

## Federal Funding for Biological Weapons Prevention and Defense, Fiscal Years 2001 to 2009

### Introduction

Since the 2001 terrorist attacks on the United States, the U.S. government has spent or allocated nearly \$50 billion among 11 federal departments and agencies to address the threat of biological weapons. For Fiscal Year 2009 (FY2009), the Bush Administration proposes an additional \$9 billion in bioweapons-related spending, approximately \$2.5 billion (39%) more than the amount that Congress appropriated for FY2008. New U.S. funding for bioweapons-related activities focuses primarily on research, development, and acquisition of medical countermeasures. Additionally, significant biodefense funding goes to purchasing protective equipment, enhancing medical surveillance and environmental detection of biological weapons agents, and improving state, local, and hospital preparedness. The increase in bioweapons related funding in FY2009 is primarily attributed to Project BioShield, a ten-year program to acquire medical countermeasures to biological, chemical, radiological and nuclear agents for civilian use, which will receive an additional \$2.175 billion as a result of FY2004 legislation. However, a notable change in funding also appears in the Biomedical Advanced Research and Development Authority (BARDA) within the Department of Health and Human Services, which more than doubles in FY2009. Finally, funding for activities aimed at prevention has more than doubled since FY2007. Further strengthening of prevention efforts, including a commitment to broad cooperative international action, is essential for improving our nation's security.

Annual bioweapons-related funding for the following departments and agencies from FY2001 to FY2009 is summarized in Table 1: the Departments of Agriculture (USDA), Commerce, Defense (DOD), Energy (DOE), Health and Human Services (DHHS), Homeland Security (DHS), State, Veterans Affairs (VA), and 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. 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 \$6.6 billion/year since FY2004.

Cumulative total funding by agency for the entire FY2001 to FY2009 period (\$57.02 billion if the FY2009 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). 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 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 the NIH, with *ex officio* representation from 16 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."<sup>1</sup>

Cumulative funding for biodefense RDT&E from FY2001 through FY2009 is nearly \$24 billion, over 40% of all bioweapons-related funding since FY2001 (Table 2). Of this, approximately \$2.4 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 billion over the next five years for two of these BSL-4 facilities.

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<sup>1</sup> biosecurityboard.gov

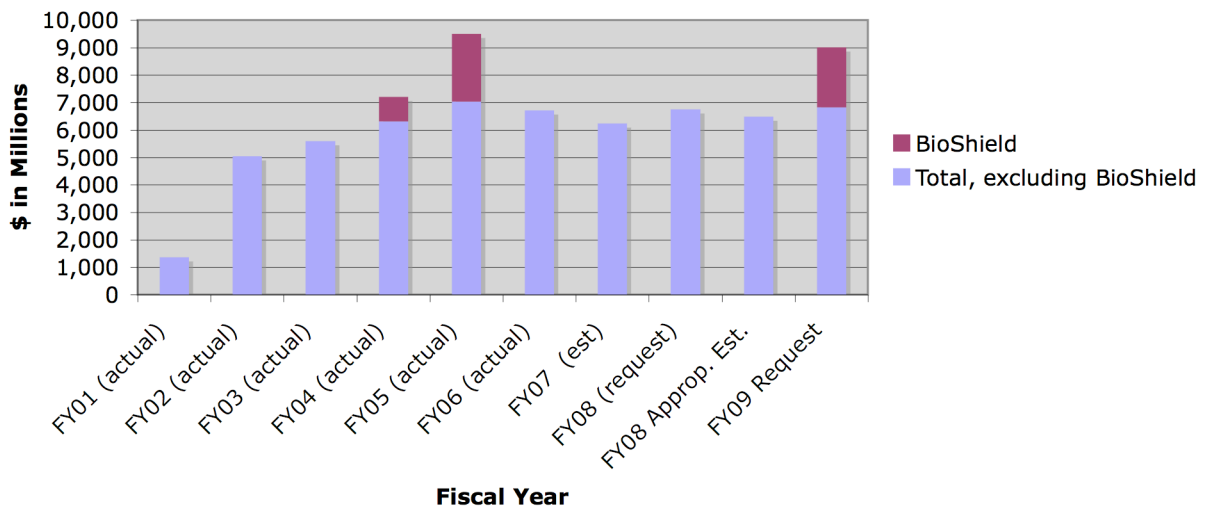
In contrast, cumulative funding for efforts to prevent the development, acquisition, and use of biological weapons is expected to reach approximately \$1.13 billion in FY2009 (Table 3). This is less than 5% of the total funding for biodefense RDT&E during the same time period. FY2009 sees a \$32 million increase from the FY2008 appropriation for prevention efforts. In FY2008, \$218 million was appropriated by Congress for prevention activities, \$31 million more than the request. Funding for prevention activities as a percentage of total bioweapons-related funding is 3.4% in FY2008 and 3.7% in FY2009, returning to levels not seen since FY2001. Approximately 90% of prevention funding is allocated to the Departments of Defense, Energy and State for Cooperative Threat Reduction efforts, primarily in states of the former Soviet Union but increasingly also in other countries, particularly in South and Southeast Asia. Other prevention-related funding is provided to the Department of Commerce for Export Controls on materials and 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 1. Federal Funding for Bioweapons Prevention and Defense, by Department or Agency, FY2001 – FY2009 (in \$ millions)**

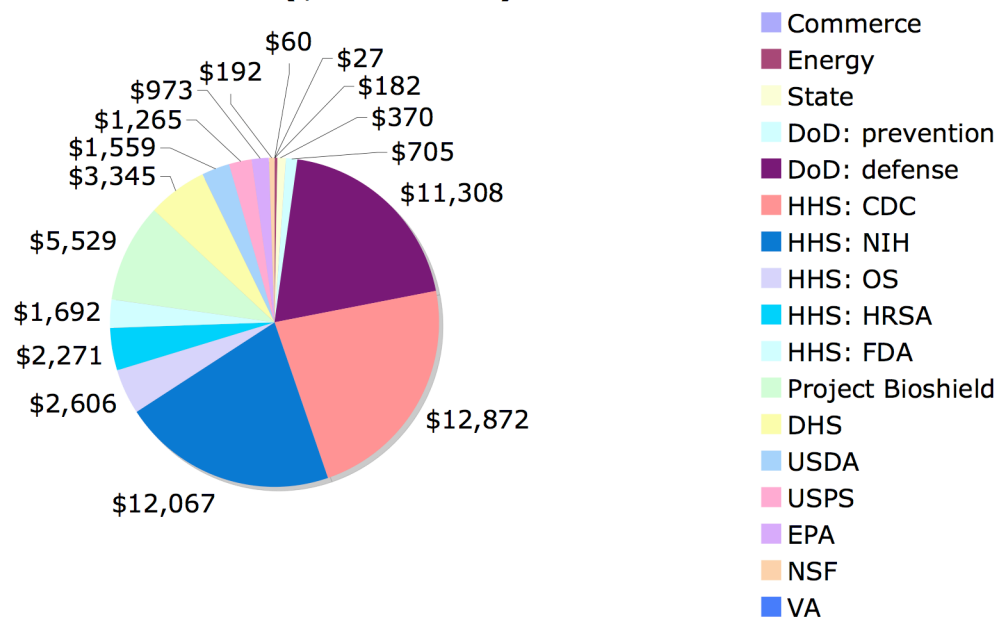
<b>Department or Agency</b>	<b>FY2001-FY2006 Total</b>	<b>FY2007 estimate</b>	<b>FY2008 request</b>	<b>FY2008 estimate</b>	<b>FY2009 request</b>	<b>FY2001-FY2009 Total</b>
Agriculture (USDA)	909	186	340	187	277	1,559
Commerce (DOC)	15	4	4	4	4	27
Defense (DOD)	7089	1,461	1,699	1,705	1,758	12,013
Energy (DOE)	160	7	5	8	7	182
Health and Human Services (DHHS)	19280	4,063	4,151	3,999	4,171	31,513
Homeland Security (DHS) <sup>a</sup>	2207	354	361	385	399	3,335
DHS - Project BioShield	3354	0	0	0	2,175	5,529
State (DOS)	238	35	36	49	48	370
Veterans Affairs (VA)	59	1	0	0	0	60
Environmental Protection Agency (EPA)	597	103	136	123	150	973
National Science Foundation (NSF)	124	28	25	25	15	192
U.S. Postal Service (USPS)	1265	0	0	0	0	1,265
<b>Total</b>	<b>35287</b>	<b>6,242</b>	<b>6,757</b>	<b>6,485</b>	<b>9004</b>	<b>57,018</b>
<b>Total, excluding BioShield</b>	<b>31933</b>	<b>6,242</b>	<b>6,757</b>	<b>6,485</b>	<b>6829</b>	<b>51,489</b>

