Assistant Secretary for Preparedness and Response (ASPR)

Joint NACCD and NBSB Future Strategies for Children Report

September 2018

Saving Lives. Protecting Americans.

DEPARTMENT OF HEALTH & HUMAN SERVICES · USA

ASPR

Joint NACCD-NBSB Future Strategies for Children Report

Introduction

Working to advance the health security and resiliency of a nation's youth (e.g., infants, children, adolescents, and young adults) is one of the most critical activities any nation can undertake. Doing so is nothing less than protecting and investing in the nation's future. The US Department of Health and Human Services, Assistant Secretary for Preparedness and Response (ASPR) is tasked with protecting the health and safety of all Americans during emergencies and to foster their resilience to withstand and respond to the same. Given the criticality of this task as it relates to youth, the Office of the ASPR requested the National Advisory Committee for Children and Disasters (NACCD) to work with the National Biodefense Science Board (NBSB, previously known as the National Preparedness and Response Science Board, NPRSB) to recommend future strategies the ASPR could utilize in advancing the health security of our nation's youth.

Building on the National Preparedness and Response Science Board's (NPRSB) Future Strategies Report (2015), the National Advisory Committee for Children and Disasters (NACCD) worked with the NBSB to review projected trends and develop a prioritized set of future strategy recommendations and initial implementation steps for the ASPR, specific to children's needs in disasters.

Recommendations Summary

1. Strengthen ASPR's ability to fulfill the full intent of its authorizing legislation -- "The Assistant Secretary for Preparedness and Response shall have lead responsibility within the Department of Health and Human Services for emergency preparedness and response policy coordination and strategic direction." (PAHPRA, 2013).

2. Markedly expand, beyond the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE), ASPR's facilitation of and participation in networks, coalitions, collective impact initiatives, and other structured collaborative approaches used to address complex social and system issues.

3. Work to assure, through operational and policy-related initiatives, that a sufficient domestic capability to conceive, develop, produce, and replenish medical countermeasures (MCMs) is maintained and enhanced.

4. Continue to prioritize preparedness strategies that address multiple hazards or synergistically meet both health security and other high-priority societal needs. This includes working with partners to mobilize efforts to stabilize and strengthen foundational systems core to national health security, including emergency and trauma services and public health systems.

5. Increase public visibility of emergency preparedness and response efforts undertaken by ASPR and others. More openly and actively engage the public on issues pertinent to preparedness, response, and resiliency. Collaborate with key stakeholders towards promoting a stronger culture of personal, organizational, and community readiness.

6. Strengthen disaster risk reduction strategies in ASPR's work and encourage the same with federal, state, and local government and private sector partners.

7. Link with and incorporate preparedness policy and incentives into other initiatives (especially mental health and social initiatives) shaping the health of individuals, communities, the economy, and national defense.

8. Continue to seek novel approaches for accessing, analyzing, disseminating, and utilizing data to reduce disaster risk, strengthen resilience, improve preparedness, guide response, and hasten recovery. Work to continuously improve quality and ensure security of data.

9. Advance, and whenever available, utilize, scientific investigation and data to learn more about the health and mental health effects of disasters and to evaluate and guide approaches to decreasing risk, advancing preparedness, maximizing the effectiveness of response and recovery efforts, and enhancing community resilience.

10. Utilize performance improvement principles, assuring the organization continuously learns from experience and operates in as facile, rapidly responsive, collaborative, innovative, and effective an environment as possible.

ASPR Future Strategies for Children: Advancing the Health Security of our Nation's Youth

To develop ASPR Future Strategies for Children and recommended initial steps, the working group utilized the trends identified in Appendix A of this report, the knowledge and expertise of working group members, an exercise exploring three alternative futures (see Appendix B), and the ASPR Future Strategies work of the NBSB.

The NBSB and NACCD endorse continued implementation of the Future Strategies outlined in the initial NPRSB ASPR Future Strategies Report (2015). For each of the identified strategies, the working group provides comments on their applicability to ASPR's role in advancing the health security of our nation's infants, children, adolescents, and young adults and offers recommended initial steps for implementing the strategy relevant to today's context. While some recommended next steps are youth specific, others are broader in scope yet still carry the potential to significantly advance the health security and resiliency of our nation's youth.

