

## FEDERAL FUNDING FOR HEALTH SECURITY IN FY2015

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Previous articles in this series have provided funding information for federal civilian biodefense programs and programs focused on radiological and nuclear preparedness and consequence management. This year the authors have expanded the focus of the analysis to US federal funding for health security. This article provides proposed funding amounts for FY2015, estimated amounts for FY2014, and actual amounts for FY2010 through FY2013 in 5 domains critical to health security: biodefense programs, radiological and nuclear programs, chemical programs, pandemic influenza and emerging infectious disease programs, and multiple-hazard and preparedness programs.

IN JUNE 2004, THE CENTER FOR BIOSECURITY OF UPMC (now the UPMC Center for Health Security) published the first analysis of federal funding for preparedness and response programs. Titled “Billions for Biodefense,”<sup>1-6</sup> and subsequently “Federal Funding for Biodefense,”<sup>7-10</sup> the yearly analysis collected information on federal civilian biodefense programs from agency budgets and presented them together as a representation of the federal biodefense enterprise. In 2012, the Center conducted a complementary analysis that tracked funding for programs dedicated to consequence management of radiological and nuclear terrorism.<sup>11</sup>

This year the authors of this analysis have expanded the focus of the article to US government funding for health security. The Department of Health and Human Services (HHS) National Health Security Strategy defines *health security* as “a state in which a nation and its people are prepared for, protected from, and resilient in the face of health threats.”<sup>12(p3)</sup>

In order to bound this analysis, the authors used federal policy documents including the Implementation Plan of the National Health Security Strategy<sup>13</sup> and the Department of Homeland Security (DHS) National Response Framework (NRF).<sup>14</sup> These documents identify lead agencies responsible for executing various aspects of the nation’s health security mission. Review of these federal policies and related agency budgets helped determine which programs to include and which to exclude from the analysis.

This article assesses US government funding in 5 domains that are critical to strengthening health security:

- *Biodefense programs*: Federal programs focused on prevention, preparedness, and response to attacks on civilians with biological agents and accidental releases of biological material;
- *Radiological and nuclear programs*: Federal programs focused on prevention, preparedness, and consequence management of radiological and nuclear terrorism and large-scale radiological accidents;
- *Chemical programs*: Federal programs focused on prevention, preparedness, and response to large-scale acute chemical exposures of civilian populations, both intentional and accidental;
- *Pandemic influenza and emerging infectious disease programs*: Federal programs focused on preparedness and response to large, naturally occurring, and potentially destabilizing epidemics; and
- *Multiple-hazard and preparedness programs*: Federal programs focused on multiple hazards or on building infrastructure and capacity to respond to large-scale health threats.

This article differs from prior years’ funding analyses by focusing on health security, breaking funding down into discrete sections, and limiting data to actual funding

amounts in fiscal years (FY) 2010 to 2013, estimated funding for FY2014, and proposed funding for FY2015. Biodefense funding information for prior years can be found in previous funding articles.<sup>1-10</sup>

## GENERAL METHODS

This analysis of federal health security funding is an attempt to quantify and document the amount of federal funding that goes toward programs in this space. This analysis separates funding for health security into categories based on the major focus of the program being included. Choices regarding how an individual program is categorized can be difficult because of limited publicly available information describing the programs or identifying program-level funding amounts.

As in previous analyses, efforts were made to obtain funding information down to the program level, in order to be as accurate as possible. However, in some cases funding for specific programs cannot be separated from larger line items, and so those line items are either included in their entirety or they are included in the “multiple-hazard and preparedness” section of this analysis.

The authors recognize that this is not a perfect accounting of all of the federal work being done in the health security space. This analysis is a best effort to identify and account for these programs. However, there may be over- or under-accounting of certain program activities and funding.

Funding was analyzed from FY2010 through proposed funding for FY2015 using information from FY2015 federal agency budget materials as well as budget documents from prior years. Sources for this analysis include federal agency “Budgets in Brief,” agency budget justifications, and personal contacts with agency representatives to obtain and track program funding. For the purpose of this analysis, programs were broken into categories based on whether they were focused on biodefense, chemical hazards, radiological/nuclear hazards, pandemic influenza and emerging infectious diseases, or multiple-hazard and general preparedness. Programs were categorized based on their major focus, as described in budget documents or on program websites.

Programs supporting prevention, preparedness, and response, as well as related research efforts, were prioritized for inclusion in this analysis of federal health security budgets. Research programs were included if they support either medical countermeasure (MCM) research and development (R&D) or threat/risk characterization efforts. Prevention programs were included if they are explicitly intended to prevent large-scale accidents or terrorist attacks with chemical, biological, or radiological agents. Finally, federal emergency preparedness and response programs that play a role in protecting the health of US citizens in large-scale health emergencies were included.

Programs were excluded from this analysis if their focus is on routine provision of health care, occupational health and safety, or warfare between nation-states (ie, nation-state-level nonproliferation programs). Programs focused on protecting the warfighter, with no stated civilian applications now or in the future, were judged to be less applicable in a civilian context and were also excluded. Specific inclusion and exclusion criteria and methods used for each category are detailed in each section.

### Overall Findings

In total, the President’s proposed FY2015 budget includes \$12.5 billion for health security–related programs. Most health security funding would go to programs with multiple-hazard and preparedness goals and missions (\$7.7 billion, 61%), while 16% of funding (\$2.0 billion) would be dedicated to radiological and nuclear programs, 12% (\$1.5 billion) to biodefense programs, 8% (\$948 million) to pandemic influenza and emerging infectious disease programs, and 3% (\$356 million) to chemical programs (see Figure 1).

## BIODEFENSE PROGRAM FUNDING

This section focuses on funding for federal programs aimed at prevention, preparedness, response, recovery, and mitigation of deliberate biological threats against the US civilian population and of accidental releases of biological threat agents from a laboratory. In total, the President’s proposed budget includes \$1.5 billion in FY2015 for programs solely devoted to civilian biodefense. The FY2015 proposed budget would represent a decrease of \$211 million from estimated biodefense appropriations in FY2014 (see Table 1).

### Methods

Programs included in this section are solely or primarily focused on civilian biodefense as described in budget documents or on program websites. There are many programs in the federal government that address biodefense as a portion of their mission but do not focus specifically on biodefense. These programs are excluded from this section and are instead included in this analysis under the heading of “multiple-hazard and preparedness” programs.

### Funding by Federal Agency

#### Department of Defense

The Department of Defense (DoD) budget includes funding for civilian biodefense under the Defense Threat

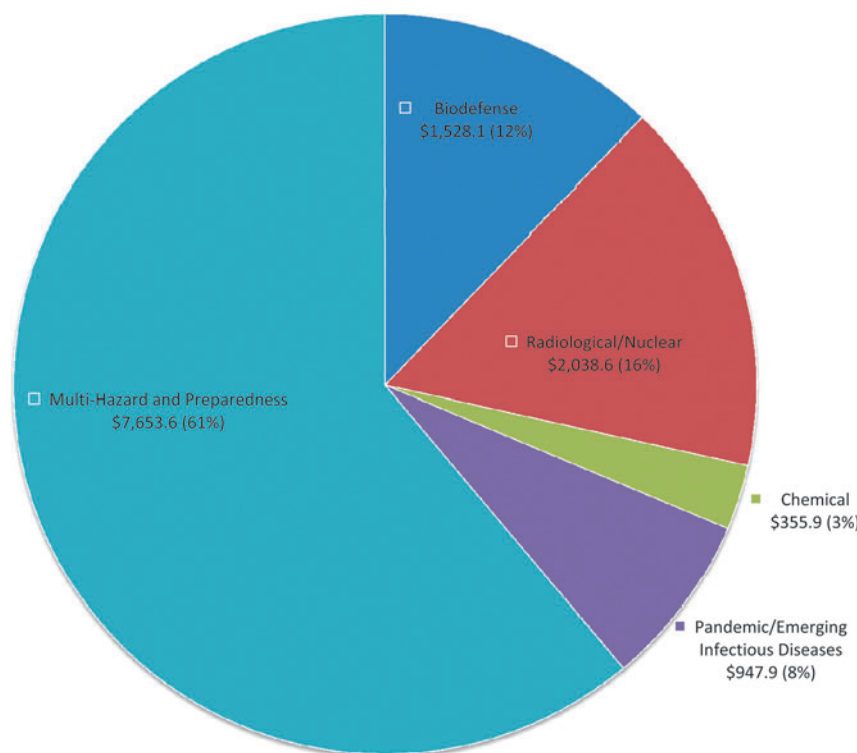


Figure 1. FY2015 Federal Health Security Funding by Program Focus (in \$millions)  
(Color graphics available online at [www.liebertonline.com/bsp](http://www.liebertonline.com/bsp))