<sup>a</sup> Includes funding in FY2001 and FY2002 for DOE programs transferred to DHS at its creation.

**Figure 1. Total Federal Funding for Bioweapons Prevention and Defense FY2001 - FY2009**



**Figure 2. Total Federal Funding for Bioweapons Prevention and Defense by Agency FY2001-FY2009 (\$ in millions)**



**Table 2. Funding for Biodefense Research, FY2001 – FY2009** (in \$ millions)

Research	FY2001-FY2006 Total	FY2007 estimate	FY2008 request	FY2008 estimate	FY2009 request	FY2001 - FY2009 Total
Facilities						
Agriculture (USDA)	359	0	16	4	13	376
Defense (DoD)	21	29	150	150	209	409
Health and Human Services (DHHS)	1083	25	0	0	0	1108
Homeland Security (DHS)	242	88	72	72	100	502
<i>Facilities, Subtotal</i>	<i>1705</i>	<i>142</i>	<i>238</i>	<i>226</i>	<i>322</i>	<i>2395</i>
Programs						
USDA	104	34	81	34	62	234
DOD: Army	93	22	25	28	35	178
DARPA	906	100	99	72	66	1144
CBDP	3282	813	827	846	880	5821
<i>DOD, Subtotal</i>	<i>4281</i>	<i>935</i>	<i>951</i>	<i>946</i>	<i>981</i>	<i>7143</i>
DHHS: FDA	272	57	57	56	67	452
CDC	118	12	0	8	8	146
NIH	6130	1649	1628	1633	1635	11047
OS/BARDA	40	104	189	102	250	496
<i>DHHS, Subtotal</i>	<i>6560</i>	<i>1822</i>	<i>1874</i>	<i>1799</i>	<i>1960</i>	<i>12141</i>
DHS <sup>a</sup>	753	138	134	129	146	1166
DOE	131	0	0	0	0	131
VA	59	0	0	1	0	60
EPA	152	46	67	53	69	320
NSF	124	28	25	25	15	192
<i>Programs, Subtotal</i>	<i>12164</i>	<i>3003</i>	<i>3132</i>	<i>2987</i>	<i>3233</i>	<i>21387</i>
<b><i>Research, Total</i></b>	<b><i>13869</i></b>	<b><i>3145</i></b>	<b><i>3370</i></b>	<b><i>3213</i></b>	<b><i>3555</i></b>	<b><i>23782</i></b>

<sup>a</sup> FY2003-FY2006 figures calculated by subtracting facilities and BioWatch funding from the total Chemical and Biological Division. If BioWatch funding was unavailable for these years it was assumed that 60% of funding was dedicated to research programs. FY2007-FY2009 figures were calculated by adding the total for the Biological and Chemical Division (minus BioWatch) to figures for Transition, Innovation, and Testing & Evaluation and Standards.

**Table 3. Funding for Bioweapons Prevention Activities, FY2001 – FY2009** (in \$ millions)

Department or Agency	FY2001-FY2006 Total	FY2007 estimate	FY2008 request	FY2008 estimate	FY2009 request	FY2001 - FY2009 Total
USDA: APHIS: Select Agents - Plants and Animals	6	3	7	4	6	19
DOD: CTR	291	72	144	158	184	705
DHHS: CDC: Select Agent Program <sup>a</sup>	30	5	5	5	5	45
NIH: NSABB	3	1	1	1	1	6
State: Nonproliferation Programs	169	24	25	38	43	274
Commerce: Export Controls	15	4	4	4	4	27
DOE: NIS Programs	35	7	5	8	7	57
<b><i>Prevention, Total</i></b>	<b><i>549</i></b>	<b><i>116</i></b>	<b><i>187</i></b>	<b><i>218</i></b>	<b><i>250</i></b>	<b><i>1133</i></b>

<sup>a</sup> Unlike USDA, HHS and CDC do not specifically provide this data. This is an estimate based on USDA data and on FY2002 data from GAO Report [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 detailed examination of programs and activities with accompanying explanations and funding numbers. They typically provide information on actual or enacted 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 – FY2007 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.

However, not all numbers are readily available, particularly for the Department of Homeland Security (DHS) and the State Department. Thus, information must sometimes be gathered from a number of different sources, including, but 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. Moreover, 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 and is not possible to separate out the 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, that 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 likely contribute to U.S. biodefense. A supplementary table detailing more than \$8 billion in spending on pandemic and avian influenza is included at the end of this analysis.

## USDA

The Department of Agriculture requests \$277 million for its Food and Agriculture Defense Initiative in FY2009. If fully funded, the budget of the Agricultural Research Services (ARS) would increase by 80% to \$62 million and the animal and plant disease surveillance budget would increase by over 45% to \$98 million. Similar funding increases have been rejected by Congress for the past two years. The Department also requested \$9 million for the biocontainment laboratory and research facility at Athens, GA.

Department of Agriculture (USDA) <sup>a</sup> (in millions)	FY2001-FY2006 Total	FY2007 estimate	FY2008 request	FY2008 estimate	FY2009 request	Total
<b>Food Defense:</b>						
FSIS						
Surveillance and Monitoring	8	3	3	3	3	17
Food Emergency Response Network (FERN)	5	4	19	14	14	37
Enhanced Inspections	6	2	2	2	2	12
Laboratory Upgrades and Physical Security	10	3	6	6	6	25
Education/Training	9	3	4	2	2	16
Other Activities	18	5	5	5	5	33
Research (ARS)	22	9	23	9	23	63
<b>Subtotal, Food Defense</b>	<b>83</b>	<b>29</b>	<b>62</b>	<b>41</b>	<b>55</b>	<b>208</b>
<b>Agriculture Defense:</b>						
Research (ARS)	82	25	58	25	39	171
National Plant Disease Recovery System (ARS)	4	2	6	2	2	10
Regional Diagnostic Network (CSREES)	27	10	14	10	14	61
Higher Education Agrosecurity Program (CSREES)			5	0	2	2
Animal and Plant Health Inspection Service (APHIS)						
Enhanced Surveillance	205	82	119	63	98	448
Biosurveillance	8	2	3	2	3	15
Plant Safeguarding Activities	51	16	23	18	19	104
Select Agents – Plants and Animals	6	3	7	4	6	19
National Veterinary Stockpile	7	3	8	4	8	22
Other APHIS	78	14	19	14	18	110
<b>Subtotal, Agriculture Defense</b>	<b>467</b>	<b>157</b>	<b>262</b>	<b>142</b>	<b>209</b>	<b>975</b>
Complete Ames, Iowa BSL-3 Facility	322					322
Athens, GA Biocontainment Lab/Poultry Research Facility			16	4	13	17
Plum Island Animal Disease Center (PIADC) <sup>b</sup>	37					37
<b>Total, USDA</b>	<b>909</b>	<b>186</b>	<b>340</b>	<b>187</b>	<b>277</b>	<b>1559</b>