Strategy 1: Strengthen ASPR's ability to fulfill the full intent of its authorizing legislation -- "The Assistant Secretary for Preparedness and Response shall have lead responsibility within the Department of Health and Human Services for emergency preparedness and response policy coordination and strategic direction." (PAHPRA, 2013).

ASPR should continue to establish and build its capacity to provide strong leadership in both policy coordination and strategic direction across HHS agencies as such relates to preparedness, response, recovery and resiliency. In doing so, it is critical that the ASPR pay close attention to not only maintaining but enhancing the pediatric focus, recognizing that protection of and building resiliency within our nation's youth is integral to our future.

Recommended Initial Steps

- Fulfilling its role of policy coordination, ASPR should quickly and collaboratively establish roles and responsibilities related to the Strategic National Stockpile (SNS) and its distributions/operational implementation. In doing so, ASPR should be certain to recognize, retain, and utilize the strength of multiple entities across HHS and within states, localities, tribes, and territories.

- Identify required resources not within the Centers for Disease Control and Prevention (CDC), ASPR, or jurisdictional entities and work to collectively address them as a system. Directly examine how pediatric populations are affected by and served in this transition.

- Use ASPR's posture in transitioning the SNS as an opportunity to bridge and advance its relationship with the CDC, working in close partnership and demonstrating mutual respect for both organizational expertise and organizational culture differences in order to collectively advance an integrated approach to supporting and advancing state, local, tribal and territorial SNS efforts.

- Recognizing that ASPR, is relatively new (ten years old) to working with states, tribal, territorial and local authorities and that it continues to establish its operational roles, utilize this as an opportunity to learn from and incorporate many of the strategies and methods the CDC has used over the past several decades through SNS and the CDC Division of State and Local Readiness more broadly to build greater trust and more collaborative relationships with state and local partners. Apply these methodologies to other ASPR programs, especially the Hospital Preparedness Program.

Strategy 2: Markedly expand, beyond the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE), ASPR's facilitation of and participation in networks, coalitions, collective impact initiatives, and other structured collaborative approaches used to address complex social and system issues.

The ability of the ASPR to adopt flexible leadership approaches depending on the situation is critical to both its ability to provide strategic direction and effective policy coordination. Hierarchical "command and control" approaches to leadership are occasionally appropriate, but, for the most part, should be cautiously and rarely utilized. Issues as complex and multi-sectoral as health security demand more collaborative approaches aimed at meaningful engagement of stakeholders; development of shared or at least aligned visions, missions, and goals; an environment built on mutual understanding of and respect for both the challenges faced and expertise brought by all; and strong bi-directional communications. The result will be stronger development and integration of local, regional, tribal, territorial, state, federal, and private sector preparedness and response systems.

Recommended Initial Steps

- Utilize the SNS transition as an opportunity to visibly demonstrate ASPR's capability to use strongly collaborative approaches to coordinating policy and setting strategic direction. Prime opportunities to do so include the following:

  - Development of standards for the "last mile" distribution of medical countermeasures (dispensing of MCMs) to children and families that are jointly developed using an open and facilitated process among ASPR; CDC staff; state, local, tribal, and territorial leaders (from both executive and operational levels/professional associations); and academic and other partners. Consider a facilitated approach to ensure contribution to and ownership by all involved in standard development. This will help to build trust with states, tribes, territories and local authorities and further build relationships.

  - Incorporating the knowledge and input of state, local, tribal, territorial, and health care delivery representatives into PHEMCE working groups and discussions including individuals with pediatric expertise and focus. Work towards full participation of these entities in the same.

