33 | | | | |
| Chemical and Biological Division[i] | | | | | | |
| BioWatch[g] | | 53 | 188 | n/a | 83[j] | n/a |
| Plum Island Animal Disease Center[k] | 25 | 20 | 33 | n/a | n/a | n/a |

[7] "Anthrax Vaccine Contract Voided, Thwarting Administration" Washington Post, December 20, 2001, p. A1 at http://www.washingtonpost.com/wp-dyn/content/article/2006/12/19/AR2006121901689.html

[8] http://www.hhs.gov/news/press/2007pres/06/pr20070604a.html. Project BioShield is funded through DHS and administered by DHHS.

[9] H Rept 109-476: "Only with great difficulty has the Committee been able to gather basic budgetary information in support of the President's fiscal year 2007 request for S&T. This is disconcerting, since a budget should be built upon sound, mission-oriented planning and fiscal analysis rather than simply being cobbled together." Also, "The Committee is disappointed to learn DHS's independent financial auditors reported that during fiscal year 2005 S&T had financial reporting deficiencies, including serious difficulties maintaining accurate financial records related to obligations and disbursements. … Until these financial management challenges are addressed, uncertainty about the reliability of S&T's reported financial data may prevent DHS from resolving financial reporting deficiencies and raises questions about the fiscal year 2007 budget formulation."

| | | | | | | |
|---|---|---|---|---|---|---|
| Joint AgroTerror Defense Office (JADO) | | | | | 2 | n/a |
| National Bio and Agro-defense Facility (NBAF) | | | | 23 | 23[l] | n/a |
| National Biodefense Analysis and Countermeasures Center (NBACC)[m] | 5 | 88 | 35 | 13 | | |
| *Subtotal, Chemical and Biological Division*[n] | *119* | *471* | *479* | *443* | *350* | *229* |
| *Subtotal, Science and Technology Directorate* | *119* | *504* | *479* | *443* | *350* | *229* |
| ***Total, DHS*** | ***119*** | ***1,038*** | ***554*** | ***523*** | ***397*** | ***340*** |
| ***DHS - Project BioShield***[o] | | ***885*** | ***2,469*** | | | |

[a] Sources: DHS' Budgets-in-Brief for FY2005 - FY2008 unless otherwise noted. In most cases, funding is organized according to the organizational structure of DHS in 2007.

[b] These programs may include some funding that is not biodefense-related. The NDMS was transferred to Health and Human Services in January 2007.

[c] From White House FY2006 DHS Budget Appendix, available at www.whitehouse.gov/omb/budget/fy2006/pdf/appendix/dhs.pdf

[d] Located at DHS in FY2004 only.

[e] Prior to FY2007, MMRS was located in the Office of Public Health Emergency Preparedness at DHHS. Data for FY2004 - FY2007 from DHS Appropriations Conference Reports H Rept 108-280, H Rept 108-774, H Rept 109-241 and H Rept 109-699.

[f] In FY2004 and FY2005, NBIS was located in the Infrastructure Protection and Information Analysis Directorate, and in FY2006 in the Preparedness Directorate. FY2004 data from from GAO Report GAO-05-308; FY2006 from CRS Report RL33248 (May 10, 2006); FY2008 from CRS Report RL34004.

[g] Biowatch operations transferred from Science and Technology in FY2007, with first funding under OHA in FY2008. Additional data from CRS Report RL34004. Science and Technology will continue to be responsible for further technological development of the Biowatch system.

[h] For 3-year grants of $18m to Texas A&M University for foreign animal and zoonotic diseases, and $15m to the University of Minnesota's University Center for Post-Harvest Food Protection and Defense for agro-security. From http://www.dhs.gov/dhspublic/display?content=3517

[i] The Chemical and Biological Division was created in the 2006 reorganization of DHS S&T. Previously, Biological Countermeasures and Chemical Countermeasures were organized as separate "Portfolios."

[j] From FY2007 DHS Appropriations Conference Report H Rept 109-699.