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

<sup>b</sup> Sources: USDA FY2001 Conference Report (H. Rept. 106-948); [http://www.whitehouse.gov/omb/dhs/MajorComp\\_Total.pdf](http://www.whitehouse.gov/omb/dhs/MajorComp_Total.pdf), accessed June 20, 2006. Funding for Plum Island was transferred to DHS in FY2003.

## DOD

The Department of Defense FY2008 budget request for bioweapons-related funding is \$1.758 billion, an increase of approximately 3% over FY2008 estimated spending. \$210 million is for continued construction of a new research facility at the U.S. Army Medical Research Institute for Infectious Diseases (USAMRIID) at Fort Detrick, MD. The total projected cost of the facility is approximately \$1 billion. Within the Chemical and Biological Defense Program (CBDP), there is a significant increase for advanced technology development (\$95 million), and corresponding decreases in basic (\$30 million) and applied (\$74 million) research, largely due to progression of the Program's "Transformational Medical Technologies Initiative" (TMTI). TMTI was developed in response to decision made in the [2006 Quadrennial Defense Review](#) (QDR) to reallocate over \$1.5 billion in funding within CBDP from FY2006 – FY2010 in order to "develop broad-spectrum medical countermeasures against advanced bio-terror threats, including genetically engineered intracellular bacterial pathogens and hemorrhagic fevers." Most TMTI funds are directed to non-governmental efforts, with nearly 75% of initial funding going to the pharmaceutical and biotechnology industries ([Transformational Medical Technologies Initiative FY 2007 Congressional Report](#)). TMTI is unlikely to meet the funding goal set by the QDR, having received only \$340 million in its first three years. In FY2009, the Department requests an additional \$241 million for TMTI, an increase of \$97 million over FY2008 levels.

Funding continues to grow for biological threat reduction activities within the Cooperative Threat Reduction program, with an overall increase of \$26 million (16%) over FY2008 levels. 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" ([Cooperative Threat Reduction Annual Report to Congress FY2008](#)). A recent Congressionally mandated report ([http://www.nap.edu/catalog.php?record\\_id=12005](http://www.nap.edu/catalog.php?record_id=12005)) on the Biological Threat Reduction Program by a committee of the National Academies of Science expressed significant concern about the disengagement with Russia, which it ascribed to mutual frustrations and distrust in both countries, stating that "[t]here are considerable risks entailed in not participating in research engagement activities but instead simply remaining on the sidelines and speculating as to what may be taking place in facilities where research on dangerous pathogens is carried out." The Committee strongly recommended efforts to re-establish cooperation with Russia.

Department of Defense (DOD) <sup>a</sup> (in millions)	FY2001-FY2006 Total	FY2007 actual	FY2008 request	FY2008 estimate	FY2009 request	Total
<b>Research, Development, Test, and Evaluation (RDT&amp;E)</b>						
Department of the Army						
Medical Materiel/Medical Biological Defense Equipment	93	22	25	28	35	178
Defense-Wide						
Chemical and Biological Defense Program						
Basic Research <sup>b</sup>	260	95	60	71	41	467
Applied Research <sup>c</sup>	694	182	226	208	134	1218
Advanced Technology Development <sup>d</sup>	676	201	198	211	306	1394
Advanced Component Development and Prototypes <sup>e</sup>	548	58	21	31	29	666
System Development and Demonstration <sup>f</sup>	758	169	215	219	260	1406
RDT&E Management Support	334	101	99	98	100	633
Operational Systems Development	12	7	8	8	10	37
Defense Advanced Research Projects Agency (DARPA): Biological Warfare Defense	906	100	99	72	66	1144
Military Construction						
Tricare Management Activity: New USAMRIID Facility at Fort Detrick, MD <sup>g</sup>	21	29	150	150	209	409
<b>Subtotal, RDT&amp;E</b>	<b>4302</b>	<b>964</b>	<b>1101</b>	<b>1096</b>	<b>1190</b>	<b>7552</b>

## Procurement, Defense-Wide

### Chemical and Biological Defense<sup>h</sup>

Installation Force Protection	284	88	83	84	85	541
Individual Protection	210	58	87	88	43	399
Decontamination	88	19	29	41	22	170
Joint Biological Defense Program	713	47	56	56	39	855
Collective Protection	276	43	39	40	38	397
Contamination Avoidance	925	170	160	142	157	1394
<b>Subtotal, Procurement</b>	<b>2496</b>	<b>425</b>	<b>454</b>	<b>451</b>	<b>384</b>	<b>3756</b>
<b>Cooperative Threat Reduction (CTR)</b>						
<b>Program: Biological Threat Reduction<sup>i</sup></b>						
Biological Threat Reduction <sup>j</sup>						
Biological Weapons Infrastructure Elimination	29	1	0	0	0	30
Cooperative Biological Research	37	6	19	19	24	86
Threat Assessment and Disease Response <sup>k</sup>	167	66	126	139	160	559
Biosecurity and Biosafety	27					
<b>Subtotal, CTR Biological Threat Reduction Program</b>	<b>291<sup>k</sup></b>	<b>72</b>	<b>144</b>	<b>158</b>	<b>184</b>	<b>705</b>
<b>Total, Defense Department</b>	<b>7089</b>	<b>1,469<sup>l</sup></b>	<b>1,699</b>	<b>1,705</b>	<b>1,758</b>	<b>12,022</b>

<sup>a</sup> Sources: RDT&E Programs (R-1), Department of Defense Budget; Chemical Biological Defense Program Budget Estimates; Research, Development, Test and Evaluation, Defense-Wide; Research, Development, Test and Evaluation, Defense-Wide; Defense Advanced Research Projects Agency; Construction Programs (C-1), Department of Defense Budget; Procurement, Defense-Wide Chemical and Biological Defense, Program Budget Estimates; Former Soviet Union Threat Reduction.

<sup>b</sup>Funding for program TC1 for medical countermeasures to chemical agents not included.

<sup>c</sup>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.

<sup>d</sup>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.

<sup>e</sup>Called "Demonstration and Validation" in Congressional appropriations bills. Funding for programs MC4 and MR4 for medical countermeasures to chemical and radiological agents, for program CP4, and for other chemical weapons specific funding not included.

<sup>f</sup>Called "Engineering and Manufacturing Development" in Congressional appropriations bills. 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.

<sup>g</sup> In 2006, Congress authorized a total of \$550m for "stage 1" of the new USAMRIID facility.

<sup>h</sup>Funding for procurement related only to defense against chemical and radiological agents not included.