- Regional healthcare coalitions are effective when health care facilities, local public health, health care leaders, and others are actively engaged and trust the benefit of these relationships. Currently proposed PAPHRA legislation calls for "guidelines to inform regional systems of hospitals, health care facilities, and public health facilities of varying capability levels to treat patients affected by chemical, biological, radiological, or nuclear (CBRN) threats, including emerging infectious diseases, and improve medical surge capabilities and capacity."[1] In developing such guidelines, ASPR should actively collaborate with regional healthcare coalitions, public health leaders, and professional associations. As a measure of success, developed guidelines and the process through which they were created should naturally evoke ready endorsement of, support for, and committed work towards said guidelines by key stakeholders across the system.

Strategy 3: Work to assure, through operational and policy-related initiatives, that a sufficient domestic capability to conceive, develop, produce, and replenish medical countermeasures (MCMs) is maintained and enhanced.

Through the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) and Biomedical Advanced Research and Development Authority (BARDA), ASPR has made significant MCM advancements by establishing stronger partnerships and pre-event systems capable of reducing event-specific MCM development and production time. Yet, there has been and continues to be opportunities for improving diagnostic abilities as well as for expansion of MCMs relevant to pediatric populations. Precision medicine also brings opportunity to improve safety and produce more effective medications and diagnostics.

[1] Pandemic and All-Hazards Preparedness and Advancing Innovation Act of 2018 – Summary of drafted Senate Bill.
https://www.burr.senate.gov/imo/media/doc/Final%20PAHPAI%20Discussion%20Draft%20SBS.pdf. Accessed August 20, 2018.

Recommended Initial Steps

- Using pediatricians and pharmacologists, including specific expertise at the National Institutes of Health (NIH), CDC, and Federal Drug Administration (FDA), define pediatric dosages of older medications and promote the development of pediatric dosage forms for new medications.
- Advance the availability of practical methods for medication delivery for children, orally, intravenously, or otherwise (e.g. pediatric auto-injectors) and assure pediatric delivery modalities are ready for deployment.

- Train local first responders in pediatric needs and delivery methods separately from adult practices in order to emphasize the critical differences. Consider partnership with HRSA's Emergency Medical Services for Children program in this effort.

- Develop new, temperature stable formulations of MCMs for pediatric use. Funding of academic and private companies to innovate new technologies for development of such formulations could allow achieving this goal.

- Continue to seek innovative methods for logistics and supply chains that can help to facilitate last mile delivery during recovery, including more effective distribution at points of dispensing sites.

- Commission a non-federal or joint assessment to access the adequacy of actual or planned additions of MCMs to the SNS for the top prioritized material threats for children (0-18 years) as well as for adults.

Strategy 4: Continue to prioritize preparedness strategies that address multiple hazards or synergistically meet both health security and other high-priority societal needs. This includes working with partners to mobilize efforts to stabilize and strengthen foundational systems core to national health security, including emergency and trauma services and public health systems.

ASPR should promote the resiliency of children and the systems that care for them by working to connect public, non-governmental organizations, academic and private sector systems. The United States does not have the resources to predict, prevent, or mitigate every threat, so preparedness needs to follow an all-hazards approach and identify the common actions that can have the largest impact in the most situations. Because we cannot eliminate all threats, the ASPR needs to prioritize resiliency and the capacity to effectively and rapidly detect, respond to, and recover from disasters and public health crises. Preparedness and response should be able to scale, from minor everyday situations (such as the ability to provide quality pediatric emergency care including mental health care in all communities or the ability to address children with special health care needs) to large-scale crisis (with the coordination of specialized resources, the activation of surge capacity, and the development of timely methods to support recovery of children and families). Multi-directional communications among federal, state, and local components of the system are critical for such to occur.

Recommended Initial Steps

- The ASPR should define resiliency as it applies to children and the systems that care for them. Characteristics of resilient individuals and systems should be identified from the research literature and expert consensus. ASPR should lead a group of stakeholders in determining how each can help to advance resiliency.

- Ensure development and access to pediatric equipment and therapeutics supporting surge capacity.