[k] FY2003 is a direct transfer of funds from USDA, data from CRS Report RS21270 (June 20, 2003); FY2004 data from GAO Report GAO-06-132; FY2005 data are uncertain. The DHS FY2005 Budget-in-Brief (pages 50-51) reports "a total Plum Island Animal Disease Center funding level of $32.9 million for FY 2005." In contrast, the GAO Report GAO-06-132 states that "$51 million total [was] allocated to the agency [DHS] for Plum Island in fiscal year 2005." Of this $51.3m figure, $8.3m was for programmatic funds for DHS. A graph provided in the report shows ~$27m is provided for operations and maintenance and ~$13m for facility improvements.

[l] From FY2007 DHS Appropriations Conference Report H Rept 109-699.The FY2006 Congressional Justification anticipated funding for NBAF of $73m in FY2007, and of $129m in FY2008. Funding for NBAF has been transferred from the chemical and biological division to the Office of the Director of Research; its funding level in FY2007 and FY2008, if any, can not be determined from publicly available information.

[m] Data from FY2005 Senate Report 108-280, FY2004 and FY2005 DHS Appropriations Conference Reports H Rept 108-280 and H Rept 108-774. Congress appropriated funds for NBACC as a separate line from the BioCountermeasures Portfolio (now Chemical and Biological Division). However, DHS usually reports these as a combined funding level in its budget documents. The total cost of NBACC is $141m, the additional $13m was reprogrammed from other portfolios (CRS Report RL32891 (February 15, 2007)) and has been arbitrarily assigned to FY2006 in this analysis.

[n] Overall funding data for the Biological and Chemical Division vary significantly depending on source. These data are represent best guesses based on available information. **FY2003**: based on funding for DOE predecessor programs (see FY 2004 Congressional Budget for Department of Energy, and CRS report RL31914 (June 20, 2003) for funding data). According to CRS report RS21270 (March 15, 2004, citing AAAS), FY2003 funding totaled $363m. At least $68m of this was not obligated in FY2003 (FY2004 DHS Appropriations Conference Report H Rept 108-280). **FY2004**: the FY2006 DHS S&T Congressional Justification provides a figure of $471m, while the FY2006 DHS Performance Budget Overview (also prepared by DHS) provides a figure of $179m. Congress appropriated $285m in FY2004, excluding $19m transferred from the Bio Countermeasures portfolio to Management and Administration for biodefense-specific salary and facility support (H Rept 108-280). This analysis uses the data contained in the Congressional Justification. When added to FY2003 DOE predecessor funding, FY2003-FY2004 funding totals $560m, or $18m more than the total derived from the CRS report and the FY2006 Performance Budget Overview. **FY2005**: from the FY2007 DHS Performance Budget Overview, but this may omit an additional $9m transferred to Management and Administration as in FY2004. Congress appropriated $388m in FY2005. **FY2006**: derived by subtracting $100m for chemical countermeasures (based on the FY2006 Congressional appropriation of $94m (H Rept 109-241) and the FY2007 Performance Budget Overview estimate of $101m) from the $530m listed in the FY2008 DHS Performance Budget Overview as the total

