



United States Department of Health and Human Services  
Office of the Assistant Secretary for Preparedness and Response

# PROJECT BIOSHIELD ANNUAL REPORT

JANUARY 2014 – DECEMBER 2014

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United States Department of Health and Human Services  
Office of the Assistant Secretary for Preparedness and Response

Biomedical Advanced Research and Development Authority

## **PROJECT BIOSHIELD ANNUAL REPORT**

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## 1.0 PROJECT BIOSHIELD AUTHORITIES & REPORTING REQUIREMENTS

The Project BioShield Act of 2004 [Project BioShield (PBS); Public Law [P.L.] 108-276] amended the Public Health Service (PHS) Act and the Federal Food, Drug, and Cosmetic (FD&C) Act to provide additional and more flexible authorities and funding to support financially the development and procurement of medical countermeasures (MCM) against chemical, biological, radiological, and nuclear (CBRN) threat agents. It was also designed to provide the government with the authority to quickly authorize their use during emergencies. These authorities were further delineated, clarified, expanded, and extended by the Pandemic and All-Hazards Preparedness Act (PAHPA) of 2006 (P.L. 109-417) and the Pandemic and All-Hazards Preparedness Reauthorization Act (PAHPRA) of 2013 (P.L. 113-5).

Section 5 of the PBS Act (42 U.S.C. 247d-6) required the Secretary of the Department of Health and Human Services (HHS) to submit to Congress an annual report describing the use of specific provisions within the following authorities, now a function subsumed by the Public Health Emergency Medical Countermeasure Enterprise (PHEMCE) Annual Strategic Implementation Plan (SIP) report. For transparency, the PAHPRA-directed PHEMCE SIP annual report will include these items as a subset from Project BioShield:

- **Research and Development of Qualified Medical Countermeasures** – Section 2 of the PBS Act enacted Section 319F-1 of the PHS Act (42 U.S.C. 247d-6a), authorizing the use of a variety of streamlined procedures in awarding grants, contracts, and cooperative agreements relating to the research and development of qualified countermeasures. Reporting is required on the use of limited competition, expedited peer review, and increased simplified acquisition thresholds. In 2014, HHS did not utilize any of these unique authorities, but they remain available for future consideration.
- **Security Countermeasure Procurements and Special Reserve Fund** – Section 3 of the PBS Act enacted section 510 of the Homeland Security Act (6 U.S.C. 321j) to authorize the original appropriation of up to \$5.593 billion over the period of FY 2004 through FY

2013 in a Special Reserve Fund (SRF) for the procurement of security countermeasures that may be placed in the Strategic National Stockpile (SNS). The Act specified that up to \$3.4 billion could be obligated from FY 2004 through FY 2008, with the balance available from FY 2009 through FY 2013. Today, the Biomedical Advanced Research and Development Authority (BARDA) receives these funds through the annual appropriations process, up to the PAHPRA-authorized \$2.8 billion level. In FY 2014, BARDA had \$255M available for the acquisition of security medical countermeasures.

Furthermore, section 3 of the PBS Act enacted section 319F-2 of the PHS Act, which authorizes the use and reporting of simplified acquisition procedures, the modified use of other than full and open competition, and the payment of premiums in multiple-award contracts.

- **Emergency Use Authorization for Medical Countermeasures** – Section 4 of the PBS Act enacted section 564 of the FD&C Act, which allows the HHS Secretary to issue an Emergency Use Authorization (EUA) after determining circumstances exist that justify the authorization based on one of four declarations or determinations by the Secretaries of Defense, Homeland Security, or HHS. This EUA declaration justifies the use of a U.S. Food and Drug Administration (FDA) approved, licensed, or cleared product for an unapproved indication or an unapproved product for an indication pending approval, licensure, or clearance, or until the emergency ceases. The HHS Secretary has delegated the authority to issue an EUA to the FDA Commissioner. Reporting is required on emergency uses of certain biologicals, drugs and devices, emergency declarations, and conditions of authorization.

In 2013, Congress repealed section 5 of the PBS Act, and instead required reporting on these same PHS Act and FD&C Act authorities as part of the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) Strategy and Implementation Plan, enacted by PAHPRA as section 2811(d) of the PHS Act (42 U.S.C.

300hh-10). Accordingly, the Office of the Assistant Secretary for Preparedness and Response (ASPR) will include the required information in the PHEMCE Strategy and Implementation Plan provided to Congress in accordance with section 2811(d) of the PHS Act. In the meantime, this separate Project BioShield Report is provided as a courtesy, to inform Congress of the actions taken to implement these authorities through CY 2014.

