

NBSB

MCM Markets and Sustainability: The National Biodefense Science Board Approach

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Sustainability Working Group*

Global Health Security Initiative
Public Health Emergency Medical Countermeasure Workshop
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NATIONAL BIODEFENSE SCIENCE BOARD



Purpose

“To provide expert advice to the Secretary on scientific, technical and other matters of special interest to HHS regarding current and future chemical, biological, nuclear and radiological agents, whether naturally occurring, accidental or deliberate. The Board may also provide advice and guidance to the Secretary on other matters related to public health emergency preparedness and response.”

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Ex-Officio Members: Twenty one from across the USG

NBSB Established Working Groups

- Pandemic Influenza Working Group
- Disaster Medicine Working Group
- Medical Countermeasure R&D Processes Working Group
- Medical Countermeasures Markets & Sustainability Working Group
- Personal Preparedness Working Group

Established at the Request of the Secretary

- Disaster Mental Health Subcommittee (May 2008)



Recommendations to Date by the NBSB

Mar. 26, 2008	Recommended the Federal Education Training Interagency Group (FETIG) Charter be revised.
Jun. 18, 2008	Made recommendations expressing concerns about personal stockpiling of antibiotics.
Aug. 11, 2008	Citing scientific data demonstrating risks of homestockpiling, recommended policy makers move forward cautiously on the implementation of individual stockpiling programs.
Sep. 23, 2008	Recommended strategic improvements to the National Disaster Medical System (NDMS) and national medical surge capacity.
Oct. 14, 2008	Recommended that operational evaluations be performed during the pre-positioning of antibiotic countermeasure programs.
Nov. 18, 2008	Made recommendations for protecting, preserving, and restoring individual and community mental health in catastrophic health event settings.
Jul. 17, 2009	Made recommendations on 2009 H1N1 Influenza countermeasures.
Oct. 14, 2009	Submitted a letter to the Secretary HHS supporting the 2009 H1N1 vaccine programs.



Markets and Sustainability Working Group Charge

- **Review existing financial, policy and regulatory issues that influence industry willingness to invest in the development of MCMs.**
- **Identify real and perceived barriers-to-entry that have affected industry participation in the development of medical countermeasures.**
- **Identify incentives that will encourage industry partners that are currently reluctant to engage in MCM development.**
- **Inform the NBSB discussions and recommendations regarding the development of sustainable markets for MCMs and how to encourage investment by the private sector in the development, manufacturing and distribution of MCM.**

- **Contracting with USG can be slow, unwieldy, expensive and opaque.**
- **Lack of clarity increases industry risk.**
Procurement size, warm-base requirements, length of review, reliability of sustained funding, etc.
- **Lack of transparency increases industry risk.**
Contract review process, rate of issuance of new proposals, requirement generation, etc
- **Lengthy process to generate requirements.**
- **With a contract in place, situation improves.**
HHS viewed as cooperative, helpful, responsible and responsive.

- **Perceived lack of coordination between development activities and regulatory responsibilities remains a concern to industry.**

Lack of clarity regarding usable product definitions, seeming differences in FDA approaches (e.g., between CBER and CDER) to providing guidance to industry, etc.

- **Industry reliance upon USG for key components of licensure submissions can lead to lack of accountability.**

Disease studies, toxicology reports, access to BSL facilities, etc.

- **Advanced Development needs more dedicated \$\$\$, separate from BioShield procurement.**
- **Advanced Development needs contracting flexibility.**
Cost-plus-fee contracting flexibility is appropriate for advanced development and would reduce industry risk.
- **Multiyear appropriations of funding.**
 - Drug development and corporate investment/planning is a long-term process.
 - *Multiyear funding with carry-over authority, with multi-year contracting authority, would signal USG commitment and increase industry sense of long-term stability.*
- **Bioshield expires in 2013; needs reauthorized, funding.**
BioShield funds should not be diverted to fund other initiatives.
Inadequate, inconsistent funding delays the journey to MCM licensure.



Assistant Secretary for Preparedness & Response
Washington, D.C. 20201

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APR 16 2009

Dear Dr. Quinlisk,

The development, acquisition, and effective use of medical countermeasures (MCMs) is a critical element of our mission to prevent, prepare for, and respond to the adverse health effects of public health emergencies. To ensure that a flexible and responsive capability is in place, a strong public-private partnership becomes a national security imperative. Establishing and sustaining partnerships with industry for the development of medical countermeasures remains a high priority and presents formidable challenges

The establishment of the Biomedical Advanced Research and Development Authority (BARDA) under the Pandemic and All-Hazards Preparedness Act made substantive strides toward establishing the United States Department of Health and Human Services (HHS) as a more viable business partner for industry, particularly with regard to the development of MCMs for which there is no commercial market. BARDA serves as the focal point for the advanced development of MCMs and provides funding to support development in areas with insufficient commercial interest. However, barriers and obstacles remain and more needs to be done.

BARDA and its partners in the Public Health Emergency Medical Countermeasures Enterprise request the Board's continuing input on identifying and achieving the ways and means needed to develop and sustain fuller engagement by the biotechnology and pharmaceutical industries to support our vital national security mission. The American people depend on this Department to ensure an ongoing stream of MCMs to enhance protection against man-made and natural threats.

We look forward to engaging the Board's wide range of expertise in providing the Secretary advice on this pressing matter.

Sincerely,

RADM William C. Vanderwagen, M.D.
Assistant Secretary for Preparedness and Response

“... BARDA and its partners ... request the Board’s continuing input on identifying and achieving the ways and means needed to develop and sustain fuller engagement by the biotechnology and pharmaceutical industries to support our vital national security mission. ...”