funding for the Chemical and Biological Division. The FY2008 Budget-in-Brief does not provide data for actual FY2006 funding. Note that the FY2008 Overview correctly states that Congress appropriated a combined $470m for chemical and biological countermeasures in FY2006, while the FY2008 DHS Budget in Brief states that Congress appropriated only a combined $387m in FY2006. **FY2007**: from the Congressional appropriation for biological countermeasures (DHS Conference Report H Rept 109-699). Congress also appropriated $60m for chemical countermeasures in FY2007, for a combined total of $410m. In contrast, both the FY2008 Performance Budget Overview and the FY2008 Budget in Brief state that the combined appropriation for the Chemical and Biological Division was only $314m. The reason for the FY2006 and FY2007 discrepancies is unclear, but may be related to a $125m recission of unobligated balances from prior year appropriations which was levied by Congress in its FY2007 appropriations (see H Rept 109-699). FY2007 funding may be clarified in the FY2009 budget submissions. **FY2008**: from the FY2008 Budget in Brief. Based on historical trends, it may be reasonable to assume that approximately 80% of this funding is dedicated to biodefense. Given the discrepancies noted, the fact that funding for biodefense-related staff and facilities (including NBACC and Plum Island) has been included in other accounts since at least FY2006 and can not be determined from available information (but may be as much as $15m per year), and the possibility that funding for NBAF construction in FY2008 is not included in this analysis, FY2007 and FY2008 biodefense funding may be significantly underestimated. AAAS budget analysts note that "the 2008 budget as presented could be a placeholder until [Undersecretary] Cohen's reorganization [of the Directorate] is complete, so the final 2008 appropriation could look very different from this request." (http://www.aaas.org/spp/rd/dhs08p.pdf)

[o] The Project Bioshield Act of 2004 authorized $5.593b for biodefense countermeasures for FY2004 through FY2013, as follows: $3.418b for FY2004 through FY2008, and $2.175b for FY2009 through FY2013 (FY2004 DHS Appropriations Conference Report (H. Rept. 108-280)). Of this, $885m was appropriated in FY2004, and $2.508b was appropriated in FY2005 (after an across-the-board recission of 0.8% in all FY2005 budgets.) The figure reported here is further reduced by $39m used for purchases of radiological/nuclear countermeasures (CRS Report RL33907, April 13, 2007). In budget documents, Project Bioshield is listed as "Biodefense countermeasures" within the former Preparedness Directorate.

### State Department

The State Department FY2008 budget request for bioweapons-related programs is estimated to be $43 million, essentially unchanged from FY2007 (Table 9). In recent years the State Department has often not provided information on actual funding levels for specific programs. In such cases, this analysis provides estimates based on the assumption that the Department consistently funds programs from year to year, less small reductions reflecting Congressional reductions in the larger program areas within which they reside. Actual funding for FY2007 may be as high as $50 million because specific funding information for biological weapons-related activities funded under the Non-Proliferation and Disarmament Fund (NDF) is not available. Total NDF funding is cut by approximately 20% in the FY2008 request. In FY2006, the State Department initiated the Biosecurity Engagement Program (BEP) to improve pathogen security, facility biosecurity, and scientist engagement in South and Southeast Asia and the Middles East. In FY2006 the program was funded by reprogramming $4 million from other GTR programs. According to the Partnership for Global Security, $10 million was allocated for BEP in FY2007 but it is not clear if this money came from other programs within the GTR program. The Partnership for Global Security estimates a similar funding level for FY2008.[10]

**Table 9. State Department budget breakdown, FY2001 – FY2008** *(in $ millions)* [a]

| State Department | FY01 actual | FY02 actual | FY03 actual | FY04 actual | FY05 actual | FY06 actual | FY07 estimate | FY08 request |
|---|---|---|---|---|---|---|---|---|
| Worldwide Security Upgrades: Chemical/ Biological Program[b] | 4 | 4 | 15 | 17 | 17 | 12 | 11 | 11 |
| NADR Programs[c] | | | | | | | | |
| Non-Proliferation and Disarmament Fund: Biological and Chemical Weapons Terrorism Initiative[d] | | | | 7 | 7 | n/a | n/a | n/a |
| Global Threat Reduction Program[e] | | | | | | | | |
| Bio-Chem Redirect | 16 | 15 | 20 | 20 | 17 | 16 | 16 | 16 |
| Bio-Industry Initiative[f] | | 30 | 0 | 2 | 3 | 6 | 12 | 12 |
| *Subtotal, NADR* | *16* | *45* | *20* | *29* | *27* | *22* | *28* | *28* |