## 1.1 AUTHORITY USAGE

In 2014, HHS used two of the authorities: one for the procurement of security countermeasures and the second, for the issuance of EUAs. HHS did not utilize the additional authorities of expedited peer review, simplified acquisition procedures, or premium provision in multiple-award contracts. The standard Federal Acquisition Regulation (FAR) practices were deemed adequate for acquisition activity in 2014.

## 1.2 EXPEDITED PEER REVIEW

The National Institute of Allergy and Infectious Diseases (NIAID) within the National Institutes of Health (NIH) did not use its expedited peer review authority during the 2014 reporting period.

## 1.3 SECURITY COUNTERMEASURE PROCUREMENT

PBS was initiated in 2004 with the passage of the PBS Act, which authorized the appropriation of \$5.6 billion in the Special Reserve Fund (SRF) from FY 2004 through FY 2013 to support the late-stage development and procurement of critical medical countermeasures used against CBRN threat agents. The original SRF special appropriation expired on September 30, 2013, by which time all funds invested in the SRF for use through FY 2013 had been obligated. These funds were used to procure 12 new medical countermeasures for inclusion in the SNS and to build robust pipeline of CBRN MCM candidates under BARDA's advanced research and development (ARD) programs.

PAHPA enacted section 319L of the PHS Act (42 U.S.C. 247d-7e), establishing BARDA with the mission of supporting advanced development and procurement of medical countermeasures against CBRN, pandemic influenza, and emerging infectious disease threats. BARDA's investments in advanced development were

intended to bridge the "valley of death" between early development and FDA licensure, approval or clearance for needed medical countermeasures. Since its establishment in 2007, BARDA invested just over \$2.2 billion of the SRF through FY2013 and \$415 million in FY 2014 for advanced development of nearly 90 CBRN vaccine, therapeutic, and diagnostic candidates. BARDA's CBRN MCM pipeline addressed a wide spectrum of CBRN threats including anthrax, smallpox, botulism, plague, tularemia, glanders, melioidosis, typhus, viral hemorrhagic fever, radionuclide exposure, ionizing irradiation, nuclear detonation, and chemical agent exposure.

## Calendar Year 2014: Project BioShield and CBRN MCM Advanced Research and Development Programs

Calendar year 2014 marked another year of milestones for Project BioShield. CY2014 was the first year when annual appropriations (FY2014-FY2015) solely supported PBS and BARDA ARD programs. This transition allowed for further utilization of the BARDA multi-year budget, showcasing the translation from planning to execution.

The BARDA CBRN MCM portfolios, both advanced development and Project BioShield activities, represented a sustainment period, focused on strengthening the existing development pipeline through the addition of promising new candidates and down selection of other candidates for performance or other reasons and maintaining current levels of preparedness through replenishment of stockpiled medical countermeasures. New to BARDA's CBRN MCM advanced development programs in 2014 were Ebola medical countermeasure candidates, both therapeutics and vaccine candidates as part of the U.S. response to the Ebola epidemic in West Africa. BARDA's investment in the advanced development of Ebola MCM candidates filled the last unmet gap in BARDA CBRN MCM pipeline.

## Project BioShield

Significant progress was made in 2014 in the regulatory review and approval of MCMs procured under Project BioShield. In July 2014, Cangene/Emergent submitted their Biological Licensing Application (BLA) in support of their human polyclonal anthrax antitoxin product [Anthrasil® or anthrax immunoglobulin (AIG)] for treatment of symptomatic persons with inhalational anthrax.



Cangene was first awarded a PBS contract, under PBS in September 2005 for late stage development and procurement of 10,000 doses of AIG. All 10,000 doses were delivered to the SNS available under EUA. **On March 25, 2015, the FDA licensed Anthrasil™ for treatment of inhalational anthrax in combination with appropriate antibacterial drugs under the Animal Rule.**

In September 2014, Amgen submitted a supplemental New Drug Application in support of an acute radiation syndrome (ARS) indication for their commercially available product, Neupogen® (filgrastim). In September 2013, BARDA awarded a PBS contract to Amgen for Neupogen® for the treatment of neutropenia, one of the subsyndromes of ARS, resulting from exposure to ionizing radiation from a nuclear blast. Neupogen® was approved already for the treatment of neutropenia in cancer patients undergoing myelosuppressive therapy. FDA ruled that both anti-neutropenia cytokines purchased under PBS, Neupogen® and Leukine®, may be used under EUA during a declared emergency to treat neutropenia resulting from acute exposure to ionizing radiation. **On March 30, 2015, the FDA approved Amgen's Neupogen® (filgrastim) to treat hematopoietic illnesses associated with Acute Radiation Syndrome.**

In October 2014, Emergent submitted a supplemental BLA (sBLA) in support of a post-exposure prophylaxis (PEP) indication for their anthrax vaccine -anthrax vaccine absorbed (AVA) or BioThrax®- licensed previously for general use prophylaxis (GUP) to anthrax. The PBS award to Emergent, in May 2005, was one of the first awards for procurement under PBS. Under that award, Emergent delivered 10 million doses of AVA to the SNS that were available under EUA during a declared emer-

gency for PEP. A second award was made to Emergent in September 2007 to support late stage development and procurement of an additional 18.75 million doses of AVA. All vaccines procured under these early PBS contracts were delivered to the SNS, which has procured this product since 2010. PBS supported the late stage development activities necessary to support the sBLA submission. This has been a PHEMCE effort with collaboration from NIH, who assisted in developing an anthrax animal model and provided key reagents for both non-clinical studies and assays.