<sup>i</sup> Prior to FY2008, this program was called the "Biological Weapons Proliferation Prevention (BWPP). Sources: FY2003 - FY 2009 Defense Wide Operations and Maintenance Budget Justification, 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.

<sup>j</sup> 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.

<sup>k</sup> This number includes funding not attributed to specific programs in FY2001 and FY2002.

<sup>l</sup> includes \$8 Million for the Army National Guard Strategic Biodefense Initiative



## DOE

The Department of Energy's FY2009 request for bioweapons-related activities is approximately \$6 million, a decrease of \$1 million from the FY 2008 estimate. Responsibility for the Global Security Engagement and Cooperation biosecurity work will transfer from DOE to the Department of State's Biosecurity Engagement program in FY2008.

Department of Energy (DOE) <sup>a</sup> (in millions)	FY2001-FY2006 Total	FY2007 estimate	FY2008 request	FY2008 estimate	FY2009 request	Total
Non-Proliferation and Verification R&D: Chemical and Biological National Security Program <sup>b, c</sup>	125 <sup>c</sup>					125
<b>Non-Proliferation and International Security (NIS)</b>						
Export Control Programs <sup>d</sup>	4	2	2	2	2	10
Global Security Engagement and Cooperation (GSEC): Confidence Building Measures <sup>e</sup>	n/a	1	1	1	0	2
GSEC: Global Initiatives for Proliferation Prevention (GIPP) <sup>f</sup>	25	3	2	4	4	36
Non-Proliferation Treaties	n/a	1	1	1	1	3
CB Detection; National Cntr for Biodefense at George Mason University <sup>g</sup>	6					6
<b>Total, DOE</b>	<b>160</b>	<b>7</b>	<b>5</b>	<b>8</b>	<b>7</b>	<b>182</b>

<sup>a</sup> Sources: FY2003 - FY2009 DOE Congressional Budget Request, Volume I: National Nuclear Security Administration; unless noted (NNSA)

<sup>b</sup> Transferred to the Department of Homeland Security in FY2003.

<sup>c</sup> From FY 2002 Congressional Budget for Department of Energy and CRS Report ([RL31914](#)): Research and Development in the Department of Homeland Security (6/20/03) These figures may include more than biodefense-related money.

<sup>d</sup> 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 these biological export control applications that NNSA reviews for the Department of Commerce. For FY2007 and FY2008, budget numbers were provided by NNSA (personal communication).

<sup>e</sup> Information provided by NNSA (personal communication)

<sup>f</sup> 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, 14% in FY2008 and 15% in FY2009. (NNSA, personal communication)

<sup>g</sup> Sources: FY2006 Appropriations Conference Report [H.109-275](#): \$5m for CB detection R&D, \$1m for National Center.

## DHHS

The Department of Health and Human Services spends more on biodefense-related activities than all other federal agencies combined. The Department's request for FY2009 is \$4.171 billion, an increase of \$172 million (4%) over FY 2008. The National Institutes of Health (NIH) continues to garner the greatest portion of the HHS budget (\$1.636 billion, or 39% of total HHS funding), but does not receive a significant increase in FY2009.

The Food and Drug Administration (FDA) requests a significant increase in funds (plus \$42 million) for protection of the food supply from a terrorist attack. According to HHS, the increase will be used to support actions consistent with the [FDA Food Protection Plan](#), a strategy initiated in 2007 to better coordinate food safety (protection from unintentional contamination of the food supply) and food defense (protection from deliberate contamination). Problems and deficiencies in the U.S. food safety system, including insufficient funding and poor coordination among agencies, are widely recognized (See, for example, Congressional Research Service Report [RL34152](#)). A recent [GAO Report](#) found that while the FDA's food safety workload has increased over the past decade, its staff and funding levels have not kept pace. Whether the additional funding for food defense in FY2009 will significantly redress these problems is questionable: funding for *food defense* has increased continuously since FY2001 and now accounts for nearly 40% of all FDA spending on food-related activities, even as funding for food safety has remained essentially flat.

The Office of the Secretary requests \$178 million more than it received in FY2008. This 27% increase is largely due to a major increase in funding (plus \$148 million) for the [Biomedical Advanced Research and Development Authority](#) (BARDA). Established by the Pandemic and All-Hazards Preparedness Act of 2006 ([P.L. 109-417](#)), BARDA is responsible for managing the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE), an interagency effort to prioritize, develop, stockpile and deploy medical countermeasures to chemical, biological, radiological and nuclear (CBRN) agents that could be used in deliberate attacks, and to naturally-occurring emerging infectious diseases, including pandemic influenza. BARDA is also specifically responsible for managing advanced research, development and procurement of medical countermeasures to CBRN agents under Project BioShield, a program that has come under scrutiny due to the selection of inappropriate contractors and poor prioritizing, management and execution. ([GAO Report GAO-08-208T](#), [CRS Report RS21507](#))

Other notable changes within the Office of the Secretary include an increase in funding for preparedness and emergency operations activities (plus \$18 million) and a new program for the advanced development of ventilators (plus \$25 million). It should be noted that previous requests for increased funding for advanced research and development and preparedness and emergency operations have been rejected by Congress. Funding for hospital preparedness grants is cut by nearly 15% (\$61 million). However, according to the Department, month-to-month funding for hospitals will not decrease, as this smaller figure is attributed to a one-time realignment of the grant period to better coordinate grants with State budget cycles. Finally, the Office of the Secretary also requested an 8-fold increase (to \$30 million) for revitalization and transformation of the Commissioned Corps, an initiative meant to create a more qualified, highly trained, and fully deployable force of healthcare professionals for emergency events within the United States and throughout the world.

The Centers for Disease Control and Prevention (CDC) is the only branch of HHS to request substantially less (minus \$61 million overall) for biodefense-related activities in FY 2009. Funding for upgrading state and local capacity is reduced by \$137 million for unspecified reasons. This continues a downward trend that began in FY2003 and has been accompanied by significant criticism. A recent [report](#) suggests that while states have significantly improved their preparedness for public health emergencies since 2001, decreased funding will hinder efforts to make further necessary improvements and to sustain the improvements made thus far. The American Public Health Association (APHA) has released [similar comments](#) and states that the nations ability to respond to public health threats is challenged by decreases in funding. Requests for all other CDC biodefense activities increase, most notably the Biosurveillance Initiative (plus \$48 million). This agency-wide initiative is meant to reduce the time of detection and response initiation after a biological attack. Under this initiative the CDC collaborates with DHS by providing human and animal health data to the National Bio-Surveillance Integration System (NBIS)