[10] Partnership for Global Security, "Preliminary Analysis of the U.S. State Department's Fiscal Year 2008 Budget Request for Global WMD Threat Reduction Programs, at http://www.partnershipforglobalsecurity.org.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bureau of International Security and Non-Proliferation: Chemical and Biological Weapons Threat Reduction[g] | | | | | | 2 | 2 | 3 |
| Bureau of Verification, Compliance and Implementation: Office of BW Affairs[g] | | | | | | 1 | 1 | 1 |
| ***Total, State Department*** | ***20*** | ***49*** | ***35*** | ***46*** | ***44*** | ***37*** | ***42*** | ***43*** |

[a] Sources: State Department Budgets-in-Brief, Account Tables within the International Affairs (Function 150) Budget Requests, and Department of State Congressional Budget Justifications for FY2003 - FY2008; Government Accountability Office Reports GAO-04-521 and GAO-05-157, and Congressional Research Service Report RL31957.

[b] May include funding that is not biodefense-related.

[c] Non-Proliferation, Anti-terrorism, Demining and Related Programs.

[d] Specific amount listed only in the FY2004 and FY2005 Department of State Congressional Budget Justifications. Spending is estimated based on adjusting these requests by the ratio of actual to requested overall NADR-NDF funding, the actual funding levels being reported in the FY2006 and FY2007 Budget Justifications. Funding for these efforts has continued through FY2008, but amounts are not available.

[e] Formerly called Nonproliferation of WMD Expertise (NWMDE), the GTRP includes 4 programs: Bio-Chem Redirect (previously known as Bio-Chem Redirection or Biotechnology Redirection), the BioIndustry Initiative (BII), Science Centers, and the WMD Scientist Redirection Program in Iraq. Most GTRP bioweapons-related funding is provided by the first two programs (personal communication). Funding data for BII in FY2006 are from Partnership for Global Security "Preliminary Analysis of the U.S. State Department's Fiscal Year 2007 Global WMD Threat Reduction Programs." FY2007 estimate reflects adjustment of FY2007 request to account for continuation of overall GTRP funding at FY2006 levels. Specific data is not available for FY2008; an estimate is provided based on the overall GTRP funding request for FY2008, which is virtually unchanged (5% reduction) from FY2006.

[f] The BII was established with a one-time transfer of $30m from Department of Defense in FY2002. Funding data for FY2006 are from Partnership for Global Security "Preliminary Analysis of the U.S. State Department's Fiscal Year 2007 Global WMD Threat Reduction Programs." FY2007 estimate reflects adjustment of FY2007 request to account for continuation of overall GTRP funding at FY2006 levels. Specific data is not available for FY2008; an estimate is provided based on the overall GTRP funding request for FY2008, which is virtually unchanged (5% reduction) from FY2006.

[g] From the FY2008 Department of State Congressional Budget Justification. Funding data for these and predecessor offices prior to FY2006 is not available.

**Environmental Protection Agency (EPA)**

The Environmental Protection Agency FY2008 budget request for bioweapons-related funding is estimated to be approximately $137 million, 33% higher than FY2007 estimated spending (Table 10). However, the overall level of EPA's biodefense-related activities and their respective funding amounts is unclear. Some activities – such as the Water Security Initiative – are strongly tied to biodefense, but little information can be found on how much or which parts of the EPA homeland security related programs are biodefense-specific. $22 million is requested for the Water Security Initiative (previously called Water Sentinal) to complete deployment of final pilot systems for timely detection and response to drinking water contamination threats and incidents. This is a $20 million dollar decrease from the FY2007 request for this effort. However, with passage of the FY2007 Continuing Resolution, it is likely that this program is being significantly underfunded (up to $30 million) relative to EPAs plans for FY2007. $35 million is requested for decontamination science, technology, training and response planning in FY2008, an increase of $24 million over FY2006 funding. Congress has historically under-funded decontamination efforts relative to requested amounts. $6.3 million is requested to continue establishing a national Environmental Laboratory Response Network (eLRN) to provide laboratory analysis of environmental samples in the aftermath of a terrorist incident.