Throughout 2014, delivery of medical countermeasures procured by BARDA under Project BioShield continued to (Table 1) unabated; delivered MCMs included anthrax antitoxins [Raxibacumab® and Anthrasil® (bulk human plasma stored at manufacturer)], botulinum antitoxin (HBAT®), smallpox vaccine (IMVAMUNE®), and smallpox antiviral drug (ST-246). These product deliveries to the SNS increased or maintained our current level of preparedness to these threats.

#### **2014 Project BioShield Procurement Actions**

In September 2014, BARDA executed a delivery task order for \$105 million under the existing PBS contract with GlaxoSmithKline (GSK) for the delivery of 32,734 treatment courses of Raxibacumab®, a monoclonal anthrax antitoxin licensed in 2012 under the Animal Rule for the treatment of individuals symptomatic for anthrax disease or prophylaxis in combination with antibiotics for high-risk exposed persons. This procurement maintained current preparedness levels for this product through 2018 and informed SNS multi-year budgets on the future procurement of this product. BARDA worked with GSK to support their post-licensure marketing commitments and requirements, which included establishing a clinical protocol to collect safety and effectiveness data, if the product were used during a declared emergency and evaluating potential interference between this antitoxin and the currently-licensed anthrax vaccine, if used in combination.

Also in September 2014, BARDA exercised an option for \$118 million on an existing PBS contract with Bavarian Nordic to procure four million additional doses of IMVAMUNE® (smallpox MVA vaccine) for immunocompromised persons. In October 2014, Bavarian Nordic initiated deliveries of the four million doses under the

option executed in September 2014 and completed these deliveries in January 2015, for a grand total of 28 million doses of this vaccine delivered to the SNS since 2010 under Project BioShield. This medical countermeasure is one of several supported by BARDA that addressed the mission to develop medical countermeasures for “at-risk” populations. The additional procurement of this vaccine as a liquid frozen product maintained the current level of smallpox preparedness.



In December 2014, BARDA posted a request for proposals (RFP) under PBS to maintain the existing herd of horses hyper-immunized with botulinum toxins that provide plasma to make heptavalent botulinum antitoxin (HBAT). Under a previous PBS contract with Cangene awarded in September 2006, BARDA supported late-stage development and procurement of up to 200,000 treatment courses of heptavalent botulism antitoxin. HBAT was licensed by the FDA in March 2013 to treat individuals with confirmed or suspected cases of botulism. Under that PBS contract, deliveries of HBAT to the SNS continued, while the Government continued to collect additional plasma from the horses and maintain the product as frozen plasma for future manufacturing. Proposals are being sought to maintain the current herd of hyper immune horses for the next 5 years. BARDA has invested several years and substantial Project BioShield funds to establish the current herd of hyper immune horses and plans to maintain them as a risk-mitigation measure through a 2015 contract award.

Also in December 2014, BARDA posted a Sources Sought Notice (SSN) for potential development and procurement of thermal burn therapeutic products to address burns resulting from a nuclear detonation (thermal burns). This new Project BioShield program builds on the advanced development of seven (7) thermal burn MCMs ranging from antimicrobial wound dressings, enzymatic wound debridement, autograft-sparing therapies, to autologous artificial skin replacement. Requests for Proposal (RFPs) to procure the thermal burn MCMs for field usage and definitive care are expected in 2015 with contract awards expected by late 2015.

### Advanced Research and Development

BARDA launched a new ARD program in August 2014 to support the development of medical countermeasures (MCMs) for Ebola, both therapeutics and vaccine candidates, as part of the U.S. response to the Ebola epidemic in West Africa. BARDA successfully transitioned ten (10) Ebola vaccines, monoclonal antibodies, and antiviral drug candidates from early development supported by NIH and DoD into advanced development using funds from FY2014 and FY2015 annual and supplemental appropriations. Development activities included manufacturing scale-up, optimized product formulation, animal challenge studies, and human clinical studies. BARDA's Ebola MCM program marked BARDA's filling of the last unmet gap in its CBRN MCM development pipeline.