- Actively work with and support public health systems providing pediatric services and maintaining networks of care (immunization programs, children with special health care needs networks, child nutrition, newborn screening, children's mental health and resiliency programs, etc.) to assure they are sufficiently robust to maintain operations in support of at risk clients and families through disasters and into long term recovery. The ASPR should work collaboratively with agencies within HHS such as CDC, Administration on Children and Families (ACF), and Health Resources and Services Administration (HRSA) to accomplish this. In addition, the ASPR should reach out to, engage, and coordinate with partners across agencies relevant to advancing youth resiliency including the Department of Education and the Department of Agriculture.

Strategy 5: Increase public visibility of emergency preparedness and response efforts undertaken by ASPR and others. More openly and actively engage the public on issues pertinent to preparedness, response, and resiliency. Collaborate with key stakeholders towards promoting a stronger culture of personal, organizational, and community readiness.

It is critical for ASPR to be a visible, sought after, and go-to resource on health security and to partner with stakeholders and the public in order to bring the greatest number of resources to bear on preparedness, response, and recovery (see Strategy 2), and to engage the public on the same. At present, ASPR is primarily known within governmental entities. Few health security stakeholders are fully familiar with the key roles ASPR plays or resources it produces. Changing this can be best accomplished by actively working to become more visible; by engaging with diverse groups, viewpoints, and audiences; and by visibly working to increase personal, family, and community involvement in planning, exercising, and identifying strengths upon which to build health security. Youth can serve as a powerful force for communication and for engaging communities.

Recommended Initial Steps

- Using consistent senior spokespersons, actively utilize the Office of External Affairs, Communications Division, and External Stakeholder Engagement Division to enthusiastically communicate to the press and key stakeholders ASPR's role in preparedness for, response to, and recovery from emergencies. The messaging should capture the agency mission, work underway, and positive outcomes and achievements of ASPR, including identifying and making visible those leaders and staff who have helped to make advancements occur.

- Consider changing the ASPR web address to be more recognizable and user-friendly to the public, encouraging familiarity with its name. Develop a common readily recognizable logo, identity, and branding.

- Promote visible partnerships with other more well-known agencies, such as CDC and FEMA. Jointly work to engage communities in discussions around resiliency.

- Regularly contribute to the academic literature (e.g., commentaries and research articles). Establish "ASPR Updates / Discoveries" as standing pages in established professional journals. Encourage staff and partners to present their work at scientific conferences and hold symposia to disseminate information. (BARDA can be a model to mirror here.)

- Use social media to collaborate and become better known, conveying what ASPR does for different constituents and to promote best practices and lessons learned.

- Actively promote engagement of youth in community preparedness and response through schools, civic organizations, etc. Engage youth early and often in team building, trainings, and leadership roles. In emergencies, provide specific and valuable roles for youth to undertake and lead.

- Create a campaign and materials that directly engage children and youth (similar to FEMA's Ready Kids). Of note, it will be important to create items unique in identity and mission and readily attributable to ASPR that do not overlap with or create potential for confusion among existing efforts from other agencies.

Strategy 6: Strengthen disaster risk reduction strategies in ASPR's work and encourage the same with federal, state, and local government and private sector partners.

There are multiple mechanisms to reduce the occurrence of, magnitude of, or the impact from health threats. Early detection systems are desirable as they likely improve response/treatment time and result in better outcomes. Early recognition can trigger mitigation efforts (e.g., vaccine development, behavioral change, etc.), result in fewer victims and lower morbidity. Reducing population susceptibility is also beneficial; advancing access to more stable environments and communities for children and families at risk can build resiliency and reduce the impact of disasters on affected populations.

Recommended Initial Steps

- Continue to develop early detection strategies for infectious, biologic, radiation, and chemical agents

- Support and encourage partner efforts that address disparities across ages, culture, etc. Consider studies to better elucidate the role of addressing/reducing ACEs (Adverse Childhood Experiences) in building individual and community resiliency.

Strategy 7: Link with and incorporate preparedness policy and incentives into other initiatives (especially mental health and social initiatives) shaping the health of individuals, communities, the economy, and national defense.