Reduction Agency (DTRA) and the DoD-wide Chemical and Biological Defense Program (CBDP). In FY2015, the DoD budget proposes \$256.8 million for DTRA's Co-operative Biological Engagement (CBE) program, which aims to prevent proliferation of biological weapons material and expertise, improve laboratory safety, and build public health capacity internationally in order to lower the threat of a biological weapons attack in the US.<sup>15</sup> This program is included because its threat reduction and surveillance focus reduce the potential for domestic bioterrorism. The CBDP budget for civilian-applicable programs includes a number of research initiatives ranging from basic research to technology transition. In total, \$718.3 million in funding has been budgeted for DoD biodefense programs with civilian applications. This represents a proposed reduction of almost \$100 million in civilian biodefense funding from FY2014 levels.<sup>16</sup>

#### Department of Homeland Security

The FY2015 DHS budget proposes \$528.3 million in civilian biodefense program funding in the Office of Health Affairs (OHA) and the Science and Technology Directorate (S&T), a decrease from FY2014 funding levels. Programs included are the BioWatch program in OHA; bioagent detection, threat assessment, and attack resiliency programs in S&T; and funding for laboratory facilities, including the National Bio-defense Analysis and Countermeasures Center (NBACC), the National Bioforensic Analysis Center (NBFAC), the National Bio and Agro-Defense Facility (NBAF), and the Plum Island

Animal Disease Center (PIADC), also in S&T. More than half (\$300 million) of the FY2015 DHS biodefense budget is intended for construction of the new NBAF facility in Manhattan, Kansas.<sup>17,18</sup>

#### Department of Health and Human Services

In FY2015, the proposed HHS budget specific to civilian biodefense programs is \$266.6 million, all of which is for the bioterrorism portfolio at the Food and Drug Administration (FDA). This total represents a slight reduction from FY2014 and includes food defense, the Advancing Medical Countermeasures Initiative (MCMi), physical security, and operationalizing the Life Sciences and Biodefense Lab. Other programs at HHS that have biodefense as a goal, including those at the Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), and the office of the Assistant Secretary for Preparedness and Response (ASPR), are included in the "multiple-hazard and general preparedness" section of this analysis because they do not focus solely and specifically on biodefense.<sup>19,20</sup>

#### National Science Foundation

The National Science Foundation's (NSF) FY2015 budget request remains steady at \$15 million for its Research to Combat Bioterrorism program. Funding for this program is allocated from NSF homeland security activities to microbial genomics, analysis, and modeling in the BIO directorate.<sup>21</sup>

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Table 1. Federal Civilian Biodefense Program Funding (in \$millions)

	FY2010	FY2011	FY2012	FY2013 (actual)	FY2014 (estimated)	FY2015 (budget)
<b>Department of Defense (DoD)</b>						
<b>Defense Threat Reduction Agency (DTRA)</b>						
Cooperative Biological Engagement	169.1	255.9	229.5	211.0	260.0	256.8
<b>Chemical and Biological Defense Program (CBDP) (DoD-wide)</b>						
Techbase Med Defense	—	—	0	242.9	181.8	176.5
Techbase Technology Transition						
ACD&P (TaCBRD)	24.9	26.1	3.0	3.2	0	0
Medical Biological Defense	419.2	423.5	587.2	285.4	369.3	285.0
<b>Subtotal DoD Civilian Biodefense Program Funding</b>	<b>613.3</b>	<b>705.5</b>	<b>819.7</b>	<b>742.5</b>	<b>811.1</b>	<b>718.3</b>
<b>Department of Homeland Security (DHS)</b>						
<b>Office of Health Affairs (OHA)</b>						
BioWatch	88.1	100.8	111.8	81.0	85.2	84.7
<b>Science &amp; Technology Directorate (S&amp;T)</b>						
Agriculture Thrust Area	24.2	—	—	—	—	—
Biological Countermeasures Thrust Area	124.9	—	—	—	—	—
Chemical, Biological, Explosives (CBE), Defense Thrust						
Bioagent Detection Program	36.5	42.7	21.3	24.7	32.8	35.7
Bioagent Threat Assessment Program (BKC, BTRA, BTCP, BNA)	40.4	22.8	12.1	21.1	24.8	22.2
Disaster Resilience Thrust						
Bioagent Attack Resiliency (Forensics, Event Recovery, Ag Response)	32.4	34.3	22.1	23.9	25.1	26.8
Laboratory Facilities (NBACC, NBFAC, Plum Island, NBAF)	17.2	110.5	135.8	86.3	473.3	358.9
<b>Subtotal DHS Civilian Biodefense Program Funding</b>	<b>363.7</b>	<b>311.1</b>	<b>303.1</b>	<b>237.0</b>	<b>641.2</b>	<b>528.3</b>
<b>Department of Health and Human Services (HHS)</b>						
<b>Food and Drug Administration (FDA)</b>						
Bioterrorism						
Food Defense	217.5	217.5	217.5	217.5	217.5	217.5
Advancing Medical Countermeasures Initiative (MCMi)	—	170.0	20.0	21.8	24.6	24.5
Physical Security	7.0	7.0	7.0	7.0	7.0	7.0
Life Sciences Biodefense Lab (operationalizing)	—	—	—	—	17.7	17.7
<b>Health Resources and Services Administration (HRSA)</b>						
Countermeasure Injury Compensation Fund (smallpox)	—	3.5	—	—	—	—
<b>Assistant Secretary for Emergency Preparedness and Response (ASPR)</b>						
Medical Countermeasures Dispensing (USPS pilot program)	10.0	0	0	0	5.0	0
<b>Subtotal HHS Civilian Biodefense Program Funding</b>	<b>234.5</b>	<b>398.0</b>	<b>244.5</b>	<b>246.2</b>	<b>271.7</b>	<b>266.6</b>
<b>National Science Foundation (NSF)</b>						
Homeland Security Activities: Research to Combat Bioterrorism	15.0	15.0	15.0	15.0	15.0	15.0
<b>Total Federal Civilian Biodefense Program Funding</b>	<b>1,226.4</b>	<b>1,429.5</b>	<b>1,382.3</b>	<b>1,240.8</b>	<b>1,739.0</b>	<b>1,528.1</b>

## RADIOLOGICAL/NUCLEAR PROGRAM FUNDING

This section focuses on funding for federal programs focused on prevention, preparedness, and consequence management of terrorist and accidental radiological and nuclear incidents. Overall funding for radiological- and nuclear-specific programs was significantly reduced from FY2010 to FY2014. Programs included in this analysis have been reduced by 40% overall since FY2010, although proposed funding levels for FY2015 show a slight increase from estimated spending levels for FY2014. In total, the

proposed federal budget for radiological and nuclear programs is approximately \$2.0 billion for FY2015 (see Table 2).