In addition to the Ebola MCMs, BARDA also began support for several new broad spectrum antimicrobial drug and biothreat diagnostic candidate for CBRN threats. A comprehensive list of BARDA's current CBRN advanced research and development projects is available as a regularly updated version on [www.medicalcountermeasures.gov](http://www.medicalcountermeasures.gov).

The tables below outline cumulatively PBS acquisition contracts and solicitations that were initiated, completed, or continued in 2014 (**Table 1**), as well as the references for the referenced Project BioShield actions and BARDA's current advanced research and development open solicitations, the BARDA Broad Agency Announcements (**Table 2**).

**Table 1: Project BioShield Acquisition Contracts**

Countermeasure Area/Product	Date of Contract Award	Delivery to Strategic National Stockpile	Contract Recipient	Status at the Close of CY 2012	Total Funding (Millions)	Reason for Use of Authority
<b>Anthrax Therapeutics</b>						
Monoclonal Antibody (Raxibacumab®, formerly Abthrax)	9/2005 (Base)	Completed (2008)	HGS	20,000 doses delivered; NDA filed with FDA (2008) & additional studies required by FDA (2009)	\$174	Raxibacumab is an antitoxin used to treat anthrax and, along with vaccines and antibiotics, is part of a three-pronged approach taken by the USG to prepare for and respond to an anthrax attack. \$8M was added to the contract to support studies required by the FDA. Cangene/ Emergent submitted their BLA to the FDA in July 2014.
	7/2009 (Option)	Completed (2012)	HGS	45,000 doses delivered of 45,000 contracted	\$152 (2009) \$8 (2011)	
Anthrax Immune Globulin (AIG)	9/2005 (Base)	Completed (2011)	Cangene	10,000 doses delivered	\$144 (2005) \$16.6 (2012)	AIG® is an antitoxin used to treat anthrax and, along with vaccines and antibiotics, is part of a three-pronged approach taken by the USG to prepare for and respond to an anthrax attack.
Replenishment of Anthrax Antitoxins	9/2013	N/A	Elusys	N/A	\$0.1	Base award only.
	9/2013	N/A	Emergent	Cell bank will be delivered to CIADMs in 2014	\$0.45	Procurement of cell bank used to manufacture monoclonal anthrax antitoxins as a risk mitigation strategy.
	9/2013	N/A	Pharm-Athene	Cell bank will be delivered to CIADMs in 2014	\$1.08	Procurement of cell bank used to manufacture monoclonal anthrax antitoxins as a risk mitigation strategy.
	9/2013	Ongoing	Glaxo-Smith-Kline	9,806 delivered of the 60,000 treatment courses. Cell bank will be delivered to CIADM in 2014	\$196.8	60,000 treatment courses of Raxibacumab to maintain current preparedness to 2017 and procurement of cell bank.
	9/2013	Ongoing	Cangene	18,404 liters of plasma delivered	\$63.4	10,000 treatment course equivalents of plasma to be collected and stored as plasma to maintain preparedness to 2018.
	9/2014	TBD	Glaxo-Smith-Kline	0 delivered of the 32,704 treatment courses	\$105	Additional treatment courses of Raxibacumab will maintain preparedness levels through 2018 allowing for SNS to incorporate future procurements into their multi-year budget.

**Table 1: Project BioShield Acquisition Contracts** *continued*

Countermeasure Area/Product	Date of Contract Award	Delivery to Strategic National Stockpile	Contract Recipient	Status at the Close of CY 2012	Total Funding (Millions)	Reason for Use of Authority
<b>Anthrax Vaccines</b>						
AVA (BioThrax®, Anthrax Vaccine Absorbed)	5/2005	Completed (2006)	Emergent (formerly BioPort)	10 million doses delivered	\$243	BioThrax® is the U.S.-licensed vaccine for anthrax and, along with antitoxins and antibiotics, is part of a three-pronged approach taken by the USG to prepare for and respond to an anthrax attack. Emergent submitted their supplemental BLA for post-exposure prophylaxis to the FDA in October 2014.
AVA (BioThrax®, Anthrax Vaccine Absorbed)	9/2007	Completed (2008)	Emergent	18.75 million doses delivered	\$448 (2008) \$8.7 (2012)	
rPA (Recombinant Protective Antigen)	11/2004	N/A	VaxGen	Terminated 12/19/05	\$2	Contract terminated.
<b>Botulism Therapeutics</b>						
Botulinum Antitoxin (HBAT) Therapeutic	9/2006	Ongoing	Cangene	148,702 doses delivered of 200,000 contracted In addition, all plasma necessary to manufacture an additional 100,000 doses has been collected and is being maintained by BARDA as frozen plasma.	\$415 (2006) \$61 (2011)	Equine-derived polyclonal sera to multiple strains of (A-G) of <i>C. botulinum</i> used as a therapeutic for botulism. Reevaluation of the requirement led to a decrease in the number of doses necessary in the SNS. Thus, HHS/BARDA has met the requirement. The contract was modified and \$61 million in additional funds were added to maintain the horse herd, stockpile plasma and continue stability testing of plasma and product in the SNS. This contract modification will ensure preparedness out to 2025.
<b>Smallpox Vaccine</b>						
Imvamune® MVA, (Modified Vaccinia Ankara) Smallpox Vaccine	6/2007 (Base)	Completed (2013)	Bavarian Nordic	20 million delivered of 20 million contracted	\$505 (2007) \$37 (2013)	Imvamune® is an attenuated smallpox vaccine designated for immunocompromised persons as part of the overall strategy using vaccines and antiviral drugs for preparedness to and response to a smallpox attack.
Imvamune® MVA, (Modified Vaccinia Ankara) Smallpox Vaccine Option to deliver 4 million doses	3/2013 (Option)	Completed 2014	Bavarian Nordic	4 million delivered of 4 million contracted	\$110 (2013)	