**Table 10. Environmental Protection Agency budget breakdown, FY2001 – FY2008** *(in $ millions)* [a]

| Environmental Protection Agency | FY01 actual | FY02 actual | FY03 actual | FY04 actual | FY05 actual | FY06 actual | FY07 estimate | FY08 request |
|---|---|---|---|---|---|---|---|---|
| Capital Hill Anthrax Cleanup Emergency Supplemental[b] | 20 | | | | | | | |
| Clean and Safe Water | | 100 | | | | | | |
| Waste Management | | 42 | | | | | | |
| *Subtotal, Emergency Supplemental* | | *142* | | | | | | |
| Categorical Grants to States: Water Safety | | 5 | 5 | 5 | 5 | 4 | 4 | 5 |
| Critical Infrastructure Protection | | | | | | | | |
| Science and Technology | | 2 | 14 | 18 | 18 | 13 | 13 | 26 |
| EPM | | 1 | 4 | 6 | 7 | 5 | 5 | 8 |
| Superfund | | 0 | 0 | 1 | 1 | 1 | 1 | 2 |
| *Subtotal, Critical Infrastructure Protection* | | *3* | *18* | *25* | *26* | *19* | *19* | *35* |
| Communication and Information - EPM | | 1 | 1 | 4 | 5 | 5 | 5 | 7 |
| Preparedness, Response and Recovery | | | | | | | | |
| Science and Technology | | 3 | 3 | 15 | 33 | 33 | 33 | 41 |
| EPM | | 0 | 1 | 1 | 3 | 2 | 2 | 3 |
| Superfund | | 3 | 66 | 64 | 38 | 40 | 40 | 45 |
| *Subtotal, Preparedness, Response and Recovery* | | *5* | *69*[c] | *80* | *74* | *75* | *75* | *89* |
| ***Total, EPA*** | ***20*** | ***155*** | ***95*** | ***114*** | ***111*** | ***103*** | ***103*** | ***137*** |

[a] From the EPA FY2003 - FY2008 Congressional Justifications, unless noted. Excludes funding for Homeland Security: Protection of EPA Personnel and Facilities.

[b] Excludes $30 million in Emergency Supplemental funds for EPA facility security.

[c] Exludes $1m for activities directed towards radiological events. Funding for this activity continues in subsequent years, but amounts are not detailed in EPA budget documents.

**Other Government Agencies (Table 11)**

**Department of Commerce**

The Department of Commerce FY2008 budget request for bioweapons-related programs is approximately $7 million, virtually unchanged from FY2007. In this analysis, bioweapons-related funding is estimated based on multiplying the actual (FY2001-FY2006), estimated (FY2007) or requested (FY2008) appropriation for the Department of Commerce's Bureau of Industry and Security (BIS) by the fraction of export license requests processed by BIS that were for biological materials in each year (FY01-FY06), as reported in the Bureau of Industry and Security Annual Reports for FY2001 to FY2006, the BIS Foreign Policy Reports from 2002 to 2007, and the Dept. of Commerce Budget Appendices for FY2003 to FY2008. For FY2007 and FY2008, the average fraction of the previous three years (9.2%) was used.

**Department of Veterans Affairs (VA)**

The Department of Veterans Affairs FY2008 budget request for bioweapons-related programs is less than $1 million, unchanged from FY2007. However, the FY2006 and FY2007 funding levels listed in the FY2008 request

are significantly reduced from the $9 - $10 million listed in the FY2007 request. The reason for this change is unclear. The Department had one main program of relevance to biodefense – Medical Research: Emerging Pathogens/Bio-terrorism.

**National Science Foundation (NSF)**

The National Science Foundation FY2008 budget request for bioweapons-related programs is $25 million, approximately 10% lower than estimated spending for FY2007. The National Science Foundation's primary biodefense programs are Microbial Genome Sequencing and Ecology of Infectious Diseases.

**United States Postal Service (USPS)**

The United States Postal Service has received funding over the past years for activities related to protection and response to biological weapons agents, particularly anthrax. Since FY2001, USPS has received a total of approximately $1.265 billion in biodefense-related money. No funding is requested in FY2008.