<b>Department of Health and Human Services (DHHS)<sup>a</sup> (in millions)</b>	<b>FY2001-FY2006 Total</b>	<b>FY2007 estimate</b>	<b>FY2008 request</b>	<b>FY2008 estimate</b>	<b>FY2009 request</b>	<b>Total</b>
<b>Food and Drug Administration (FDA)</b>						
Food Safety and Defense <sup>b</sup>	620	172	178	171	213	1176
Medical Product Countermeasures – Vaccines, Drugs, and Diagnostics	272	57	57	56	67	452
Physical Security	43	7	7	7	7	64
<b>Subtotal, FDA</b>	<b>935</b>	<b>236</b>	<b>242</b>	<b>234</b>	<b>287</b>	<b>1692</b>
<b>Health Resources and Services Administration (HRSA)<sup>c</sup></b>						
Bioterrorism Hospital Preparedness	2125					2125
Bioterrorism Training and Curriculum Development	105					105
Smallpox Compensation	42					42
<b>Subtotal, HRSA</b>	<b>2271</b>					<b>2271</b>
<b>Centers for Disease Control and Prevention (CDC)<sup>d</sup></b>						
CDC Physical Security and Facilities	69					69
Upgrading State and Local Capacity	4606	767	698	746	609	6728
Biosurveillance Initiative	234 <sup>e</sup>	71	88	53	101	459
Upgrading CDC Capacity	753	123	137	121	131	1128
Anthrax Research	103	12	0	8	8	131
Strategic National Stockpile <sup>f</sup>	2085	496	581	552	570	3703
Supplemental appropriations (smallpox)	612					612
Independent Studies	15					15
Other (Planning for Preparedness and Response; Deterrence)	29					29
<b>Subtotal, (CDC)</b>	<b>8504</b>	<b>1,469</b>	<b>1504</b>	<b>1480</b>	<b>1419</b>	<b>12872</b>
<b>National Institutes of Health (NIH)</b>						
Research	5770	1,624	1,628	1,633	1,635	10662
Extramural laboratory construction (physical security and facilities) (at universities and institutions)	552	25				577
Intramural physical security and facilities	462					462
rPA Anthrax Vaccine Intermediate Scaleup, MVA Smallpox Vaccine Intermediate Scaleup <sup>g</sup>	360					360
NSABB <sup>h</sup>	3	1	1	1	1	6
<b>Subtotal, National Institutes of Health (NIH)</b>	<b>7147</b>	<b>1,650</b>	<b>1,629</b>	<b>1,634</b>	<b>1,636</b>	<b>12067</b>
<b>Office of the Secretary (OS)</b>						
Office of Public Health and Emergency Preparedness (OPHEP) <sup>i</sup>	277					277
Office of the Assistant Secretary for Preparedness and Response (ASPR) <sup>j</sup>						
Operations		8	13	10	14	32
Preparedness and Emergency Operations		14	48	17	35	66
National Disaster Medical System <sup>k</sup>		47	53	46	53	146
Hospital Preparedness Grants <sup>c</sup>		474	414	423	362	1259
Training and Curriculum Development <sup>c</sup>		21	0	0	0	21
Advanced Research and Development		104	189	102	250	456

Advanced development of Ventilators				25	25	
BioShield Management	16	22	21	22	59	
International Early Warning Surveillance	9	9	9	9	27	
Policy, Strategic Planning, and Communication		3	4	5	9	
Media/Public Information Campaign	3	2	n/a	0	3	
Subtotal, ASPR	694	751	633	776	2103	
Metropolitan Medical Response System (MMRS) <sup>j</sup>	89				89	
Healthcare Provider Credentialing			3	0	3	
Medical Reserve Corps	43	10	15	10	78	
Office of Security and Strategic Information			3	3	8	
Revitalization/Transformation of Commissioned Corps	10	4	4	4	48	
Subtotal, Office of the Secretary	418	708	776	651	2606	
Total, DHHS	19280 <sup>m</sup>	4,063	4,151	3,999	4,171	31513 <sup>m</sup>

<sup>a</sup> Sources: DHHS Budget-in-Briefs for FY2003-FY2009 unless otherwise noted.

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

<sup>c</sup> Programs transferred from HRSA to the Office of the Assistant Secretary for Preparedness and Response in FY2007.

<sup>d</sup> Includes information from the 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](http://www.cdc.gov/fmo/PDFs/FY_2007_JR_Detail_Table.pdf)).

<sup>e</sup> Includes \$55M transferred from Department of Defense in 2006.

<sup>f</sup> Transferred to DHS during FY2003 and transferred back to DHHS at the beginning of FY2005; FY2004 funding is therefore included in the DHS budget table. The SNS primarily contains medical countermeasures to biological agents, but also includes some countermeasures to chemical and rad/nuc agents. (Prior to FY2003, the SNS was known as the National Pharmaceutical Stockpile.)

<sup>g</sup> The MVA and rPA Vaccine Intermediate Scaleup were plans in FY2004 and FY2005 to move the anthrax recombinant protective antigen (rPA) and modified vaccinia Ankara (MVA) vaccines "from late-stage development to production for research purposes." (see: <http://www.niaid.nih.gov/ncn/budget/anthraxvac.htm>) All references to these initiatives disappear after the FY2005 Budget-in-Brief for HHS, so the figure provided here is an estimate.

<sup>h</sup> Established mid-2004; funding as estimated by the NSABB charter

<sup>i</sup> 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. Information on research funding in subsequent years is not available.

<sup>j</sup> Replaces OPHEP. Created in FY2007 pursuant to the Pandemic and All-Hazards Preparedness Act (P.L. 109-417).

<sup>k</sup> Transferred from DHS in FY2007. FY2007 and FY2008 data from the FY2009 HHS Budget-in-Brief.

<sup>l</sup> Transferred to DHS in FY2004.

<sup>m</sup> Includes \$5 million for the Agency for Healthcare Research and Quality in FY2003.

## DHS

The Department of Homeland Security's budget request for biodefense-related activities is estimated to be \$399 million, a 4% increase from FY 2008. Challenges in determining biodefense-related funding at DHS are reflected in the footnotes accompanying the table. DHS requests an increase in funding for nearly all of its biodefense programs. This includes an increase of \$35 million (45%) in the Office of Health Affairs for the procurement and deployment of a new generation of automated detection sensors. BioWatch detectors have been installed in at least 31 cities to date (the precise number and identity are undisclosed). In FY2008 Congress expressed concern that BioWatch might not be the most cost efficient and effective way of detecting biological attacks, and mandated a National Academy of Sciences study on the effectiveness and reliability of the BioWatch program before additional funding for procurement will be approved by the house ([H. Report 110-181](#)). Funding for biodefense activities in the Science and Technology Directorate will increase by \$13 million, largely due to increased funding for biodefense facilities, including \$33 million to begin operations at the National Biodefense Analysis and Countermeasures Center (NBACC).

As it has every year since FY2004, DHS proposes to eliminate funding for the Metropolitan Medical Response System (MMRS). In FY2008, Congress not only continued to reject DHS proposals to eliminate this program, it increased funding to \$41 million. FY 2009 funding of \$2.175 billion for Project BioShield reflects the amount appropriated in FY 2004, which was to be made available in FY 2009. Project BioShield is a DHS/HHS partnership for acquiring medical countermeasures to biological chemical, radiological and nuclear agents deemed to pose a significant threat to public health due to a terrorist attack. DHS oversees the Special Reserve Fund and provides Material Threat Determinations to allocate funding for agent-specific countermeasure development, while HHS acts as the procuring authority.