**Table 1: Project BioShield Acquisition Contracts** *continued*

Countermeasure Area/Product	Date of Contract Award	Delivery to Strategic National Stockpile	Contract Recipient	Quantities at the Close of CY 2012	Total Funding (Millions)	Reason for Use of Authority
Imvamune® MVA, (Modified Vaccinia Ankara) Smallpox Vaccine Option to deliver 4 million doses	9/2014 (Option)	Completed January 2015	Bavarian Nordic	4 million delivered of 4 million contracted	\$118 (2014)	Imvamune® is an attenuated smallpox vaccine designated for immunocompromised persons as part of the overall strategy using vaccines and antiviral drugs for preparedness to and response to a smallpox attack.
ST-246	5/2011	Ongoing	SIGA Tech. Inc.	1.2 million out of 1.7 million treatment courses	\$433 (2011)	The SNS formulary currently contains smallpox vaccine for the general population, smallpox vaccine for immunocompromised individuals and vaccinia immune globulin (VIG) to treat adverse reactions to the vaccine for the general population. ST-246 may be used to treat those individuals who are symptomatic with disease for which the vaccine has no efficacy. Late stage development and procurement of this drug complements the HHS formulary of medical countermeasures to provide an appropriate response after a smallpox incident. In addition, this contract works toward the USG goal of developing two smallpox antivirals.
<b>Medical Countermeasures for Radiological, Nuclear, and Chemical Threats</b>						
Potassium Iodide (Thyroshield)	3/2005	Complete	Fleming	4.8 million doses, deliveries complete	\$18	Provides capability for pediatric treatment Note: the PHEMCE reduced this requirement and the SNS does not currently maintain this product.
IV Calcium/Zinc DTPA (Diethylene triamine pentaacetic acid)	12/2005	Complete	Akorn	473,710 doses, deliveries complete	\$22	Decorporation agent for radio-nuclear treatment.

**Table 1: Project BioShield Acquisition Contracts** *continued*

Countermeasure Area/Product	Date of Contract Award	Delivery to Strategic National Stockpile	Contract Recipient	Status at the Close of CY 2012	Total Funding (Millions)	Reason for Use of Authority
G-CSF cytokine for neutropenia associated with exposure to ionizing radiation	9/2013	Completed Product is maintained under VMI.	Amgen	0/35,203 treatment courses  Note: this product will be maintained as Vendor Managed Inventory (VMI).	\$157.7	Neutropenia is one of the subsyndromes associated with exposure to ionizing radiation. Amgen's Neupogen® is approved by the FDA to treat neutropenia resulting from chemotherapy treatment and can be used under EUA for neutropenia associated with exposure to ionizing radiation.
GM-CSF cytokine for neutropenia associated with exposure to ionizing radiation	9/2013	Completed Product is maintained under VMI.	sanofi-aventis	0/4,340 treatment courses Change Note: this product will be maintained as Vendor Managed Inventory (VMI).	\$36.8	Neutropenia is one of the sub-syndromes associated with exposure to ionizing radiation. Sanofi-aventis' Leukine is approved by the FDA to treat neutropenia resulting from chemotherapy treatment. Funding will provide late stage development for additional non-clinical studies that may be necessary to use under an EUA. Sanofi-aventis will be pursuing approval for the ARS indication as well.
Midazolam to treat seizures associated with exposure to chemical nerve agents	9/2013	TBD	Meridian (Pfizer)	0/2.3 million treatment courses	\$60.8	Midazolam offers advantages over the current product in the SNS CHEMPACKs, diazepam. Midazolam is faster acting, longer acting and can be administered intramuscularly as opposed to intravenous for diazepam. Midazolam will replace diazepam as it expires in the CHEMPACKs. Funding will also support approval for status epilepticus in adults and pediatrics and seizures resulting from exposure to chemical nerve agents in adults and pediatrics.

