CHEMICAL/BIOLOGICAL/ RADIOLOGICAL/NUCLEAR BAA

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Resilient People. Healthy Communities. A Nation Prepared.

Overview

- Successes
- Challenges
- What's new
- Specific updates for research areas of interest

Previous Successes

- CBRN first issued the BAA in 2010
- Since then, BARDA's CBRN Division has invested in over 85 candidates and built a robust pipeline of candidates with the potential to transition to procurement under PBS
- Several candidates have been down selected for failure to meet scientific milestones
  - In alignment with the MCM Review requested by the Secretary of HHS
- Several candidates have, or will shortly, transitioned to potential procurement under PBS

Challenges Moving Forward

- Funding
  - Estimate that we will need in excess of $600M for ARD to support our existing programs
  - FY2016 funding will be $415M for ARD and potentially $107M for CARB
  - Try to transition mature programs to PBS if we receive the PB request but under a CR will most likely receive $255M
- We need products that offer *significant* advantages over what we currently have in order for us to consider funding
  - Fewer doses (a single dose)
  - Less expensive (total life-cycle management costs)
- We evaluate potential funding needed to support approval/licensure against life-cycle management costs of existing candidates – ROI, opportunity costs

What's New for the BAA

- Moving from Cat 1, Cat 2, Cat 3 designation to a two tiered system – acceptable/unacceptable
  - Proceed to negotiations – neither guarantees award
    - Acceptable as is
    - Acceptable with revisions
  - Reject full proposal
- Allows for expedited contract award
  - Supports mission
  - Allow for faster responses to companies
- Correspondences will need to be tailored more specifically to the review outcome
  - Not generate excitement over entering into negotiations
  - Clearly articulate elements for proposal revision/resubmission

Continuous Manufacturing

- BARDA strives to drive innovation in support of the underlying capabilities necessary to develop and manufacture medical countermeasures that align with the BARDA mission and PHEMCE goals.
- BARDA is interested in the implementation of Continuous Manufacturing (CM) processes for advanced development of therapeutics.
  - Although CM is not required for successful proposal submission
- BARDA is particularly interested in CM development and use for:
  - Existing BARDA funded products,
  - New potential product candidates,
  - Measurable impact on efficiencies compared to traditional batch manufacturing.
- Potential offerors are encouraged to consider incorporating aspects of CM into their product development plan.
  - Proposals may include CM technology development or improvements as well as preliminary steps to evaluate the feasibility of CM as compared to traditional batch processes.

Total Life-Cycle Costs

- BARDA will now incorporate offeror's estimate of the total life-cycle management costs for development, procurement, storage, and reprocurement of candidate products as part of the evaluation
  - Assist with multi-year budget planning
  - Offerors will have a better understanding of the commitment they are requesting of BARDA/PHEMCE
  - This should be a normal process for any company developing candidates in advanced development
  - Forces offerors to estimate a procurement cost for the product
- The Offeror has proposed a product with 1) a sustainable commercial value to ensure long term access to the medical countermeasure 2) a feasible technical approach that optimizes the product in a way that reduces the Total Life-Cycle Costs for the proposed countermeasure throughout the product's life cycle.
- A template will be made available on our website

AOI#1 Vaccines

- No Proposed Revisions for Vaccines
- Reserve the potential to modify BAA in FY16 if CARB funding is available to support AMR vaccines

AOI#2 Antitoxins and Therapeutic Proteins

- Goal:
  - Development of peptide or small molecule antitoxins, and other novel compounds, with innovative formulations offering enhanced long-term stability. The candidate must be at TRL-6 (active IND and human safety data).
  - ~~Development of novel formulations of monoclonal anthrax antitoxins already at TRL-7~~. (Removed)
  - Development of antibody treatments and other therapeutic agents for viral hemorrhagic fevers viruses. Programs must be at TRL-5 with a lead candidate identified.
- Technical Point of Contact: Dr. Chia-Wei Tsai chia-wei.tsai@hhs.gov

AOI#3 Broad Spectrum Antimicrobials

- BARDA will still focusing on biodefense pathogens
- The U.S. National Strategy and Action Plan to Combat Antibiotic Resistant Bacteria (CARB) were released in September 2014/ March 2015
- BAA language is modified to align with the CARB Initiative:
  - Alignment to CDC threat list pathogens
  - Emphasis on therapies addressing Gram negative infections
  - Inclusion of novel therapeutic approaches
    - Microbiome modulation, antibody based approaches, host-directed therapies, etc.