## Methods

Programs included in this section are solely or primarily focused on radiological/nuclear hazards as described in budget documents or on program websites. Previous analyses by Sell and Franco<sup>11</sup> and Schwartz and Choubey,<sup>22</sup> as well as searches of agency budgets, were used to help identify programs for inclusion. Programs that were

Table 2. Federal Civilian Radiological/Nuclear Program Funding (in \$millions)

	<i>FY2010</i>	<i>FY2011</i>	<i>FY2012</i>	<i>FY2013 (actual)</i>	<i>FY2014 (estimate)</i>	<i>FY2015 (budget)</i>
<b>Department of Energy (DOE)</b>						
Weapons Activities Appropriation						
Nuclear Counterterrorism Incident Response	223.4	232.5	221.3	227.1	228.2	173.4
Counterterrorism & Counterproliferation Programs	—	—	—	—	—	76.9
NNSA Defense Nuclear Nonproliferation						
Defense Nuclear Nonproliferation R&D	311.3	355.4	347.9	0	0	360.1
Nonproliferation and International Security	1,187.2	147.5	153.6	143.1	128.7	141.4
International Material Protection & Cooperation	572.7	578.6	575.8	527.9	419.7	305.8
Global Threat Reduction Initiative	333.5	444.7	503.5	462.9	442.1	333.5
<b>Subtotal DOE Civilian Rad/Nuc Program Funding</b>	<b>2,628.1</b>	<b>1,758.7</b>	<b>1,802.1</b>	<b>1,361.0</b>	<b>1,218.7</b>	<b>1,391.1</b>
<b>Department of Homeland Security (DHS)</b>						
Domestic Nuclear Detection Office (DNDO)	317.0	341.7	290.0	303.0	285.3	304.4
Federal Emergency Management Agency (FEMA)						
Radiological Emergency Preparedness (REP) <sup>a</sup> Program	31.5	36.6	37.1	37.4	37.3	38.3
Science & Technology Directorate (S&T)						
Explosives & Rad/Nuc Attack Resiliency	—	—	—	4.9	5.0	3.3
<b>Subtotal DHS Civilian Rad/Nuc Program Funding</b>	<b>348.5</b>	<b>378.3</b>	<b>327.1</b>	<b>345.3</b>	<b>327.6</b>	<b>346.0</b>
<b>Department of Defense (DoD)</b>						
Defense Threat Reduction Agency (DTRA)						
Cooperative Threat Reduction (CTR)						
Global Nuclear Security	118.6	164.5	151.1	39.3	19.4	20.7
Research, Development, Test & Evaluation (RDT&E)						
Detection and Forensics Technologies (nuclear/radiological weapons)	105.6	121.2	118.6	110.6	117.6	108.7
Chemical and Biological Defense Program (CBDP) (DoD-wide)						
Techbase Med Defense						
Radiation Countermeasures	—	—	0	0.8	0	0
Medical Radiological Defense	9.6	6.4	2.4	0	2.7	0
Defense Health Program RDT&E (USUHS)						
Radiation Countermeasures	2.5	2.7	2.8	0.9	1.1	0.9
Army (RDT&E)						
Nuclear Arms Control Monitoring and Sensor Network	6.9	7.0	7.2	7.1	—	—
<b>Subtotal DoD Civilian Rad/Nuc Program Funding</b>	<b>243.3</b>	<b>301.7</b>	<b>282.1</b>	<b>158.7</b>	<b>140.8</b>	<b>130.3</b>
<b>Department of State</b>						
International Atomic Energy Agency (IAEA) contribution	98.9	106.2	105.6	106.9	116.0	116.3
<b>Environmental Protection Agency (EPA)</b>						
Radiation Protection	16.0	15.9	13.8	13.2	12.8	13.2
Radiation Response Preparedness	7.1	7.6	6.8	6.5	6.3	6.8
<b>Subtotal EPA Civilian Rad/Nuc Program Funding</b>	<b>23.1</b>	<b>23.5</b>	<b>20.6</b>	<b>19.7</b>	<b>19.1</b>	<b>20.0</b>
<b>Nuclear Regulatory Commission (NRC)<sup>b</sup></b>						
Homeland Security (Nuclear)	27.1	22.2	26.7	24.3	19.1	18.2
Event Response	14.0	14.9	15.8	16.1	18.4	16.7
<b>Subtotal NRC Civilian Rad/Nuc Defense Funding</b>	<b>41.1</b>	<b>37.1</b>	<b>42.5</b>	<b>40.4</b>	<b>37.5</b>	<b>34.9</b>
<b>Total Federal Civilian Radiological/Nuclear Program Funding</b>	<b>3,383.0</b>	<b>2,605.5</b>	<b>2,580.0</b>	<b>2,032.0</b>	<b>1,859.7</b>	<b>2,038.6</b>

<sup>a</sup>Has offsetting collection authority.<sup>b</sup>FY2013 and FY2011 projection only.

included in this analysis were focused on domestic preparedness and response, international threat reduction, nonstate nonproliferation, and counterterrorism activities. Programs that are solely related to US stockpile stewardship, nation-state-level nonproliferation, and missile defense were excluded from the analysis.

### *Funding by Federal Agency*

#### **Department of Energy**

Programs included in this analysis from the Department of Energy (DOE) are contained in the National Nuclear Security Administration (NNSA). These programs include



nuclear counterterrorism incident response, counterterrorism and counterproliferation programs, and other defense nuclear nonproliferation programs. Funding for most included programs would be reduced from FY2014 levels. However, the overall budget for radiological and nuclear hazards includes a proposed increase in FY2015 due to new funding for defense nuclear nonproliferation R&D (\$360.1 million), which helps to create technologies to detect nuclear and radiological materials, as well as counterterrorism and counterproliferation programs (\$76.9 million), which work to provide a better understanding of nuclear weapons such as improvised nuclear devices.

Nuclear counterterrorism incident response, which assists in the response and management of any radiological/nuclear incident, would be reduced from the FY2014 budget by \$54.8 million to \$173.4 million. The Global Threat Reduction Initiative, which works to reduce and protect radiological material, and the International Material Protection and Cooperation program, which similarly mitigates security vulnerabilities of nuclear materials, would also see reductions under the proposed budget to \$333.5 million and \$305.8 million, respectively. In contrast, nonproliferation and international security, which helps to secure nuclear material from theft and control its transfer, would receive a slight boost in funding, from \$128.7 million to \$141.4 million.<sup>23</sup>

#### Department of Homeland Security

The DHS Domestic Nuclear Detection Office (DNDO), which protects against radiological and nuclear attacks directed against the US or its interests, accounts for the bulk of spending on nuclear/radiological hazards in DHS. The proposed FY2015 budget would increase funding to the office by \$19 million to a total of \$304.4 million. Additionally, the Federal Emergency Management Agency (FEMA) Radiological Emergency Preparedness (REP) program, which informs and educates the public about radiological emergency preparedness, would be increased by \$1 million to \$38.3 million. The S&T Directorate includes an explosive and rad/nuc attack resiliency focus area, which develops planning and funds exercises to prepare for rad/nuc attack scenarios; this area would be funded at \$3.3 million for FY2015.<sup>17,18</sup>