Department of Homeland Security (DHS) <sup>a</sup> (in millions)	FY2003-FY2006 Total	FY2007 actual	FY2008 request	FY2008 estimate	FY2009 request	Total
<b>FEMA<sup>b</sup></b>						
National Disaster Medical System (NDMS)	152					152
Strategic National Stockpile <sup>c</sup>	398					398
Metropolitan Medical Response System (MMRS)	143	33	0	41	0	217
<b>Subtotal, FEMA</b>	<b>693</b>	<b>33</b>	<b>0</b>	<b>41</b>	<b>0</b>	<b>767</b>
<b>Office of Health Affairs</b>						
National Biosurveillance Integration System (NBIS) <sup>d</sup>	27	8	11	8	8	51
Biowatch <sup>e</sup>			79	77	112	189
Veterinary and Agrodefense and Food Safety			1	1	1	2
Office of Chief Medical Officer	2	5				7
National Biodefense Architecture					2	2
Management and other expenses		6	22	25	30	61
<b>Subtotal, Office of Health Affairs<sup>f</sup></b>	<b>29</b>	<b>19</b>	<b>113</b>	<b>111</b>	<b>153</b>	<b>312</b>
<b>Science and Technology Directorate</b>						
University Programs <sup>g</sup>	43	22				65
Chemical and Biological Division <sup>h</sup>						
BioWatch <sup>e</sup>	171	78	42	28	n/a	277
Plum Island Animal Disease Center <sup>i</sup>	78					78
Joint AgroTerror Defense Office (JADO)		2	n/a	n/a	n/a	2
National Bio and Agrodefense Facility (NBAF) <sup>j</sup>	23					23
<b>Subtotal, Chemical and Biological Division<sup>k</sup></b>	<b>1301</b>	<b>187</b>	<b>176</b>	<b>155</b>	<b>140</b>	<b>1783</b>
Laboratory Facilities (construction, management and operations) <sup>l</sup>						
Plum Island		51	44	44	31	126

National Biodefense Analysis and Countermeasures Center (NBACC)	141 <sup>m</sup>	14	17	17	33	205
NBAF		23	11	11	36	70
Subtotal, Laboratory Facilities	141	88	72	72	100	401
Transition <sup>l</sup>		2	n/a	n/a	n/a	>2
Innovation <sup>l</sup>		2	n/a	3	3	8
Testing & Evaluation and Standards <sup>l</sup>		1	n/a	3	3	7
<b>Subtotal, Science and Technology Directorate</b>	<b>1485</b>	<b>302</b>	<b>248</b>	<b>233</b>	<b>246</b>	<b>2266</b>
<b>Total, DHS</b>	<b>2207</b>	<b>354</b>	<b>361</b>	<b>385</b>	<b>399</b>	<b>3,345</b>
<b>DHS - Project BioShield<sup>n</sup></b>	<b>3354</b>				<b>2,175</b>	<b>5529</b>

<sup>a</sup> Sources: DHS Budgets-in-Brief for FY2005 - FY2009 unless otherwise noted.

<sup>b</sup> These programs may include some funding that is not biodefense-related. MMRS was transferred from the DHHS Office of Public Health Emergency Preparedness in FY2004. The NDMS was transferred to the HHS Office of the Secretary in January 2007. Additional Sources: White House FY2006 DHS Budget Appendix, at <http://www.whitehouse.gov/omb/budget/fy2006/pdf/appendix/dhs.pdf>, DHS Appropriations Conference Reports [H Rept 108-280](#), [H Rept 108-774](#), [H Rept 109-241](#) and [H Rept 109-699](#)

<sup>c</sup> Located at DHS in FY2004 only.

<sup>d</sup> 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 [GAO Report GAO-05-308](#); FY2006 from CRS Report [RL33248](#) (May 10, 2006); FY2008 from CRS Report [RL34004](#) (August 2007).

<sup>e</sup> Biowatch operations were transferred from the Science and Technology Directorate in FY2007, with the first appropriation under OHA in FY2008. Science and Technology will continue to be responsible for further technological development of the Biowatch system. FY2007 data from [S Rept 110-84](#). FY2008 data from [H Rept 110-181](#) and [S Rept 110-84](#).

<sup>f</sup> FY2007 data from FY2009 Budget in Brief and Senate Report [110-84](#), FY2008 and FY2009 excludes approximately \$1.3 million for work force health (from FY2008 Budget-in-Brief) and \$2.6 million for chemical agent detection (Senate Report [110-84](#)).

<sup>g</sup> For 3-year grants of \$18m to the Texas A&M University for the National Center for Foreign Animal and Zoonotic Disease Defense and \$15m to the University of Minnesota's University Center for Post-Harvest Food Protection and Defense for Agro-Security in FY2004; \$10 million over 5 years for the Center for Advancing Microbial Risk Assessment at Michigan State University in FY2005 (a joint EPA, DHS center) (Source: [http://www.epa.gov/aging/press/epanews/2005/2005\\_1024\\_2.htm](http://www.epa.gov/aging/press/epanews/2005/2005_1024_2.htm)). Funding for the first two Centers was renewed for three years in FY2007. The FY2007 figure here was calculated based on numbers available in the DHS S&T Five-Year Research and Development Plan FY2007-2011 (May 2007).

<sup>h</sup> The Chemical and Biological Division was created during a reorganization of the S&T Directorate in FY2006. Previously, Biological Countermeasures and Chemical Countermeasures were on separate funding lines.

<sup>i</sup> Sources: Congressional Research Service Report [RS21270](#) (June 20, 2003); Government Accountability Report [GAO-06-132](#); FY2005 Budget-in-Brief, Department of Homeland Security Appropriations Bill, 2005: [H Rept 108-541](#), and Department of Homeland Security Appropriations Bill: [S Rept 108-280](#).

<sup>j</sup> From FY2006 DHS Appropriations Conference Report [H Rept 109-241](#), FY2007 DHS Appropriations Conference Report [H Rept 109-699](#) (may be high since not adjusted for rescission discussed in footnote n), [H Rept 110-181](#) and [S Rept 110-84](#), and [FY2009 Budget in Brief](#). NBAF was transferred to the Office of the Director of Research (Laboratory Facilities) in FY2007.

<sup>k</sup> Funding data for the Biological and Chemical Division vary depending on source. For example, in two different DHS documents, actual FY2004 spending (including NBACC) is reported as either \$179 million ([FY2006 DHS Performance Budget Overview](#)) or \$471 million ([FY2006 DHS Science & Technology Directorate Congressional Justification](#)). Both of these figures differ from the level of enacted funding reported as \$198 million (including NBACC) in [S Rept 108-280](#) and [H Rept 108-280](#). A single document lists two different totals (\$425 and \$515 million) for actual FY2006 spending (FY 2008 DHS Science & Technology Directorate Congressional Justification (Research Development Acquisition & Operations)). The data here are best estimates of enacted funding based on the following sources: FY2003: Congressional Research Service report [RS21270](#) (22 August 2006). FY2004: [S Rept 108-280](#) and [H Rept 108-280](#). FY2005: [S Rept 109-83](#), the FY2007 DHS Science and Technology Congressional Justification Overview, and the FY2007 DHS Science and Technology Congressional Justification Overview. FY2006: [S Rept 109-273](#), the FY2007 Budget-in-Brief, and the FY2007 DHS S&T Congressional Justification Overview; FY2007: Amount enacted after budget rescission, according to [S Rept 110-84](#). Congress appropriated \$350 million for Bio Countermeasures in FY2007 ([H Rept 109-699](#)). Of this, \$255 million was realigned to the new Chemical and Biological Division (which also received \$58 million from the Chemical Countermeasures Portfolio), \$88 million to Laboratory Facilities, and \$8 million to other programs by the 2006 reorganization of the Directorate (FY2008 DHS S&T Congressional Justification (Research, Development, Acquisition and Operations volume)). Congress also rescinded \$125 million in unobligated prior year funds from the total FY2007 S&T appropriation. DHS budget documents do not indicate how this rescission was allocated among programs, but [S Rept 110-84](#) does. The figure reported here assumes that the rescission was applied proportionately to the Biological and Chemical components of the Division. According to the Annual Performance Report for FY2007 (dated February 2008), actual spending by the Division was \$344 million, translating to approximately \$280 million for the Biological component. FY2008 and FY2009: FY 2009 DHS Science & Technology Directorate Congressional Justification (Research Development Acquisition & Operations).