**Table 2: Open Advanced Research and Development (ARD) Broad Agency Announcement Solicitations and Project BioShield Activities**

Name	URL	Pre-solicitation	Draft Solicitation	Final Solicitation	Closing Date	Expected Award Date	Reason for Use of Authority
CBRN MCM Development - BAA-CBNR-BAA-12-100-SOL-00011 "Rolling BAA"	<a href="https://www.fbo.gov/index?s=opportunity&amp;mode=form&amp;id=045ee83b87a8e95743fd68bb50e9e5a4&amp;tab=core&amp;_cview=1">https://www.fbo.gov/index?s=opportunity&amp;mode=form&amp;id=045ee83b87a8e95743fd68bb50e9e5a4&amp;tab=core&amp;_cview=1</a>	07/2013	n/a	07/2013	Open Continuous Until 7/2015	N/A	Continue to support development of critical medical countermeasures under advanced research and development.
BARDA-BAA-12-100-SOL-00014	<a href="https://www.fbo.gov/index?s=opportunity&amp;mode=form&amp;id=59a8bee92eb32ebd33098ec29dacc4c2&amp;tab=core&amp;_cview=1">https://www.fbo.gov/index?s=opportunity&amp;mode=form&amp;id=59a8bee92eb32ebd33098ec29dacc4c2&amp;tab=core&amp;_cview=1</a>	07/2013	n/a	07/2013	Open Continuous Until 7/2015	N/A	Continue to support development of platform technologies with the capability to enhance both influenza and CBRN medical countermeasures.
RFP-15-100-SOL-00007	<a href="https://www.fbo.gov/index?s=opportunity&amp;mode=form&amp;id=929c9db3b80419ac1f4e2a0d11dd216b&amp;tab=core&amp;_cview=1">https://www.fbo.gov/index?s=opportunity&amp;mode=form&amp;id=929c9db3b80419ac1f4e2a0d11dd216b&amp;tab=core&amp;_cview=1</a>	12/2014	n/a	12/2014	01/2015	TBD	Proposals to maintain the hyper-immune horse herd.
BARDA_THERMAL_BURN_MEDICAL_COUNTERMEASURES-01	<a href="https://www.fbo.gov/index?s=opportunity&amp;mode=form&amp;id=fcf1707bb7d83329014c7ac8e84bb3e3&amp;tab=core">https://www.fbo.gov/index?s=opportunity&amp;mode=form&amp;id=fcf1707bb7d83329014c7ac8e84bb3e3&amp;tab=core</a>	12/2014	n/a	12/2014	01/2015	TBD	Sources Sought Notice (SSN) for field care products for burns.
BARDA_THERMAL_BURN_MEDICAL_COUNTERMEASURES-02	<a href="https://www.fbo.gov/index?s=opportunity&amp;mode=form&amp;id=cec9d20fac123db186799371c3aeee02&amp;tab=core&amp;_cview=0">https://www.fbo.gov/index?s=opportunity&amp;mode=form&amp;id=cec9d20fac123db186799371c3aeee02&amp;tab=core&amp;_cview=0</a>	12/2014	n/a	12/2014	01/2015	TBD	Sources Sought Notice (SSN) for definitive care products for burns.

## 1.4 EMERGENCY USE AUTHORIZATION

In a public health emergency, potentially useful products may be available, but are not yet FDA approved for the particular use contemplated. Section 564 of the Federal Food, Drug, and Cosmetic (FD&C) Act (21 U.S.C. 360bbb-3), as amended by section 4 of the Project BioShield Act of 2004 and by the Pandemic and All-Hazards Preparedness Reauthorization Act of 2013 (PAHPRA), permits the FDA Commissioner to issue an Emergency Use Authorization (EUA) to authorize the use of an unapproved medical product, or to authorize an unapproved use of an approved medical product, based on a declaration of emergency or threat of emergency by the HHS Secretary justifying the authorization. Such a declaration may be issued based on a (a) determination by the Secretary of Homeland Security (DHS) of a domestic emergency, or a significant potential for a domestic emergency, involving a heightened risk of attack with a CBRN agent(s); (b) determination by the Secretary of Defense of a military emergency, or a significant potential for a military emergency, involving a heightened risk to U.S. military forces of attack with a CBRN agent(s); (c) determination by the HHS Secretary of a public health emergency, or a significant potential of a public health emergency, that affects or has a significant potential to affect national security or the health and security of United States citizens living abroad and that involves a CBRN agent(s) or a disease or condition that may be attributable to such agent or agents; or (d) identification by the Secretary of DHS of a material threat pursuant to section 319F-2 of the Public Health Service (PHS) Act [42 U.S.C. 247d-6b] sufficient to affect national security or the health security of United States citizens living abroad.<sup>1</sup>

On July 26, 2007, FDA published a guidance document on FDA's policies for authorizing the emergency use of medical products under section 564 of the FD&C Act.<sup>2</sup> In January 2014, FDA issued a [question and answer document](#) to respond to questions raised by public health

<sup>1</sup> Pursuant to section 903 of the FD&C Act and existing delegations of authority, codified at 21 CFR part 5, the Secretary has delegated the authority to issue an EUA under section 564 to the FDA Commissioner.