#### Department of Defense

Although many programs in the DoD have radiological or nuclear defense in their mission, a large number were excluded from the analysis because of their primarily military focus or joint CBRNE defense mission. Those programs that included a joint CBRNE defense mission were listed among the “multiple-hazard and preparedness” programs included in this analysis. The global nuclear security program, which works to secure nuclear weapons and materials under the DTRA cooperative threat reduction program, would see a slight increase to \$20.7 million; however, this amounts to only 13% of the previous program-high funding level provided in FY2011.<sup>15</sup> Detection and forensics technologies,

which were included in the DTRA budget under WMD defeat technologies, counterproliferation initiatives, and WMD defeat capabilities would account for a combined total of \$108.7 million.<sup>24</sup> Under the DoD-wide Chemical and Biological Defense Program, radiation countermeasures and medical radiological defense would be unfunded in the proposed FY2015 budget.<sup>16</sup> However, the radiation countermeasures program in the Defense Health Program is budgeted at \$0.9 million for FY2015.<sup>25</sup>

#### Department of State

The Department of State has a number of nuclear-related programs. However, many were excluded because of their emphasis on nonproliferation at the nation-state level. Although the missions of several other programs likely fit inclusion criteria for radiological and nuclear programs, they were difficult to separate from larger line items that focused on WMD defense. As a result, many programs in the State Department that contribute to nuclear defense are included under WMD-focused line items in the “multiple-hazard and preparedness” section of this analysis. However, contributions to the International Atomic Energy Agency (IAEA) were included in the radiological/nuclear analysis because of that agency’s work to prevent nuclear terrorism. Proposed IAEA contributions (\$116.3 million) are slightly greater than in previous years.<sup>26</sup>

#### Environmental Protection Agency

Two programs from the Environmental Protection Agency (EPA) have been included in this analysis: radiation protection (\$13.2 million), which provides site characterization for areas of suspected radioactive contamination, and radiation response preparedness (\$6.8 million), which generates policy guidance and procedures for EPA’s emergency response (including radiological antiterrorism activities). Both would see small increases in funding in the proposed FY2015 budget compared with FY2014 funding estimates.<sup>27</sup>

#### Nuclear Regulatory Commission

Homeland security and event response are the 2 areas of funding from the Nuclear Regulatory Commission (NRC) included in this analysis. The NRC was established to “license and regulate the Nation’s civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment.”<sup>28(p3)</sup> Although this broad mission falls within the definition of health security, it was deemed more appropriate to include only select line items focusing on security and response in NRC programs rather than the entire NRC budget. Funding for homeland security would be reduced by \$0.9 million to \$18.2 million in the proposed FY2015 budget, and since FY2010, funding has been reduced by a total of \$9 million.<sup>28</sup> Funding for event response would also decline, totaling \$16.7 million compared to \$18.4 million in FY2014.

### Department of Health and Human Services

Funding for programs that are solely or primarily devoted to radiological/nuclear hazards was not readily available through the HHS budget materials. Although there are programs that are focused on radiological and nuclear defense, such as the Radiation Studies Branch in the National Center for Environmental Health, funding for these programs appears to have been included in larger line items such as the CDC Preparedness and Response Capability and the Strategic National Stockpile (SNS) and cannot be broken out further. Thus, specific rad/nuc program funding in HHS is not listed in this section of the analysis and is instead accounted for in the multiple-hazards and preparedness section.

## CHEMICAL PROGRAM FUNDING

This section focuses on funding for federal programs that support prevention, preparedness, and response to acute chemical exposures of civilian populations. The President's FY2015 budget request includes \$355.9 million for chemical programs, which represents an 8% increase over the FY2014 estimated funding level of \$326.6 million (see Table 3).

### Methods

Federal programs were included in this section if they support basic research, prevention, and response capabilities for large-scale civilian exposures to chemical weapons (ie, blister or nerve agents) or toxic industrial chemicals. Research and development activities undertaken by the DoD were included because of their potential application to future civilian chemical defense capabilities. Programs were excluded if they focused primarily on environmental health or did not focus on preventing or responding to large-scale chemical releases.

### Funding by Federal Agency

#### Environmental Protection Agency

Of all the federal agency budgets reviewed for this section, the EPA has the highest proposed budget for civilian chemical programs in FY2015 (\$130.9 million), receiving a \$14.2 million increase over FY2014 estimated funding levels. Relevant chemical programs include the chemical risk review and reduction program (\$62.7 million), which seeks to reduce unreasonable risk to human health from toxic industrial chemical releases; the human health risk assessment research program (\$40.7 million), which aims to understand and reduce risk of chemical exposures to human health; and the risk management program (\$27.5 million), which builds preparedness and response capacity at the state and local levels for chemical incidents.<sup>27</sup>

### Department of Homeland Security

The primary operating divisions in DHS with responsibility for the chemical incident prevention, preparedness, and response mission are the Office of Health Affairs (OHA), the Science and Technology Directorate (S&T), and the National Protection and Programs Directorate (NPPD). In total, \$103.8 million has been proposed for various DHS chemical programs, which is a \$5.4 million increase over FY2014's funding level. NPPD's Infrastructure Security Compliance (ISC) program is responsible for coordination and implementation of the Chemical Facility Anti-Terrorism Standards (CFATS), which are intended to improve security at chemical facilities and prevent deliberate or unintended chemical releases. ISC's budget (\$87 million) comprises the majority of the proposed FY2015 DHS chemical program budget.<sup>17,18</sup>

### Department of Defense

The agencies in DoD that are primarily responsible for executing the chemical defense mission are the Defense Threat Reduction Agency (DTRA),<sup>24</sup> the Defense Advanced Research Projects Agency (DARPA),<sup>29</sup> and the DoD-wide Chemical and Biological Defense Program.<sup>16</sup> In FY2015, \$89.7 million is budgeted for research, development, and procurement of novel environmental detectors, clinical diagnostics, and therapeutic agents. This represents a proposed increase of almost \$10 million in chemical defense funding from FY2014.

### Department of State

In the President's FY2015 budget, the State Department would provide the Organisation for the Prohibition of Chemical Weapons (OPCW) with \$21.2 million, in line with FY2014's funding level. The OPCW is an international organization charged with implementing the Chemical Weapons Convention (CWC), a treaty that bans the development, stockpiling, or use of chemical weapons. The OPCW has been included in this analysis because of its role in preventing terrorists from acquiring chemical weapons.<sup>26</sup>

### Department of Health and Human Services

In HHS, the CDC and NIH have responsibility for executing the chemical incident preparedness and response mission. The CDC's chemical laboratories program is funded under the Public Health Emergency Preparedness (PHEP) cooperative agreement and provides \$10.3 million to 10 laboratories across the country to enable rapid detection of and response to chemical weapons and other toxic industrial chemicals.<sup>30</sup> NIH's CounterACT program supports basic research into the pathology and treatment of toxic chemical exposures. This program received \$50 million in funding in FY2010 and FY2011. However, more recent budget amounts could not be separated from the NIAID biodefense and emerging infectious disease line item, and, as a result, this funding is included in the multiple-hazard and preparedness section of this analysis.<sup>31-33</sup>

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Table 3. Federal Civilian Chemical Program Funding (in \$millions)