**Intelligence Community (Federal Bureau of Investigation (FBI), Central Intelligence Agency (CIA), and Office of the Director of National Intelligence (ODNI))**

Although the Federal Bureau of Investigation (FBI) within the Department of Justice (DoJ) has bioweapons-related programs and activities, very little information can be found regarding such activities and their funding. The same applies to the CIA and ODNI.

**Table 11. Other Government Agencies' budget breakdown, FY2001 – FY2008** *(in $ millions)*

| Other Government Agencies | FY01 actual | FY02 actual | FY03 actual | FY04 actual | FY05 actual | FY06 actual | FY07 estimate | FY08 request |
|---|---|---|---|---|---|---|---|---|
| Department of Commerce | 3 | 4 | 5 | 7 | 6 | 5 | 7 | 7 |
| Department of Veterans Affairs (VA): Medical Research -- Emerging Pathogens/Bio-terrorism[a] | n/a | n/a | 27 | 23 | 9 | 0.3 | 0.3 | 0.3 |
| National Science Foundation (NSF)[b] | | | | | | | | |
| Microbial Genome Sequencing | 0 | 17[c] | 26[c] | 17 | 17 | 17 | 18 | 15 |
| Ecology of Infectious Diseases | 0 | | | 10 | 10 | 10 | 10 | 10 |
| *Total, NSF* | *0* | *17* | *26* | *27* | *27* | *27* | *28* | 25 |
| United States Postal Service (USPS) | | | | | | | | |
| Response to anthrax[d] | 175 | | | | | | | |
| Protection and Screening[e] | | 587 | | | 503 | | | |
| *Total, USPS* | *175* | *587* | | | *503* | | | |
| Intelligence Community | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

[a] Sources: FY2005 - FY2008 Budget Submission Summary Volumes
[b] Sources: NSF's Budgets-in-Brief for FY2004 - FY2008 unless otherwise noted.

[c] These figures may include more than biodefense-related money. In FY2002 and FY2003, Microbial Genome Sequencing and Ecology of Infectious Diseases were clumped together with "Tree of Life" and other programs under the category "Biocomplexity in the Environment." No specific information on these programs were provided and thus, it is unclear how much the two specific programs actually received.

[d] From Emergency Response Fund, P.L. 107-38 (11/20/01)
[e] Sources: Emergency Supplemental Act of 2002 (P.L. 107-117), Supplemental Appropriations Act of FY2002 for Further Recovery from the Response to Terrorist Attacks on the United States (P.L. 107-126), FY2005 from Omnibus 2005 Appropriations bill (P.L. 108-447)

**Pandemic Influenza**

Growing concern about the spread of the H5N1 highly pathogenic avian influenza virus and the possible emergence of a new flu pandemic led President Bush to request $7.1 billion in emergency funding to implement a new National Strategy for Pandemic Influenza in November 2005.[11] Congress responded by passing two Emergency Supplemental Appropriations in December 2005 (Public Law 109-148, appropriating $3.79 billion) and June 2006 (Public Law 109-234, appropriating $2.3 billion). In FY2008, the Bush Administration is requesting an additional $1.5 billion to fund activities aimed at surveillance, preparedness and response to a potential pandemic influenza outbreak, bringing total funding from FY2005 – FY2008 to nearly $8 billion. The majority of this funding (over $5 billion) is devoted to the development, acquisition and stockpiling of flu vaccines and anti-viral drugs. Another $770 million is for state and local preparedness. Approximately $500 million is allocated to international surveillance, preparedness and response activities. A complete breakdown of pandemic influenza-related appropriations is provided in Table 12.