With increased recognition of the importance that mental health plays in child health, child development and future health as an adult, there is renewed focus on the need to adequately address mental health issues in children and their caregivers, reduce bullying, create safe spaces, and build coping and conflict resolution skills among youth. The far-reaching and long term mental and physical health consequences of societal public health and individual family crises make children and those who care for them even less able to prevent and recover from the effects of disasters. Policies and programs supporting the healthy physical, psychological, and emotional development of children and families can dramatically strengthen the resilience of our nation to disaster.

Recommended Initial Steps

- Promote and encourage preparedness and response policies that reduce the negative consequences of ACEs, promote physical fitness, and build communities that advance wellness and wellbeing.

- Increase involvement of pediatric stakeholders (families, youth, professional organizations) in policy development

- Examine and apply the lessons learned related to children and families in Zika virus response, specifically the importance of incorporating in any response a combination of long-standing preventive measures (e.g., contraceptive services, environmental change), the ability to respond to immediate effects (e.g., support for Zika virus positive infected pregnant women and infants), and the need to assure infrastructure is in place to deal with longer term effects of health emergencies on children, families, and society more broadly (e.g., planning for Zika's implications for the educational system, medical care systems, children with special health care needs services, etc.).

- Strengthen partnerships with organizations dedicated to the mental health needs of children and youth (e.g., National Child Traumatic Stress Network, National Association of School Psychologists, American Psychological Association, National Infant Mental Health Association, etc.).

Strategy 8: Continue to seek novel approaches for accessing, analyzing, disseminating, and utilizing data to reduce disaster risk, strengthen resilience, improve preparedness, guide response, and hasten recovery. Work to continuously improve quality and ensure security of data.

The increased ubiquity of varied data sources creates a need for information management and identifying what sources would be useful in what situations. At the same time, analysis of research and evaluation needs may identify untapped data sources or sources that still need to be developed. ASPR has an opportunity to lead the way in the application of data to rigorously guide best practices in disaster preparedness, response, and recovery, particularly with a focus on the unique needs (and data sources) for children. The evolution of new data tools and

sources such as social media and artificial intelligence also creates an opportunity to engage youth in this effort given their familiarity and interest with this environment.

Recommended Initial Steps

- Support coordination of disparate electronic health records (EHRs) and sharing of data between health care entities and public health. Consider partnering with EHR vendors and other technological companies along with federal, state, local, tribal and territorial public health to identify flexible, secure, and feasible means through which to accomplish this goal.

- Explore creation of a pre-positioned data set from the National Disaster Medical System's EHR system and test its utility during the next large-scale activation of the NDMS. Special consideration needs to be given to behavioral health records since these are not likely to be included.

- Engage private and technical innovation as well as academia to contribute to data collection and analysis and incorporate into public systems.

- Explore use of artificial intelligence to scour global unstructured data in real time.

Strategy 9: Advance, and whenever available, utilize, scientific investigation and data to learn more about the health and mental health effects of disasters and to evaluate and guide approaches to decreasing risk, advancing preparedness, maximizing the effectiveness of response and recovery efforts, and enhancing community resilience.

The ASPR has the opportunity to take the lead in translational research in determining best practices for health care and public health in disaster preparedness, response, and recovery. (This supports Strategies #8 and #10.)

Recommended Initial Steps:

- Support real-time disaster research infrastructure addressing HIPAA, informed consent, IRB, etc., as it pertains to children (both in communities, pre-hospital, hospital, and discharge to rehabilitation and recovery).

- In partnership with other key stakeholders (e.g., American Academy of Pediatrics, Emergency Medical Services for Children, National Child Traumatic Stress Network, etc.), define performance metrics for pediatric readiness.

- Identify metrics and data sources to evaluate health system response and recovery as it relates to children affected by disaster.

- In partnership with other key stakeholders, identify the desired data elements for evaluating overall child health and mental health outcomes after disaster. This includes identifying existing sources for these data elements as well as new sources that need to be developed.

- Promote translational research, evaluation, and dissemination of findings. For example, provide on-going support to and partner with local communities to engage in documenting promising local ideas / methods, evaluating their effectiveness, and exploring their translation to other communities for future disasters and emergencies. Build the evidence base for effective interventions building youth preparedness and resiliency so that resources may be targeted effectively.