	<i>FY2010</i>	<i>FY2011</i>	<i>FY2012</i>	<i>FY2013 (actual)</i>	<i>FY2014 (estimate)</i>	<i>FY2015 (budget)</i>
<b>Environmental Protection Agency (EPA)</b>						
Toxic Substances						
Chemical Risk Review and Reduction	54.9	59.8	56.5	54.7	58.6	62.7
Chemical Risk Management	6.0	6.9	6.0	4.9	0	0
Research: Chemical Safety and Sustainability						
Human Health Risk Assessment	42.9	46.1	39.3	36.7	43.1	40.7
State and Local Prevention and Preparedness						
EPA Risk Management Program (RMP) (chemical risk)	13.4	13.1	13.3	12.6	15.0	27.5
<b>Subtotal EPA Civilian Chemical Program Funding</b>	<b>117.2</b>	<b>125.9</b>	<b>115.1</b>	<b>108.9</b>	<b>116.7</b>	<b>130.9</b>
<b>Department of Homeland Security (DHS)</b>						
<b>Office of Health Affairs (OHA)</b>						
Chemical Defense Program	3.9	0	5.4	1.9	0.8	0.8
<b>Science &amp; Technology Directorate (S&amp;T)</b>						
Chemical Detection	—	—	—	—	—	3.0
Chemical Security Analysis Center	4.8	4.6	4.0	5.3	7.0	7.0
Adaptive Facility Protection	—	—	—	—	3.5	4.0
Chemical Forensics	4.8	4.7	2.6	3.5	3.5	2.0
<b>National Protection &amp; Programs Directorate (NPPD)</b>						
Infrastructure Security Compliance	103.4	95.9	93.3	71.7	83.6	87.0
<b>Subtotal DHS Civilian Chemical Program Funding</b>	<b>116.9</b>	<b>105.2</b>	<b>105.3</b>	<b>82.4</b>	<b>98.4</b>	<b>103.8</b>
<b>Department of Defense (DoD)</b>						
<b>Defense Threat Reduction Agency (DTRA)</b>						
Chemical Weapons Convention Missions	6.1	4.3	1.4	0.9	3.2	2.3
Advanced Anticonvulsant System	—	—	—	1.6	2.5	2.5
<b>Defense Advanced Research Projects Agency (DARPA)</b>						
Biological Warfare Defense						
Unconventional Approaches to Chemical Weapons Defense (CWD) <sup>a</sup>	—	—	—	—	—	7.1
<b>Chemical and Biological Defense Program (CBDP) (DoD-wide)</b>						
Techbase Med Defense						
Chemical Diagnostics	—	—	0	1.4	1.1	1.2
Nerve Agent Pretreatments	—	—	0	9.7	7.5	11.0
Chemical Therapeutics	—	—	0	9.7	5.9	5.5
Cutaneous/Ocular Therapeutics	—	—	0	1.3	0	0
Neurologic Therapeutics	—	—	0	9.2	4.6	1.7
Medical Chemical Defense	97.4	68.0	67.9	17.4	55.1	58.5
<b>Subtotal DoD Civilian Chemical Program Funding</b>	<b>103.5</b>	<b>72.3</b>	<b>69.3</b>	<b>51.0</b>	<b>79.9</b>	<b>89.7</b>
<b>Department of State</b>						
Organisation for the Prohibition of Chemical Weapons (OPCW)	24.0	25.5	19.6	20.1	21.3	21.2
<b>Department of Health and Human Services (HHS)</b>						
<b>Centers for Disease Control and Prevention (CDC)</b>						
Chemical Laboratories (LRN-C) <sup>b</sup>	—	—	—	10.3	10.3	10.3
<b>National Institutes of Health (NIH)</b>						
CounterACT	50.0	49.5	—	—	—	—
<b>Subtotal HHS Civilian Chemical Program Funding</b>	<b>50.0</b>	<b>49.5</b>	<b>0</b>	<b>10.3</b>	<b>10.3</b>	<b>10.3</b>
<b>Total Federal Civilian Chemical Program Funding</b>	<b>411.6</b>	<b>378.5</b>	<b>309.3</b>	<b>272.7</b>	<b>326.6</b>	<b>355.9</b>

<sup>a</sup>Funding for this program was subtracted from the Biological Warfare Defense total in the Multi-Hazard and Preparedness Section.

<sup>b</sup>Funding for this program was subtracted from the CDC State and Local Preparedness and Response Capability in the Multi-Hazard and Preparedness Section.

## PANDEMIC INFLUENZA AND EMERGING INFECTIOUS DISEASE PROGRAM FUNDING

This section focuses on funding for federal programs aimed at prevention, preparedness, response, recovery, and mitigation of pandemic influenza and emerging infectious

diseases with the potential to destabilize. Overall, funding for federal pandemic influenza and emerging infectious disease programs would increase under the proposed FY2015 budget from \$879.7 million in FY2014 to \$947.9 million in FY2015. The increase in funding would result from funding boosts to programs in HHS, while programs in USAID and DoD would be reduced (see Table 4).



Table 4. Federal Civilian Pandemic Influenza and Emerging Infectious Diseases Program Funding (in \$millions)

	FY2010	FY2011	FY2012	FY2013 (actual)	FY2014 (estimated)	FY2015 (budget)
<b>Department of Health and Human Services (HHS)</b>						
<b>Centers for Disease Control and Prevention (CDC)</b>						
Immunization and Respiratory Diseases						
Influenza Planning and Response	159.7	159.7	172.6	166.1	172.6	187.6
Emerging and Zoonotic Infectious Diseases						
Core Infectious Disease program	213.7	186.2	225.7	217.0	218.6	249.7
Advanced Molecular Detection and Response to Infectious Disease Outbreaks	—	—	—	—	30.0	30.0
Quarantine	26.5	26.0	33.0	31.3	31.6	31.6
Global Health						
Global Disease Detection and Emergency Response (GHSI)	44.2	41.9	45.4	44.8	45.5	45.5
<b>National Institutes of Health (NIH)</b>						
<b>National Institute of Allergy and Infectious Diseases (NIAID)</b>						
Universal Flu Vaccine (from biodefense and emerging disease research funding)	—	—	—	—	118.0	118.0
<b>Food and Drug Administration (FDA)</b>						
Pandemic Influenza	46.7	43.6	30.0	32.1	33.3	33.0
Antimicrobial Resistance	30.2	27.7	44.1	25.9	28.3	28.6
<b>Office of the Secretary (OS)</b>						
Pandemic Influenza Preparedness Activities	276.0	65.0	0	0	—	—
<b>Assistant Secretary for Emergency Preparedness and Response (ASPR)</b>						
Pandemic Influenza	—	—	—	—	115.0	170.0
<b>Subtotal HHS Civilian Pandemic Flu and EID Program Funding</b>	<b>797.0</b>	<b>550.1</b>	<b>550.8</b>	<b>517.3</b>	<b>792.9</b>	<b>893.9</b>
<b>US Agency for International Development (USAID)</b>						
Pandemic Influenza and Other Emerging Threats (PIOET)	156.0	47.9	58.0	54.9	72.1	50.0
<b>Department of Defense (DoD)</b>						
<b>Defense Advanced Research Projects Agency (DARPA)</b>						
Applied Research: Biomedical Technology						
Pathogen Defeat	—	12.0	19.0	13.2	14.6	4.0
<b>Total Federal Civilian Pandemic Influenza and Emerging Infectious Diseases Funding</b>	<b>953.0</b>	<b>610.0</b>	<b>627.8</b>	<b>585.4</b>	<b>879.7</b>	<b>947.9</b>

## Methods

The scope of the analysis was limited to pandemic influenza preparedness and response programs, programs focused on newly emerging infectious diseases with potentially destabilizing effects (eg, dengue fever), and antimicrobial resistance. This analysis used the NIH definition of emerging disease: “Emerging diseases include outbreaks of previously unknown diseases or known diseases whose incidence in humans has significantly increased in the past two decades.”<sup>34</sup> This analysis did not include programs focused on established diseases such as HIV, TB, and malaria (which have their own dedicated funding streams), seasonal influenza, or chronic diseases.