<sup>l</sup> Data are biodefense-specific. From FY2008 Congressional Justification, Strategic Context, the FY 2009 DHS Science & Technology Directorate Congressional Justification (Research Development Acquisition & Operations) and the DHS S&T Five-Year Research and Development Plan for Fiscal Years 2007-2011 (May 2007).

<sup>m</sup> Sources: FY2005 [Senate Report 108-280](#), FY2004 and FY2005 DHS Appropriations Conference Reports [H Rept 108-280](#) and [H Rept 108-774](#). (Congressional Research Service Report [RL32891](#) (February 15, 2007))

<sup>n</sup> [The Project Bioshield Act of 2004](#) authorized \$5.593 billion for biodefense countermeasures for FY2004 through FY2013, as follows: \$3.418 billion for FY2004 through FY2008, and \$2.175 billion for FY2009 through FY2013 (FY2004 DHS Appropriations Conference Report ([H Rept 108-280](#))). Of this, \$885 million was appropriated in FY2004 ([P.L. 108-90](#)), and \$2.508 billion was appropriated in FY2005 (after an across-the-board rescission of 0.8% in all FY2005 budgets.) The figure reported here is further reduced by \$39 million used for purchases of radiological/nuclear countermeasures (CRS Report [RL33907](#), April 13, 2007). In budget documents, Project Bioshield is listed as "Biodefense countermeasures."

## Department of State

The FY 2009 funding request for the Department of State is \$48 million, approximately 2% less than the FY2008 estimate. This decrease is due to a reduction in funding (\$6 million) for the Chemical/Biological Program within Worldwide Security Upgrades. The Global Threat Reduction Program receives an estimated 14% increase in funding for bioweapons-related activities, includes the Bio-Chem Redirect Program, the Bio-Industry Initiative, and the Global Biosecurity Engagement Program. The Bio-Chem Redirect Program is a non-proliferation program that engages the biological and chemical scientists of the former Soviet Union (excluding Russia) in transparent and sustainable civilian research projects in order to prevent them from defecting to states with biological and chemical weapons ambitions. The Bio-Industry Initiative is a joint effort between the United States and Russia to reduce terrorist access to biological weapons. It transforms former Soviet biological production facilities so that they may be used for civilian purposes and promotes research and development of vaccines for highly infectious diseases. The Global Biosecurity Engagement Program engages nations around the world to promote the peaceful and responsible use of biological materials through the training of scientists, development and implementation of infectious disease surveillance programs, and grant assistance.

Department of State <sup>a</sup> (in millions)	FY2001-FY2006 Total	FY2007 estimate	FY2008 request	FY2008 estimate	FY2009 request	Total
Worldwide Security Upgrades: Chemical/ Biological Program <sup>b</sup>	69	11	11	11	5	96
NADR Programs <sup>c</sup>						
Non-Proliferation and Disarmament Fund: Biological and Chemical Weapons Terrorism Initiative <sup>d</sup>	14	n/a	n/a			14
Global Threat Reduction Program <sup>e</sup>						
Bio-Chem Redirect	103	6	6	4	5	118
Bio-Industry Initiative	45	7	7	5	6	63
Global Biosecurity Engagement Program	4	8	8	26	29	67
Subtotal, NADR	<b>166</b>	<b>21</b>	<b>21</b>	<b>35</b>	<b>40</b>	<b>262</b>
Bureau of International Security and Non-Proliferation: Chemical and Biological Weapons Threat Reduction <sup>f</sup>	2	2	3	2	2	8
Bureau of Verification, Compliance and Implementation: Office of BW Affairs <sup>f</sup>	1	1	1	1	1	4
<b>Total, State Department</b>	<b>238</b>	<b>35</b>	<b>36</b>	<b>49</b>	<b>48</b>	<b>370</b>

<sup>a</sup> 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 - FY2009; Government Accountability Office Reports GAO-04-521 and GAO-05-157, and Congressional Research Service Report RL31957.

<sup>b</sup> May include funding that is not biodefense-related.

<sup>c</sup> NADR: Non-Proliferation, Anti-terrorism, Demining and Related Programs.

<sup>d</sup> Source: [FY2004](#) and [FY2005](#) Department of State Congressional Budget Justifications, funding estimated by multiplying the request by the ratio of actual to requested total NADR-NDF funding, (actual funding levels being reported in the FY2006 and FY2007 Budget Justifications respectively). Funding appears to have continued at least through FY2007, but amounts are not available.

<sup>e</sup> Formerly called Nonproliferation of WMD Expertise (NWMDE), the GTRP includes 5 programs: Bio-Chem Redirect, the BioIndustry Initiative (BII), the Global Biosecurity Engagement Program, Science Centers, and the WMD Scientist Redirection Program in Iraq. Most GTRP bioweapons-related funding is provided by the first three programs (personal communication). FY2006 and FY2007 figures were found in the National Research Council Report: [Biological Threat Reduction Program of the Department of Defense: From Foreign Assistance to Sustainable Partnerships, 2007](#). Specific data is not available for FY2008 (with the exception of the Bio-Engagement Program, source: [P.L. 110-161](#)) or 2009; an estimate is provided based on comparing the overall GTRP funding request for FY2008 and 2009 (less the Bio-Engagement Program) to actual GTRP funding in FY2007 (all data found in the [FY2009 International Affairs Congressional Justification](#).)

<sup>f</sup> Funding data for these and predecessor offices prior to FY2006 is not available.

## Environmental Protection Agency

The FY 2009 biodefense-related funding request for the Environmental Protection Agency is \$150 million, an increase of 22% over the FY 2008 appropriation. The request includes an increase of \$16 million for Science and Technology efforts to further support the Water Security Initiative, the Water Alliance for Threat Reduction and the Environmental Protection Agency's Homeland Security Research Program. The increase is equivalent to that requested, but not received from Congress, in FY 2008.

<b>Environmental Protection Agency (in millions)<sup>a</sup></b>	<b>FY2001-FY2006 Total</b>	<b>FY2007 estimate</b>	<b>FY2008 request</b>	<b>FY2008 estimate</b>	<b>FY2009 request</b>	<b>Total</b>
Capital Hill Anthrax Cleanup	20 <sup>b</sup>					20
Emergency Supplemental <sup>c</sup>						
Clean and Safe Water	100					100
Waste Management	42					42
Subtotal, Emergency Supplemental	142					142
Communication and Information – Environmental Program and Management	16	5	7	7	7	43
Categorical Grants to States: Water Safety	24	4	5	5	5	38
Critical Infrastructure Protection						
Science and Technology	65	13	26	15	27	120
Environmental Program and Management	23	5	8	8	7	35
Superfund	3	1	2	2	2	8
Subtotal, Critical Infrastructure Protection	91	19	35	25	36	171
Preparedness, Response and Recovery						
Science and Technology	87	33	41	38	42	200
Environmental Program and Management	7	2	3	3	3	15
Superfund	211	40	45	45	57	353
Subtotal, Preparedness, Response and Recovery	304	75	89	86	102	567
<b>Total, EPA</b>	<b>597</b>	<b>103</b>	<b>136</b>	<b>123</b>	<b>150</b>	<b>973</b>

<sup>a</sup> From the EPA FY2003 - FY2009 Congressional Justifications, unless noted. Excludes funding for Homeland Security: Protection of EPA Personnel and Facilities.