AOI#3 Broad Spectrum Antimicrobials

- 3.2 Develop new small molecule drugs that treat or prevent resistant microbial infections either alone or in combination with another therapeutic; (**Added text**)
- 3.3 Develop non-traditional antibacterial therapeutics that treat or prevent resistant infections either alone or in combination with another therapeutic. Examples include, but may not be limited to, antibody-based approaches, host-directed therapies including immunomodulators, antimicrobial peptides, phage, microbiome approaches; and approaches to inhibit quorum sensing and expression of bacterial virulence factors. (**Added Text**)
- Products should possess activity against one or more of the pathogens categorized as serious, urgent, or concerning threats in the September 2013 CDC Report titled Antibiotic Resistance Threats in the United States, 2013. Competitiveness will be enhanced if the proposed product(s) possess activity against Gram negative pathogens. (**Added Text**)

AOI#4 Rad/Nuc

- Clarified language to align with the PHEMCE SIP
  - Based on the near-, mid-, and long-term objectives for radiological and nuclear threats prescribed by the *2014 Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) Strategy and Implementation Plan* (p. 80-81) http://www.phe.gov/Preparedness/mcm/phemce/Documents/2014-phemce-sip.pdf), BARDA is interested in the following programmatic areas for Area of Interest #4: (Revised Text: more clearly cited 2014 PHEMCE SIP)
- Also clarified language for PEP, field use, and desired MCM characteristics
- Acute Radiation Syndrome (ARS) and the Delayed Effects of Acute Radiation Exposure (DEARE)
  - "BARDA will support evaluation of a number of commercial drugs for repurposing to enable use in the treatment of exposure to radiological and nuclear agents, ensuring that at-risk population needs are considered.

AOI#4 Rad/Nuc

- Clarified priorities
  - The subsyndromes of current interest to BARDA are the thrombocytopenia component of the hematopoietic subsyndrome and the gastrointestinal subsyndrome. Proposals that address these areas will be given higher priority over proposals addressing other subsyndromes. Additionally, proposed MCMs that target underlying pathophysiological endpoints with a clear etiology to the prioritized subsyndromes are also of interest.

AOI#4.5 Burn Products

- No changes
- FY2015 saw programs transition to PBS for late stage development and potential procurement
  - Silver impregnated field dressings
  - Non-surgical debridement technologies
  - Cell-based skin substitutes
  - Auto-graft sparing technologies

AOI#5 Chemical

- ~~5.1.1 Development of a neuroprotectant to prevent and treat hypoxic and/or excitotoxic brain damage~~

- 5.3 Vesicants: Development of medical countermeasures that limit harmful aspects of exposure to vesicating agents such as sulfur mustard and Lewisite, including topical (skin and eye) and systemic preparations. (Revised text: added sulfur to clarify)

- 5.7 Development of chemical decontamination solutions for use on intact /or injured human skin (improved efficacy compared to soap and water). Proposed solutions must be safe for whole-body use and amenable to use in a mass-casualty situation. (Revised text: added last sentence)

Area of Interest 6: Clinical Diagnostics

- Biodosimetry
- Biothreat Diagnostics
- Antimicrobial Resistance Diagnostics

Biodosimetry

Note- BARDA continues to fund a large portfolio of Biodosimetry projects. New projects must be sufficiently compelling to displace an existing project.

1. Self Assessment Tools
2. Biodosimetry Diagnostics (Higher Maturity)
    1. Point of Care (POC)
    2. High Throughput (Laboratory)
3. Improvements to Dicentric Chromosome Assay (DCA)

Biothreat Diagnostics

- Anthrax Diagnostics
  - Point of Care (CLIA Waivable)
    - Systems
    - Lateral Flow (with USG provided antibodies) (New)
  - Laboratory (Widely Placed Platforms)
- Hardware Platform Development
  - POC (CLIA Waivable)
  - Sample Collection and Sample Preparation
- Biothreat Knowledge Development
  - Marker Identification
  - Marker concentration with disease progression

Antimicrobial Resistance (AMR) Diagnostics (New)

- Products must work for both Public Health Priority Pathogens and Biothreats!
- AMR Identification
  - Rapid POC Platforms (Molecular or Phenotypic)
  - Laboratory (Molecular or Rapid Phenotypic)
  - Rapid Sequencing with clinical lab appropriate workflow
- Viral vs. Bacterial Diagnostic
  - POC, CLIA waivable
- Antibiotic Clinical Trial Support Diagnostics
  - Rule in / rule out candidates
  - Assess resistance profile