## Funding by Federal Agency

### Department of Health and Human Services

The bulk of programs dedicated to pandemic influenza and emerging infectious diseases are located in HHS. In FY2015, proposed funding totals \$893.9 million, a sig-

nificant increase from estimated FY2014 funding of \$792.9 million. One of the largest contributors to the proposed funding increase is the core infectious disease program in the National Center for Emerging and Zoonotic Infectious Diseases at CDC. This program includes efforts to protect against antimicrobial resistance, high-consequence pathogens, vectorborne diseases, and other threats and would see an increase in funding from \$218.6 million in FY2014 to \$249.7 million in FY2015. Most other programs in CDC, such as Influenza Planning and Response (\$187.6 million), Advanced Molecular Detection and Response to Infectious Disease Outbreaks (\$30 million), Quarantine (\$31.6 million), and Global Disease Detection and Emergency Response (\$45.5 million), would have their funding remain steady or see slight increases under the President’s proposed FY2015 budget.<sup>30</sup> In FY2015, the proposed budget for ASPR included a new line item for pandemic influenza, and funding is allocated for this program at \$115 million for FY2014 and \$170 million in FY2015.<sup>19</sup> NIH funding for a universal flu vaccine program in NIAID would remain steady at \$118 million.<sup>31</sup> (Note: Funding information for

universal flu vaccine could not be obtained for FY2010-FY2013.) Similarly, funding in the FDA for pandemic influenza (\$33 million) and antimicrobial resistance (\$28.6 million) would remain relatively steady.<sup>20</sup>

#### US Agency for International Development

The proposed FY2015 budget for the US Agency for International Development (USAID) includes the pandemic influenza and other emerging threats program, which aims to strengthen international capacities to prevent, detect, and control infectious diseases in animals and people with an emphasis on early identification of and response to dangerous pathogens from animals before they can become significant threats to human health. This program includes the USAID PREDICT, PREVENT, IDENTIFY and RESPOND projects and would see a significant reduction in funding from \$72.1 million in FY2014 to \$50 million under the proposed FY2015 budget.<sup>26</sup>

#### Department of Defense

The only DoD program included in the pandemic influenza and emerging infectious disease section is the pathogen defeat program in DARPA's biomedical technology applied research, which would be reduced from \$14.6 million to \$4 million in the President's proposed FY2015 budget.<sup>29</sup>

### MULTIPLE-HAZARD AND PREPAREDNESS PROGRAM FUNDING

This section focuses on federal programs aimed at prevention, preparedness, response, recovery, and mitigation of multiple hazards and programs that aim to build preparedness and response systems for large-scale health events. Compared with estimated funding for FY2014, proposed funding for multiple-hazard and preparedness programs would be reduced under proposed FY2015 funding by \$388.7 million to a total of \$7.7 billion. Large cuts have been proposed for HHS, DHS, EPA, the Department of Commerce, and the Department of State. Proposed funding for the NSF and Department of Justice (DoJ) has been fairly steady, while proposed funding for DoD would see an increase (see Table 5).

#### Methods

Programs included in this section have a multiple-hazard focus, have general preparedness and response goals, and/or are targeted at building infrastructure and capacity to respond to large-scale domestic health threats of many types and causes. These programs protect against one or more hazards beyond biological, radiological/nuclear, chemical, or pandemic and emerging infectious disease hazards alone. Examples of programs that are included in this section are programs aimed at a combination of

chemical, biological, radiological, and nuclear threats (CBRN) or weapons of mass destruction (WMD) preparedness and response; programs aimed at building public health, medical, or emergency management capacity to respond to large-scale health emergencies; and basic infectious disease research programs, the results of which may have implications for a multitude of emerging infectious diseases.

### Funding by Federal Agency

#### Department of Health and Human Services

Biodefense and emerging infectious disease research (\$1.3 billion) in the NIH represents a large portion of multiple-hazard and preparedness funding in HHS. This program was included in the multiple-hazard section because of its dual focus on biodefense and emerging infections. However, funding for the universal flu vaccine program was subtracted from the NIAID program total for FY2015 and FY2014 and included instead in the pandemic flu and emerging infectious diseases section of this analysis, thus reducing the biodefense and emerging infectious disease research total here to \$1.2 billion in FY2015.<sup>31</sup>

Notable CDC programs in this section include the CDC's state and local preparedness and response capability (\$606.7 million; \$10.3 million was subtracted for LRN-C), which includes the Public Health Emergency Preparedness (PHEP) grants, and the Strategic National Stockpile (\$542.8 million), which includes countermeasures against CBRN threats (although most of the focus of SNS in the past was on biological threats).<sup>30</sup> These programs are set to receive funding reductions in the proposed FY2015 budget, continuing a downward trend. Specifically, the state and local preparedness and response capability has seen a nearly 35% reduction in funding since the program's peak funding level in FY2002.<sup>7</sup> CDC's National Center for Environmental Health also conducts a number of preparedness and response activities under its environmental health activities line item. These include "Responding to Environmental Health Emergencies," "Responding to Toxic Health Threats," and "Providing Expertise on Radiation and Health." While geared toward emergency response, the CDC's FY2015 budget does not provide the funding levels for these specific activities, and they are therefore not accounted for in funding totals.<sup>30</sup>

Multiple-hazard and preparedness programs in ASPR would see an overall increase under the proposed FY2015 budget as compared to FY2014 funding. This is primarily because of an increase in funds provided for Project BioShield, which has been included in the multiple-hazard section because of its stated mission to support the procurement of MCMs against CBRN threats. ASPR's Biomedical Advanced Research and Development Authority (BARDA), which would be funded at a steady \$415 million, is also included in the multiple-hazard analysis because its mission includes support for development of MCMs to

Table 5. Federal Civilian Multiple-Hazard and Preparedness Program Funding (in \$millions)