**Table 12. Pandemic influenza budget breakdown, FY2005 – FY2008** *(in $millions)*

| Department/Agency | FY05 actual | FY06 actual | FY07 estimate | FY08 request | FY05 - FY08 |
|---|---|---|---|---|---|
| Agriculture[a] | 27 | 61 | 63 | 82 | 233 |
| Defense[b] | | 130 | | 100 | 230 |
| Health and Human Services[c] | | | | | |
| Public Health and Social Services Emergency Fund (PHSSEF) | | | | | |
| Vaccines: Production and Purchase | | 2963 | | 543 | 3506 |
| Antivirals: Purchase | | 511 | | 248 | 759 |
| Advanced Development: Antigen sparing/Antiviral drugs | | 650 | | 0 | 650 |
| State/Local Preparedness | | 770 | | 0 | 770 |
| Strategic National Stockpile | | 170 | | 0 | 170 |
| Vaccine Registry | | 10 | | 0 | 10 |
| Rapid Diagnostics (CDC) | | | | 79 | 79 |
| *Subtotal PHSSEF* | | *5074* | | *870* | *5944* |
| CDC[d] | 73 | 400 | 100 | 158 | 731 |
| FDA | | 20 | | 51 | 71 |
| NIH | | 18 | | 35 | 53 |
| Office of the Secretary[e] | | 78 | | 78 | 156 |
| Transfer to USAID/CSH | | -30 | | | -30 |
| *Total, DHHS* | *73* | *5590* | *100* | *1192* | *6955* |
| Homeland Security[b] | | 47 | | n/a | 47 |
| Interior[f] | | 12 | 13 | 7 | 32 |
| State[g] | 10 | 31 | | n/a | 41 |
| US Agency of International Development (USAID)[h] | | | | | |
| Global Health/Child Survival and Health (CSH) Programs Fund | | 105 | | 100 | 205 |
| International Disaster and Famine Assistance/ Democracy, Conflict and Humanitarian Assistance Contingency Fund | | 56 | | 0 | 56 |
| Veterans Affaris[b] | | 27 | | 17 | 44 |
| ***Total HPAI/Pandemic Flu*** | ***110*** | ***6059*** | ***176*** | ***1498*** | ***7843*** |

[11] *Fact Sheet: Safeguarding America Against Pandemic Influenza* at http://www.whitehouse.gov/news/releases/2005/11/20051101.html.

[a] From FY2007 and FY2008 Budget Summaries. FY2006 and FY2007, baseline funding was supplemented by $92m provided by the FY2006 Department of Defense and Emergency Supplemental Appropriations Act, 2006 (Public Law 109-148) and distributed between FY2006 and FY2007.

[b] FY2006 provided by Public Law 109-148.

[c] From FY2008 DHHS Budget-in-Brief.

[d] FY2005 funding provided by the Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Tsunami Relief, 2005 (including $58M for purchase of countermeasures for SNS; and $15M for international activities; Public Law 109-13). FY2006 funding provided by Public Law 109-148 and Public Law 109-234 (Second Emergency Supplemental, 2006). FY2006 funding includes up to $125m for international pandemic influenza surveillance, diagnosis, investigations and rapid response; $35m for the BioSense domestic surveillance system; $80m for CDC lab capacity and research; and $80m for advanced development, stockpiling and deployment of diagnostic tests and reagants;. FY2007 funding was provided in the final Continuing Appropriations Resolution, 2007 (Public Law 110-5) for "pandemic influenza and other infectious diseases," and includes at least $15m for international surveillance and $13m for domestic surveillance. The FY2008 request includes $65m for international activities, $15m for diagnostic reagents, and $54m for vaccine related activities.

[e] FY2006 funding provided by Public Law 109-148. FY2008 request includes $15m for international in-country advanced development of vaccines and $35m for international preparedness and response.

[f] FY2006 funding provided by Public Law 109-148. FY2007 funding provided by Public Law 110-28.

[g] FY2005 funding provided by Public Law 109-13 ($25m less $15m transfer to CDC); FY2006 funding provided by Public Law 109-148, of which $16m is for international coordination, response and diplomacy related to avian influenza and $15m is for emergency evacuation; $1m was to be transferred to the Peace Corps.

[h] Provided by Public Law 109-148, plus $30m transfer from HHS to CSH under Public Law 109-234.