<sup>2</sup> <http://www.fda.gov/RegulatoryInformation/Guidances/ucm125127.htm>; See Notice in the *Federal Register*: 72 Fed. Reg. 41,083 (July 26, 2007). The 2007 guidance does not include amendments to the EUA authority or the addition of new emergency use authorities resulting from PAHPRA. FDA is in the process of updating this guidance to reflect the PAHPRA changes to this authority and new emergency use authorities.



stakeholders about PAHPRA's amendments to the EUA authority and establishment of new authorities related to the emergency use of MCMs during CBRN emergencies.<sup>3</sup>

### ***EUAs Issued in 2014***

PAHPRA amended the determination and declaration sections of the FD&C Act, as described above, to facilitate issuance of EUAs before a declared public health emergency for preparedness purposes. FDA issued nine new EUAs (and subsequently amended and reissued several of these), and amended and reissued one EUA originally issued in 2013, during the reporting period based upon this authority.<sup>4</sup>

### **Pandemic Influenza Preparedness**

On April 19, 2013, under section 564(b)(1)(C) of the FD&C Act (21 U.S.C. 360bbb-3(b)(1)(C)), the Secretary of HHS determined that there is a significant potential for a public health emergency that has a significant potential to affect national security or the health and security of U.S. citizens living abroad and that involves the novel influenza A (H7N9) virus. At the same time, under section 564(b)(1) of the FD&C Act, and on the basis of such determination, the Secretary of HHS declared that circumstances exist justifying the authorization of emergency use of in vitro diagnostics for detection of the novel influenza A (H7N9) virus. Having concluded that the criteria for issuance of the Authorization under section

<sup>3</sup><http://www.fda.gov/downloads/EmergencyPreparedness/Counterterrorism/MedicalCountermeasures/UCM380269.pdf>.

<sup>4</sup>See FDA EUA website for more information, available at <http://www.fda.gov/EmergencyPreparedness/Counterterrorism/MedicalCountermeasures/MCMLegalRegulatoryandPolicyFramework/ucm182568.htm#note>

564(c) of the FD&C Act were met, FDA issued two EUAs in 2014 for the detection of novel influenza A (H7N9) virus (Table 1).

### **Middle East Respiratory Syndrome Coronavirus Preparedness**

On May 29, 2013, under the same authorities described above, the Secretary of HHS determined that there is a significant potential for a public health emergency that has a significant potential to affect national security or the health and security of U.S. citizens living abroad and that involves the Middle East Respiratory Syndrome Coronavirus (MERS-CoV). At the same time, on the basis of such determination, the Secretary of HHS declared that circumstances exist justifying the authorization of emergency use of in vitro diagnostics for detection of MERS-CoV.

On June 10, 2014, FDA reissued in its entirety – with amendments incorporated based on a request by CDC – the EUA originally issued on June 5, 2013, authorizing the use of the CDC Novel Coronavirus 2012 Real-time RT-PCR Assay for the presumptive detection of MERS-CoV in patients with signs and symptoms of MERS-CoV infection in conjunction with clinical and epidemiological risk factors (Table 1).

### **Ebola Virus Preparedness and Response**

On September 22, 2006, under the same authorities described above, then-Secretary of DHS, Michael Chertoff, determined, pursuant to section 319F-2 of the PHS Act (42 U.S.C. § 247d-6b), that the Ebola virus presents a material threat against the United States popula-



tion sufficient to affect national security. On August 5, 2014, on the basis of such determination, the Secretary of HHS declared that circumstances exist justifying the authorization of emergency use of in vitro diagnostics for detection of Ebola virus. Having concluded that the criteria for issuance of the Authorization under section 564(c) of the FD&C Act were met, FDA issued seven EUAs in 2014 for the detection of Ebola virus, several of which were subsequently amended (Table 1).

### **FDA Pre-emergency Activities**

As part of emergency preparedness activities, FDA continues to review and provide feedback on pre-EUA submissions for multiple products across all medical product lines.