<sup>b</sup> This figure reflects a FY2001 emergency supplemental funding.

<sup>c</sup> FY2002 Excludes \$30 million in Emergency Supplemental funds for EPA facility security.



## Department of Commerce

The FY2009 Department of Commerce budget request for biodefense-related activities is \$4 million, a figure consistent with appropriated funding since FY2007.

## National Science Foundation

The National Science Foundation requests \$15 million for FY2009 biodefense activities, a reduction of 66% from FY2008. This appears to be due to the elimination of biodefense funding within its Ecology of Infectious Diseases program.

## The Intelligence Community

Although the Federal Bureau of Investigation (FBI), the Central Intelligence Agency, and the Office of the Director of National Intelligence (ODNI) all have bioweapons-related programs and activities, little information can be found regarding these activities and their funding. The ODNI is said to be creating the Intelligence Advanced Research Projects Activity (IARPA). IARPA will likely have a strong focus on the biological sciences and, according to one expert, may have a budget of several hundred million dollars (Nature. Vol. 451. 24 January 2008, p 392).

Other Government Agencies (in millions)	FY2001-FY2006 Total	FY2007 estimate	FY2008 request	FY2008 estimate	FY2009 request	Total
Department of Commerce <sup>a</sup>	15	4	4	4	4	27
Department of Veterans Affairs (VA):						
Medical Research -- Emerging Pathogens/Bio-terrorism <sup>b</sup>	59	0.3	0.3	0.3	0.3	60
<b>National Science Foundation (NSF)<sup>c</sup></b>						
Microbial Genome Sequencing	94	18	15	15	15	142
Ecology of Infectious Diseases	30	10	10	10	0	50
<b>Total, NSF</b>	124	28	25	25	15	192
<b>United States Postal Service (USPS)</b>						
Response to anthrax <sup>d</sup>	175					175
Protection and Screening <sup>e</sup>	1090					1090
<b>Total, USPS</b>	1265					1265
Intelligence Community	n/a	n/a	n/a	n/a	n/a	n/a

<sup>a</sup> In this analysis, bioweapons-related funding is estimated based on multiplying the actual (FY2001-FY2007), estimated (FY2008), or requested (FY2009) appropriation for the Department of Commerce's Bureau of Industry and Security (BIS) export licensing budget by the fraction of export license requests processed by BIS that were for biological materials in each year (FY2001-FY2007) relevant 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 Department of Commerce Budget Appendices for FY2003 to FY2009. For FY2007-FY2009, the average fraction of the previous four years (8%) was used.

<sup>b</sup> Sources: FY2005 - FY2009 Budget Submission Summary Volumes

<sup>c</sup> Sources: NSF's Budgets-in-Brief for FY2004 - FY2009.

<sup>d</sup> From Emergency Response Fund, [P.L. 107-38](#) (11/20/01)

<sup>e</sup> 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](#)), Omnibus 2005 Appropriations bill ([P.L. 108-447](#))

## Pandemic Influenza

On November 1, 2005, President Bush requested \$7.1 billion in emergency funding for highly pathogenic avian influenza (HPAI) and pandemic influenza preparation activities; Congress subsequently appropriated \$6.1 billion of this request for FY2006 ([P.L. 109-148](#), [P.L. 109-234](#)). Funding for HPAI and pandemic influenza preparedness has since continued at lower levels. The FY2009 budget request is slightly over \$1 billion, an increase of approximately 75% from FY2008. This significant difference is attributed to Congress' rejection of \$870 million in FY 2008 for the HHS Pandemic Influenza Preparedness Plan. The FY2009 budget request includes \$507 million for HHS to continue funding the Plan, specifically to expand egg-based vaccine production capacity and to purchase medical countermeasures and medical supplies. Additionally, the HHS budget includes \$313 for ongoing activities at CDC, FDA, NIH, and the Office of the Secretary. A total of \$184 million is requested by the USDA, DoD, and Veterans Affairs.

Department or Agency (funding in \$millions)	FY2001-FY2006 Total	FY2007 estimate	FY2008 request	FY2008 estimate	FY2009 request	Total
<b>Agriculture (USDA)</b>	<b>88</b>	<b>41</b>	<b>57</b>	<b>51</b>	<b>60<sup>a</sup></b>	<b>240</b>
<b>Defense (DoD)</b>	<b>130</b>	<b>0</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>330</b>
<b>Health and Human Services (DHHS)</b>						
Public Health and Social Services Emergency Fund (PHSSEF)						
Vaccine Production and Purchase	2963		543		467	3430
Antiviral purchase	511		248			511
Advanced Development - antigen sparing/antiviral drugs	650		0			650
State/Local Preparedness	770		0			770
SNS	170		0			170
Vaccine Registry	10		0			10
Rapid Diagnostics (CDC)			79			
Management/International Surveillance and Response			78			
Countermeasures for PPE and HHS Clinical and Patient Populations					40	40
Subtotal PHSSEF	5074	0	948	76 <sup>b</sup>	507	5657
Centers for Disease Control and Prevention (CDC)	473	70	158	155	157	855
Food and Drug Administration (FDA)	20	33	51	38	42	133
National Institutes of Health (NIH)	18	35	35	34	35	122
Office of the Secretary (OS)	78		78	75	78	231
Transfer to USAID/CSH	-30					
<b>Total, DHHS</b>	<b>5633</b>	<b>138</b>	<b>1270</b>	<b>302</b>	<b>820</b>	<b>6893</b>
<b>Homeland Security (DHS)</b>	<b>47</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>47</b>
<b>Interior</b>	<b>12</b>		<b>7</b>	<b>13<sup>c</sup></b>	<b>n/a</b>	<b>25</b>
<b>State<sup>d</sup></b>	<b>41</b>				<b>2</b>	<b>43</b>
<b>United States Agency for International Development (USAID)</b>						
Global Health/Child Survival and Health Programs Fund	105	161	100	115	50	431
International Disaster and Famine Assistance/Democracy, Conflict and Humanitarian Assistance Contingency Fund	54	29	0			83
<b>Total, USAID</b>	<b>159</b>	<b>190</b>	<b>100</b>	<b>115</b>	<b>50</b>	<b>514</b>
<b>Veterans Affairs (VA)</b>	<b>27</b>		<b>17</b>	<b>24</b>	<b>24</b>	<b>75</b>
<b>Total</b>	<b>6137</b>	<b>369</b>	<b>1551</b>	<b>605</b>	<b>1056</b>	<b>8167</b>

<sup>a</sup> This number includes funding for both high and low pathogenic avian influenza as a result of the USDA's decision to put all avian influenza funding in one line item.

<sup>b</sup> This figure is included in [House Report 110-497](#) but not in the DHHS FY2009 budget-in-brief and therefore is not included in the total FY2008 estimate presented here.

<sup>c</sup> From [PL 110-28](#), HR 2206 Emergency Supplemental Approp, for HPAI surveillance

<sup>d</sup> Funding in FY2009 reflects 2 million for the Avian Influenza Action Group, which was established in May 2006 to coordinate the United States' international efforts to prepare for and respond to avian and pandemic influenza.