



NBSB Report on the Implementation of the National Biodefense Strategy

December 13, 2018



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National Biodefense Science Board (NBSB) Report on the Implementation of the National Biodefense Strategy

The Assistant Secretary for Preparedness and Response asked the National Biodefense Science Board (NBSB) to review the [2018 National Biodefense Strategy](https://www.whitehouse.gov/wp-content/uploads/2018/09/National-Biodefense-Strategy.pdf)¹ and the National Security Presidential Memorandum entitled “[Support for National Biodefense](https://www.whitehouse.gov/presidential-actions/presidential-memorandum-support-national-biodefense/)”² and to respond to the three questions below.

Question #1: The Strategy charges the Biodefense Coordination Team [BCT] with identifying “opportunities to increase coordination with and leverage the capabilities of non-federal partners.” How can the Federal government best coordinate with non-federal stakeholders?

Option 1: Issue a Request for Information (RFI) to solicit feedback from non-federal stakeholders utilizing a posited scenario (Appendix 1) to focus responses.

- **Pros:** This is a cost-effective process by which a large amount of information could be collected quickly.
- **Cons:**
 - RFI “fatigue” as the BCT is planning to release a RFI in January 2019 to solicit feedback from federal stakeholders.
 - Timely development of a different version of the RFI suitable for different types of communities and organizations (Appendix 2).

Option 2: Commence a targeted outreach campaign to seek feedback from industry, academia, state and local governments and public non-governmental groups.

- **Pros:**
 - Likely to result in more nuanced recommendations to increase coordination with non-federal partners than an RFI alone.
 - Networking could begin for the development of and execution of emergency exercises.
 - Could be efficiently implemented beginning with professional organizations, advertisement in business trade journals, use of social media and state/local newsletter feeds (Appendix 3).
 - Professional/trade shows provide avenues for direct engagement through session participation, exhibitor booths and webinars.
- **Cons:**
 - Could be more costly than the RFI and require more time.

¹ <https://www.whitehouse.gov/wp-content/uploads/2018/09/National-Biodefense-Strategy.pdf>

² <https://www.whitehouse.gov/presidential-actions/presidential-memorandum-support-national-biodefense/>

- Could miss the privately employed, retired, students and non-working citizens.

Option 3: Sponsor an in-person Stakeholder’s meeting with streaming capability to review the Strategy, learn what others are doing and solicit input on how to best coordinate across the spectrum of biodefense stakeholders.

- **Pros:** Would allow access and participation across the country with use of streaming capability.
- **Cons:** May be expensive and require a longer lead-time for execution.

The NBSB recommends Option 1 as it is the most cost-effective, most quickly executed and most likely to reach the largest and most diverse group of stakeholders.

Question #2: From your perspective, what are the most significant challenges related to implementation of the Strategy?

- Developing a comprehensive communication plan to promote awareness of the Strategy among all stakeholders (every citizen, local/state agencies, private industry and civic/volunteer organizations).
- Identifying both minimal and optimal resources required and the processes to access those resources. The NBSB notes that “resources” are a broad category that may include: funding, personnel, supplies, medical products, distribution centers.
- Defining metrics of success for each objective that are: specific; quantifiable and time-actionable; and used to monitor and report implementation progress.
- Using the metrics devised to identify gaps and assist in problem-solving and resolution.

Question #3: What are the highest priority actions necessary to implement the objectives of the Strategy?

The NBSB concludes that it is premature to make recommendations on prioritization of implementation actions.

The NBSB notes two action-items recommended for completion before actual prioritization could occur:

1. Focus on the completion of the BCT Strategy goals and objectives metric mapping process.
2. Utilize a tiered approach in the metric mapping process to allow categorization as Tier 1, Tier 2, etc. The criteria for each tier could include: timeliness to action/awareness, timeliness to success, level of visibility or responsiveness, overall impact, funding requirements, feasibility of validation by exercises, level of volunteerism.

Appendix 1: Scenarios (Question #1)

The NBSB has provided examples³ of a scenario-based situations to facilitate thought-provoked responses from non-federal stakeholders. It is intended that language and details be amended depending on use (e.g., RFI to general populous or local agencies developing the exercises). Each example provides a slightly different approach to illustrate this point.

1. Scenario #1: Avian Influenza

Day 0-7: A lethal, highly contagious, fulminant influenza emerges at the Haj in Mecca, Saudi Arabia. Health authorities do not recognize outbreak in time to limit return of pilgrims to their native lands. Preliminary reports are 20% lethality, reproductive number of 10 ($R_0=10$), minimal sequence homology with current vaccines, and resistance to antivirals in the strategic national stockpile.

Day 8-14: Thirty-two US cities and towns report 300 patients admitted for severe upper respiratory syndrome with 50 requiring ventilator support. CDC estimates a minimum 8,000 persons (airline, family, workplace and healthcare workers) have been exposed.

2. Scenario #2: Unknown viral fever

Day 0-7: An international traveler arrives back in the US from vacation. After being home for five days, he develops a fever and vomiting. By time this patient seeks medical treatment and healthcare providers discover it is highly contagious, one-half of those who have contracted it die.

Day 8-14: Thirty-two US cities and towns report 300 patients admitted for severe fever and vomiting with 50 requiring ventilator support and isolation. CDC estimates a minimum 8,000 persons (airline, family, workplace and healthcare workers) have been exposed. CDC coordinating on identifying the pathogen and potential treatments.

3. Scenario #3: Botulinum Toxin

Day 0: Vendor drinks at a sporting event in Santa Fe are poisoned with botulinum toxin.

Day 1: The Emergency Medicine Departments report a total of seven adult and three teenagers with double-vision, drooping eyelids, and some respiratory difficulty.

Day 2: Three hundred people present with similar symptoms and 35 require immediate intubation. There are 120 in moderate respiratory distress.

³ It is also noted that a tabletop scenario for management of anthrax was developed by the AAP in collaboration with the CDC and published: Chung S, et al. Addressing children's needs in disasters: a regional pediatric tabletop exercise. Disaster Med Public Health Preparedness 2018. online January 15, 2018. doi.org/10.1017/dmp.2017.137

Appendix 2: Recommended areas of focus for RFI (Question #1)

Key areas of focus for the RFI for the non-federal partners should include:

- 1) listing of existing plans, and identification of gaps (for adults and children), to provide efficient communication and sharing of resources between national, state/local authorities and individual citizens
- 2) recommendation(s) on how local community leaders be identified and engaged
- 3) identification of capabilities and resources (monetary, equipment, personnel, etc.) which would be needed to prepare, respond and recover from an event
- 4) information needed to be formalized into preparedness plans and how could that be practiced in exercises/drills

Appendix 3: Suggested organizations and partners (Question #1)

Professional Organizations (examples):

- American Assoc. for the Advancement of Science (AAAS)
- American Society for Microbiology (ASM)
- Biotechnology Innovation Organization (BIO)
- American Veterinary Medical Association (AVMA)
- American Farm Bureau Federation (AFBF)

Business Trade Journals (examples)

- Wall Street Journal
- Bloomberg

Large Companies

- Amazon
- FedEx
- Grocery chains

Universities/Colleges/Schools

- At least two per state

Appendix 4: All Hazards Science Response Science Working Group

- Elizabeth Leffel, Ph.D., M.P.H, Chair
- Donald “Gray” Heppner, M.D., Co-Chair
- Prabha Fernandes, Ph.D., NBSB Chair
- Noreen Hynes, M.D., M.P.H.
- Joelle Simpson, M.D., M.P.H,
- Cathy Slep, M.D., M.P.H.
- Tammy Spain, Ph.D.