	<i>FY2010</i>	<i>FY2011</i>	<i>FY2012</i>	<i>FY2013 (actual)</i>	<i>FY2014 (estimated)</i>	<i>FY2015 (budget)</i>
<b>Department of Health and Human Services (HHS)</b>						
<b>Centers for Disease Control and Prevention (CDC)</b>						
State and Local Preparedness and Response Capability (including PHEP, CRI) <sup>a</sup>	761.0	664.0	657.4	619.9	652.5	606.7
CDC Preparedness and Response Capability (includes BioSense)	166.0	160.0	138.3	155.5	157.5	157.5
Strategic National Stockpile (SNS)	596.0	591.0	533.8	493.2	550.8	542.8
<b>National Institutes of Health (NIH)</b>						
Biodefense and Emerging Infectious Diseases Research (NIAID) <sup>b</sup>	1,316.2	1,305.5	1,307.8	1,233.3	1,148.5	1,154.2
Nuclear/Radiologic/Chemical Countermeasures Research	96.7	95.3	95.3	90.9	92.1	93.4
<b>Office of the Secretary (OS)</b>						
Commissioned Corps Readiness and Response	14.8	14.8	—	—	—	—
Medical Reserve Corps	13.0	12.0	11.2	11.0	11.0	9.0
<b>Assistant Secretary for Emergency Preparedness and Response (ASPR)</b>						
Operations	37.0	44.0	33.0	31.0	31.0	31.0
Biomedical Advanced Research and Development Authority (BARDA)	320.0	378.0	415.0	415.0	415.0	415.0
Project Bioshield	—	—	—	—	255.0	415.0
Preparedness and Emergency Operations	30.0	30.0	30.0	28.0	28.0	25.0
National Disaster Medical System (NDMS)	52.0	52.0	53.0	50.0	50.0	50.0
Hospital Preparedness (HPP) Grants (includes ESAR-VHP)	417.0	375.0	375.0	358.0	255.0	255.0
Policy and Planning	19.0	19.0	16.0	15.0	15.0	15.0
<b>Subtotal HHS Civilian Multiple-Hazard/Preparedness Program Funding</b>	<b>3,838.7</b>	<b>3,740.6</b>	<b>3,665.8</b>	<b>3,500.7</b>	<b>3,661.4</b>	<b>3,769.7</b>
<b>Department of Homeland Security (DHS)</b>						
<b>Office of Health Affairs (OHA)</b>						
Planning and Coordination	3.7	2.3	5.9	5.1	5.0	5.0
Medical Countermeasures	—	—	0	0.8	1.0	0.5
National Biosurveillance Integration Center (NBIC)	13.5	7.0	12.8	12.3	10.0	8.0
<b>Federal Emergency Management Agency (FEMA)</b>						
Preparedness and Protection	—	—	166.0	171.1	173.4	185.0
Response	—	—	191.8	171.5	178.7	167.4
Recovery	—	—	55.3	52.8	55.1	56.0
Mitigation	—	—	30.7	28.5	27.9	25.8
State and Local Programs	2,114.9	1,691.6	1,602.9	1,731.7	1,850.0	1,495.5
<b>Science &amp; Technology Directorate (S&amp;T)</b>						
Integrated Terrorism Risk Assessment	3.0	3.0	2.5	2.5	3.8	3.8
Integrated Consortium of Laboratory Networks	4.8	4.7	2.6	3.5	3.5	2.0
<b>Customs and Border Protection (CBP)</b>						
International Cargo Screening	145.5	103.9	74.6	70.4	67.5	69.2
<b>Subtotal DHS Civilian Multiple-Hazard/Preparedness Program Funding</b>	<b>2,285.4</b>	<b>1,812.5</b>	<b>2,145.1</b>	<b>2,250.3</b>	<b>2,375.9</b>	<b>2,018.2</b>
<b>Department of Defense (DoD)</b>						
<b>US Army National Guard</b>						
WMD Civil Support Teams	45.5	74.0	53.2	145.1	166.8	182.1
<b>US Navy</b>						
WMD Detection (fissile materials and weapons)	9.6	24.4	8.5	3.7	2.0	0
Stoppage of large surface vessels at sea (suspected of carrying WMD)	6.3	14.3	4.8	0	0	0
<b>Defense Threat Reduction Agency (DTRA)</b>						
<b>Operation and Maintenance</b>						
Cooperative Threat Reduction Program (WMD components)	87.2	65.5	93.8	104.8	117.6	44.1
International Counterproliferation Program (WMD)	12.2	10.1	9.5	7.4	7.8	7.6
US Strategic Command Center for Combating WMD	28.0	33.5	12.0	11.0	11.7	11.3
Counter-WMD Programs	—	—	—	7.9	4.3	4.9
<b>Research, Development, Testing, and Evaluation (RTDE)</b>						
Fundamental Research for Combating WMD	40.0	8.0	47.7	40.8	45.8	37.8
WMD Defeat Technologies	—	—	47.6	48.8	54.0	51.1
Counterproliferation Initiatives—Proliferation, Prevention, and Defeat	—	—	13.4	3.1	2.4	0
<b>Defense Advanced Research Projects Agency (DARPA)</b>						
Biological Warfare Defense Program (CBR threat focus) <sup>c</sup>	41.3	35.3	30.8	15.1	24.5	37.7
<b>Chemical and Biological Defense Program (CBDP) (DoD-wide)</b>						
Life Sciences and Physical Sciences	179.4	117.5	135.8	90.0	96.3	102.3
Techbase Nontraditional Agent Defense	—	—	0	83.1	88.1	93.1
CBDP Advanced Technology Development	57.1	21.2	23.8	23.2	14.3	17.7

*(continued)*

# FEDERAL FUNDING FOR HEALTH SECURITY IN FY2015

Table 5. (Continued)

	FY2010	FY2011	FY2012	FY2013 (actual)	FY2014 (estimated)	FY2015 (budget)
Homeland Defense (in support of WMD CST)	8.5	10.5	25.1	5.2	23.8	18.5
Test & Evaluation	84.9	65.8	44.5	15.6	45.6	36.3
<b>Subtotal DoD Civilian Multiple-Hazard/Preparedness Funding</b>	<b>600.0</b>	<b>480.0</b>	<b>550.5</b>	<b>604.9</b>	<b>705.0</b>	<b>644.5</b>
<b>Department of State</b>						
Arms Control, Verification, and Compliance						
Office of Chemical and Biological Weapons Affairs	4.0	2.3	2.1	2.0	2.1	2.0
International Security and Nonproliferation	49.3	46.5	47.7	45.9	45.2	44.2
Nonproliferation, Anti-Terrorism, Demining and Related Programs	754.0	738.5	711.3	674.9	700.0	605.4
<b>Subtotal Department of State Civilian Multiple-Hazard/Preparedness Program Funding</b>	<b>807.3</b>	<b>787.3</b>	<b>761.1</b>	<b>722.8</b>	<b>747.3</b>	<b>651.6</b>
<b>Environmental Protection Agency (EPA)</b>						
<b>Homeland Security</b>						
Grants to States (formerly Water Safety Grants)	2.9	0	—	—	—	—
Communication and Information	6.9	4.2	3.4	4.1	3.7	4.1
Critical Infrastructure Protection	31.6	20.9	12.6	11.3	11.4	13.1
Preparedness, Response and Recovery	98.7	87.1	67.9	67.4	64.2	62.6
Protection of EPA Personnel and Infrastructure	16.2	16.0	12.3	14.4	14.2	15.3
<b>Superfund</b>						
Emergency Response and Removal	202.3	242.4	189.6	183.3	177.8	187.0
Emergency Preparedness	9.6	10.5	9.2	8.8	8.2	7.6
<b>Subtotal EPA Civilian Multiple-Hazard/Preparedness Funding</b>	<b>368.2</b>	<b>381.2</b>	<b>295.0</b>	<b>289.3</b>	<b>279.5</b>	<b>289.6</b>
<b>Department of Justice (DoJ)</b>						
National Security Division	88.0	88.0	87.0	84.0	92.0	92.0
<b>National Science Foundation (NSF)</b>						
<b>Homeland Security Activities</b>						
Protecting Critical Infrastructure and Key Assets						
Counterterrorism	27.0	27.0	27.0	27.0	27.0	27.0
Emergency Planning and Response	56.6	50.9	51.8	51.3	51.3	50.3
<b>Subtotal NSF Civilian Multiple-Hazard/Preparedness Program Funding</b>	<b>83.6</b>	<b>77.9</b>	<b>78.8</b>	<b>78.3</b>	<b>78.3</b>	<b>77.3</b>
<b>Department of Commerce (DoC)</b>						
Bureau of Industry and Security	58.1	66.0	56.6	52.3	55.6	56.2
<b>US Department of Agriculture (USDA)</b>						
<b>Animal and Plant Health Inspection Service (APHIS)</b>						
Emergency Management	22.0	22.0	18.0	17.0	17.0	17.0
<b>Food Safety and Inspection Service (FSIS)</b>						
Public Health Data Communication Infrastructure System	28.0	26.0	35.0	35.0	35.0	35.0
Office of Homeland Security and Emergency Coordination	2.0	1.0	1.0	1.0	2.0	2.0
<b>Subtotal USDA Civilian Multiple-Hazard/Preparedness Program Funding</b>	<b>52.0</b>	<b>49.0</b>	<b>54.0</b>	<b>53.0</b>	<b>54.0</b>	<b>54.0</b>
<b>Department of Veterans Affairs (VA)</b>						
Emerging Pathogens/Bioterrorism	1.0	1.3	0.7	0.5	0.5	0.5
<b>Total Federal Civilian Multiple-Hazard and General Preparedness Program Funding</b>	<b>8,182.2</b>	<b>7,483.8</b>	<b>7,694.6</b>	<b>7,636.0</b>	<b>8,049.4</b>	<b>7,653.6</b>

<sup>a</sup>\$10.3 million has been subtracted from this total for LRN-C for FY2013-FY2015 and has been accounted for in Table 3.