**Table 3. Emergency Use Authorizations Issued by FDA in 2014**

Number	Issuance Date	Medical Countermeasure	Requester	Type
<b>Novel influenza A (H7N9) Virus [Avian Influenza A(H7N9) virus]</b>				
1	04/25/2014	A/H7N9 Influenza Rapid Test	Arbor Vita Corporation	Initial
2	02/14/2014	Quidell Lyra Influenza A Subtype H7N9 Assay	Quidell Corporation	Initial
<b>Middle East Respiratory Syndrome Coronavirus (MERS-CoV)</b>				
3	06/05/2013	CDC Novel Coronavirus 2012 Real-time RT-PCR Assay	CDC	Initial
3.a	06/10/2014	CDC Novel Coronavirus 2012 Real-time RT-PCR Assay	CDC	Amendment <sup>a</sup>
<b>Ebola Virus</b>				
4	12/23/2014	LightMix Ebola Zaire rRT-PCR Test	Roche Molecular Systems, Inc.	Initial
5	11/10/2014	RealStar Ebolavirus RT-PCR Kit 1.0	Altona Diagnostics, GmbH	Initial
5.a	11/26/2014	RealStar Ebolavirus RT-PCR Kit 1.0	Altona Diagnostics, GmbH	Amendment <sup>b</sup>
6	10/25/2014	BioFire Defense FilmArray Biothreat-E test	BioFire Diagnostics, LLC	Initial
7	10/25/2014	BioFire Defense FilmArray NGDS BT-E Assay	BioFire Diagnostics, LLC	Initial
7.a	03/02/2015	BioFire Defense FilmArray NGDS BT-E Assay	BioFire Diagnostics, LLC	Amendment <sup>c</sup>
8	10/10/2014	CDC Ebola Virus VP40 Real-time RT-PCR Assay	CDC	Initial
8.a	03/02/2015	CDC Ebola Virus VP40 Real-time RT-PCR Assay	CDC	Amendment <sup>d</sup>

Number	Issuance Date	Medical Countermeasure	Requester	Type
9	10/10/2014	CDC Ebola Virus NP Real-time RT-PCR Assay	CDC	Initial
9.a	03/02/2015	CDC Ebola Virus NP Real-time RT-PCR Assay	CDC	Amendment <sup>e</sup>
10	08/05/2014	DoD EZ1 Real-time RT-PCR Assay	DoD	Initial
10.a	10/10/2014	DoD EZ1 Real-time RT-PCR Assay	DoD	Amendment <sup>f</sup>

- a. While FDA originally issued this EUA on June 5, 2013, it is included in this report because FDA reissued the June 5, 2013, EUA in its entirety on June 10, 2014, to address amendments to the June 5 EUA requested by CDC. The amendments, among other things, authorize the expanded use of the CDC assay to include testing persons who may not be exhibiting signs and symptoms associated with MERS-CoV infection, but who meet certain epidemiological risk factors.
- b. FDA originally issued this EUA on November 10, 2014. FDA reissued the November 10, 2014, EUA in its entirety on November 26, 2014, to address amendments to the November 10 EUA requested by Altona Diagnostics GmbH. The amendments allow, in addition to Altona Diagnostics GmbH, distributors that are authorized by Altona Diagnostics GmbH to distribute the Kit with specific conditions of use applicable to such authorized distributor(s).
- c. FDA originally issued this EUA on October 25, 2014. FDA reissued the October 25, 2014, EUA in its entirety on March 2, 2015, to address amendments to the October 25 EUA requested by BioFire. The amendments, among other things, authorize use of plasma and serum specimens with the FilmArray NGDS BT-E Assay in addition to whole blood.
- d. FDA originally issued this EUA on October 10, 2014. FDA reissued the October 10, 2014, EUA in its entirety on March 2, 2015, to address amendments to the October 10 EUA requested by CDC. The amendments authorize use of the assay with the BioRad CFX96 Touch Real-Time PCR instrument, in addition to the Applied Biosystems (ABI) 7500 Fast Dx Real-Time PCR instrument.
- e. FDA originally issued this EUA on October 10, 2014. FDA reissued the October 10, 2014, EUA in its entirety on March 2, 2015, to address amendments to the October 10 EUA requested by CDC. The amendments authorize use of the assay with the BioRad CFX96 Touch Real-Time PCR instrument, in addition to the Applied Biosystems (ABI) 7500 Fast Dx Real-Time PCR instrument.
- f. FDA originally issued this EUA on August 5, 2014. FDA reissued the August 5, 2014, EUA in its entirety on October 10, 2014, to address amendments to the August 5 EUA requested by DoD. The amendments to the August 5, 2014, letter authorize the use of the DoD EZ1 rRT-PCR Assay in whole blood or plasma specimens, in addition to Trizol-inactivated whole blood or Trizol-inactivated plasma specimens, from individuals in affected areas with signs and symptoms of Ebola virus infection or who are at risk for exposure or may have been exposed to the Ebola Zaire virus (detected in the West Africa outbreak in 2014) in conjunction with epidemiological risk factors, by laboratories designated by DoD.

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