- **Situation Assessment – Spring 2009**

- Pandemic Countermeasures: Well underway
 - Most harnessed existing technologies
 - Novel technologies being explored, but not yet in hand
- CBRN Countermeasures: Progress too slow
 - Many pathogen targets need to be countered
 - Most MCMs in early stages of development
 - Should development be centralized or decentralized?
 - Nuclear protectants, therapeutic agents: Highly dependent on animal-model agreement, highly dependent on specific criteria, available monies seem "less than" for biological threats

- **Inventory of Issues Constraining or Enabling Industrial Involvement with Medical Countermeasure Development**

- "the grid," "the matrix," the inventory
- Not prioritized, not scored, not priced



Federal Register Notice – Request for Public Comment

- Federal Register Vol. 74, No. 153
Published Tuesday, August 11, 2009
- Request by the National Biodefense Science Board (NBSB) Medical Countermeasure Markets and Sustainability Working Group for public comment to their working document, *“Inventory of Issues Constraining or Enabling Industry Involvement in Medical Countermeasure Efforts”*.

Federal Register Notice – Request for Public Comment

- The inventory (or grid) includes factors that may discourage industry involvement or partnering with the U.S. Government in medical countermeasure development efforts, reported constraints to industry involvement, and potential solutions for relief from a particular constraint.
- The inventory has been catalogued by financial, legislative, scientific, human capital, regulatory, and societal elements.
- The Working Group wishes to solicit comment, feedback, and guidance from members of industry, other government agencies, and the public at large for consideration by the Working Group to strengthen and refine the document

“Inventory of Issues Constraining or Enabling Industrial Involvement ...”

Inventory of Issues Constraining or Enabling Industrial Involvement with Medical Countermeasure Development

18 Apr 09

Problem / Category	Potential Solution	Approach / Advantages / Action	Problem / Limitation
FINANCIAL			18 Apr 09
Capital requirements to establish safety, efficacy, validated manufacture	Increase financial return after risking capital to industry-standard rates Reduce requirement for private capital for advanced development	Increased federal funding for advanced development, in the form of cost-reimbursement contracts and rewarding private-capital investments as milestone payments and at procurement	Risk of distraction of large industry partners from commercial mission or dilution of effort (potential conflict with fiduciary responsibility to shareholders of publicly-traded companies)
Risk of technical failure of vaccine development effort	Decentralized discovery / centralized development and manufacture	Reimbursement of development costs at cost+15%, with return-on-working-capital at 22%, and cost-of-money-for-capital at 15%	Lack of interest, given opportunity costs Congressional tolerance for anticipatable frustrations is unknown
Tax incentives	Enhance current incremental R&D tax credit (increase, make refundable)	Currently, 20% for qualified R&D expenses and 50% for clinical-trial expenses	
	New investment tax credit (20%) for construction of new R&D and manufacturing facilities for biosecurity purpose and emerging-infectious disease purposes (with refundable and/or transferable provisions)	Enhance net revenue	Not yet authorized
Revenue enhancements based on Intellectual Property	Enhance current product or use patent-term restoration and/or extension (revise formula) Allow extension of patent-term for licensed product that gains a CBRN application (akin to adding pediatric indication). Allow transfer of patent-term extension to another product or	Current formula, provided via BioShield II (2005): Patent extension supplemented by [1/2 time from IND to filing BLA + full time from filing to license]	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> Draft Page 2 of 9 </div>

“Inventory of Issues Constraining or Enabling Industrial Involvement ...”: The Rows, 1 of 2

Problem / Category	Potential Solution	Approach / Advantages	Problem / Limitation
FINANCIAL			
Capital			
Risk of failure			
Tax incentives			
Intellectual property			
Priority review vouchers			
Limited market size			
Surge issues			
LEGISLATIVE			
Predictability of appropriations			
Flexibility in payment schedules			
SCIENTIFIC			
Untrodden development pathways			
Technology transfer (basic → advanced dev)			
HUMAN CAPITAL			
Grow the talent pool			



Problem / Category	Potential Solution	Approach / Advantages	Problem / Limitation
REGULATORY			
Evolving regulatory requirements			
Requirements to comply with USG contracts			
Adequacy of FDA review & consult resources			
SOCIETAL			
Contribution to national security			
LEGAL			
Product liability			
Antitrust provisions			
COROLLARY			
Commercial market as means to support future R&D			
Approaches for developing-world situations			



- **Critical National Security Issues:**

- Complexity of drug development requires time, persistence
 - Discovery and development cannot be “surged”
- Needs to address a broad spectrum of threats
- **Inconsistent, inadequate funding for CBRN MCMs is incompatible with the consequences of these threats**
- Urgency implies getting started, peddling faster
- **Industry participation essential**

- **Requires Unprecedented Cooperation & Integration Across the USG and Industry**

- **Pivotal Role of U.S. Congress:** Appropriate and sustained funding, plus incentives to harness full national industrial capacity
- HHS: Visible pathways forward need to be clearly identified
- Industry: Innovation and expertise need to be harnessed

- **Refine “Inventory of Issues Constraining or Enabling Industrial Involvement with Medical Countermeasure Development”.**
- **Consult with Department of Health & Human Services, industry, and others on how to overcome the constraints and enable more industrial involvement.**
- **Remind all involved of the urgency to overcome the status quo and accelerate the pace of MCM development.**

- **The MCM Markets & Sustainability Working Group will be presenting the “Inventory of Issues.....” Poster at tonight’s poster session from 6:00 p.m. – 8:00 p.m.**
- **Requests for copies of the inventory grid and accompanying Comment Revision Form should be sent to Don Malinowski: donald.malinowski@hhs.gov**

Contact the NBSB

<http://www.hhs.gov/aspr/omsph/nbsb/index.html>