<sup>b</sup>\$118 million has been subtracted from this total for Universal Flu Vaccine in FY2014 and FY2015 and has been accounted for in Table 4.

<sup>c</sup>\$7.1 million has been subtracted from this total for Unconventional Approaches to CWD and has been accounted for in Table 3.

protect the nation from multiple man-made and natural public health emergencies.

Other programs under ASPR that have been included are operations, preparedness and emergency operations, policy and planning, the National Disaster Medical System (NDMS), and the Hospital Preparedness Program (HPP), which all contribute to preparedness and response to a range of disasters and health threats. Notably, like the CDC's state and local preparedness and response capability, annual funding for the HPP has been cut dramati-

cally (by 50%, or \$260 million) since the beginning of the program in 2003.<sup>19</sup>

## Department of Homeland Security

A majority of funding in DHS for multiple-hazard and general preparedness programs is allocated to FEMA, and within FEMA, the national preparedness grants program would receive the bulk of DHS multiple-hazard and preparedness funding. This program includes the Urban Area Security Initiative (UASI), medical surge, national

preparedness, first responder, and education training and exercise grants; it would receive approximately \$1.5 billion under the proposed FY2015 budget. Other FEMA programs focused on preparedness and protection, response, recovery, and mitigation would receive \$434.2 million, for a total FEMA budget for multiple-hazard and preparedness programs of \$1.9 billion in the proposed FY2015 budget. However, this is a marked decrease from FY2014, when funding was estimated at \$2.3 billion.

Programs in the S&T Directorate, such as the Integrated Terrorism Risk Assessment (ITRA) program (\$3.8 million) and the Integrated Consortium of Laboratory Networks (\$2 million), as well as planning and coordination (\$5 million), NBIC (\$8 million), and medical countermeasures (\$0.5 million) in the Office of Health Affairs and International Cargo Screening in CBP (\$69.2 million), make up the rest of DHS's multiple-hazard and preparedness programs.<sup>17,18</sup>

### Department of Defense

Multiple-hazard and preparedness programs in the DoD include those that support WMD, CBRN, and emerging infectious diseases prevention, preparedness, and response. The Army National Guard WMD civil support teams, which support first responders with identification, assessment, and advice in the event of a domestic CBRNE incident, would receive \$182.1 million under the proposed FY2015 budget.<sup>35</sup> DTRA's multiple-hazard and preparedness programs include the Cooperative Threat Reduction (CTR) program, which works to reduce WMD proliferation from the former Soviet Union and other regions; international counterproliferation programs; and WMD-focused research. In total, these programs would receive \$156.8 million under proposed FY2015 funding. This would represent a 35% decrease from estimated FY2014 funding levels.<sup>15</sup>

DARPA's biological warfare defense program, which focuses on a range of threats including CBRN, would receive \$37.7 million (\$7.1 million was subtracted for unconventional CWD), an increase in funding of \$20.2 million.<sup>29</sup> Funding for the multiple-hazard research in the CBDP (\$267.9 million)<sup>16</sup> would essentially remain flat in the proposed FY2015 budget.

### Department of State

Proposed funding for multiple-hazard and preparedness programs in the Department of State would be reduced in FY2015 to \$651.6 million from \$747.3 million in FY2014. The Office of Chemical and Biological Weapons Affairs in Arms Control, Verification, and Compliance would receive a steady \$2 million in proposed funding. Additionally, the offices of Nonproliferation, Anti-Terrorism, Demining and Related Programs (NADRP) and the International Security and Nonproliferation office (ISN) were included as a whole (\$649.6 million combined) because of difficulty separating funding streams for specific missions and programs. The reduction of funds is almost entirely from the NADRP,

which would lose almost \$100 million in funding under the proposed FY2015 budget.<sup>26,36</sup>

### Environmental Protection Agency

Proposed funding in EPA for multiple-hazard and preparedness programs would be slightly increased from FY2014 for a total of \$289.6 million, and includes funding under the homeland security program and the superfund program. EPA's homeland security focus consists of grants to states (formerly water safety grants); communication and information; critical infrastructure protection; preparedness, response, and recovery; and protection of EPA personnel and infrastructure programs. Additionally, this section includes \$194.6 million for the emergency preparedness and emergency response and removal programs in the EPA superfund. These programs are critical for EPA's role in CBR preparedness and response to environmental contamination emergencies with impacts on human health.<sup>27</sup>

### Department of Justice

This multiple-hazard and preparedness analysis includes the National Security Division of DoJ. The program would retain steady funding under the proposed FY2015 budget at \$92 million.<sup>37</sup>

### National Science Foundation

The National Science Foundation has 2 programs that are applicable to multiple-hazard and preparedness. These programs fall in the NSF homeland security activities to protect critical infrastructure and key assets and include counterterrorism (\$27 million) and emergency planning and response (\$50.3 million).<sup>21</sup>

### Department of Commerce

Multiple-hazard and preparedness programs in the Department of Commerce are located in the Bureau of Industry and Security (BIS) and would total \$56.2 million in proposed funding for FY2015. This represents a slight increase from estimated FY2014 funding levels. Programs include the Office of Non-Proliferation and Treaty Compliance, the Office of Export Enforcement, and the Office of Enforcement Analysis, all of which work to ensure that potentially dangerous WMD materials are prevented from reaching terrorists and from being transported to the US.<sup>38</sup>

### US Department of Agriculture

Multiple-hazard and preparedness programs in the US Department of Agriculture (USDA) would maintain steady funding under the proposed FY2015 budget at \$54 million. The largest portion of these funds would go to the Food Safety and Inspection Service's (FSIS) Public Health Data Communication Infrastructure System (\$35 million). Additional multiple-hazard and preparedness funding would go to the Animal and Plant Health Inspection



Service (APHIS) for Emergency Management (\$17 million) and the Office of Homeland Security and Emergency Coordination (\$2 million).<sup>39</sup>

### Department of Veterans Affairs

The emerging pathogens/bioterrorism program in the Department of Veterans Affairs would be funded at \$500,000 for the proposed FY2015 budget—the same amount as for FY2013 and FY2014.<sup>40</sup>

## CONCLUSIONS

Federal funding for health security includes programs dedicated to civilian programs in biological, radiological and nuclear, chemical, pandemic influenza and emerging infectious disease, and multiple-hazard and preparedness areas. In FY2015, proposed federal funding for health security totaled approximately \$12.5 billion. However, it should be noted that proposed funding in the President's budget often differs from final appropriated amounts.<sup>41</sup>

Of the total health security funding proposed for FY2015, 61% is allocated to multiple-hazard and preparedness programs, demonstrating a major government focus on building systems that can protect the country from a variety of threats to health. Radiological/nuclear programs would receive 16% of health security funds, which is higher than other threat-focused programs even when excluding programs focused on state nonproliferation, missile defense, and US stockpile stewardship. Biodefense programs are budgeted to receive 12% of health security funds in FY2015, representing a major decrease in biodefense funding since FY2001, when many of the programs were first established. Pandemic influenza and emerging infectious disease programs would receive 8% of the health security budget in FY2015, although this figure needs to be understood in the context that many pandemic influenza and emerging infectious disease programs were categorized in the multiple-hazard section of this analysis because of additional areas of focus. Finally, chemical incident prevention, preparedness, and response programs would receive only 3% of the health security funding total.

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