Strategy 10: Utilize performance improvement principles, assuring the organization continuously learns from experience and operates in as facile, rapidly responsive, collaborative, innovative, and effective an environment as possible.

Performance improvement creates the opportunity for rapid, data-driven evaluation of ASPR's efforts and investments. Such efforts can lead to iterative improvement, identification of best practices (and practices that might be discouraged), prioritization of more effective use of resources, and significant contribution to the evidence base in disaster response and recovery.

Recommended Initial Steps

- Adopt quality and process improvement science strategies within the organization. ASPR should create a formal process improvement structure to evaluate its initiatives from inception through implementation, or through each funding cycle. Such a structure should utilize standard quality improvement methods and instruments, such as a project charter with defined goals and measures, data collection, and evaluation and reporting. ASPR can pilot this process through a pediatric initiative, such as the recommendation for pediatric measures tied to HPP grantees as described in the NACCD's Funding Strategies report.

- Increase efficiency in grants, reporting, and funding.

- Regularly undertake and support partners in undertaking drills and exercises testing response and recovery plans as they relate to pediatric populations.

- Include comprehensive pediatric metrics and assessments in after action reports.

Appendix A: Trends Informing Future Strategies

The following trends were considered in identifying ASPR Future Strategies for advancing the health security and resiliency of our nation's youth. Six of these were initially identified in the NPRSB's ASPR Future Strategies Report (2015) and are felt to both still hold true today and be relevant to pediatric health security. Two additional strategies relevant to children were identified as well:

Trend 1: Economic challenges pose major threats to at least three core components of our nation's health security.

These include:

1. The ability to domestically develop and produce new medical countermeasures and needed technologies,

2. The stability of the nation's public health system and its potential for further growth and maturation, and

3. The ability of health care systems to engage in and commit to emergency preparedness.

Related to MCMs, there continue to be concerns about aging of SNS supplies, the ability to maintain/replace supplies, and inadequate quantities of MCM's including those with appropriate pediatric dosing and delivery methods. In addition, there is increased reliance on just in time supply chains that create major vulnerabilities when deliveries are delayed due to natural disasters or shortages occur when one or more production facilities is damaged or unable to operate. There are deficiencies in therapeutics, vaccines, diagnostics, delivery systems, developing pharmacokinetic and pharmacodynamics (PK/PD) methods, and animal models for juveniles. In addition, there are difficulties and ethical challenges in conducting trials. Through the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) and the Biomedical Advanced Research and Development Authority (BARDA), ASPR has made significant MCM advancements by establishing stronger partnerships and pre-event systems capable of reducing event-specific MCM development and production time. There has been and continues to be opportunities for improving diagnostic abilities as well as for expansion of MCM's relevant to pediatric populations. Precision medicine also brings opportunity to improve safety and produce more effective medications.

Related to public health systems, there is stagnant if not declining funding, workforce and resource shortages are jeopardizing child-related services and systems including immunization, emergency preparedness, children with special health care needs, child nutrition, mental health, child development programs, and environmental protections among others. There is room for stronger integration of public health, health care, and public policy systems and significant need to further strengthen public health system capacity to support and facilitate community-engaged strategies to address complex social issues impacting the health of youth and our nation. Funding cuts to the Department of Education (DOE) to support school disaster/crisis preparedness has also undermined preparedness efforts for children. This is especially important given children spend most of their waking hours during the weekday in school and other child congregate care sites.

Health care, critical care capacity and "surge" capacity for children is limited. Community hospitals have closed pediatric beds/wards leading to decreased community capacity (and experience) outside of specialized children's hospitals. Pediatric health providers have competing responsibilities and often do not have time to engage in preparedness efforts. Limits on the blood supply also produce risk.

Trend 2: Social and entrepreneurial models are changing. Networks, collaborations, and more decentralized models of leadership are being used to address complex issues, spark and support innovation, advance common objectives, and more widely distribute both benefit and risk.

With decreasing public trust in government[2] and an increasingly wealthy society, there is opportunity for the establishment of public- private partnerships at the community, local, state and federal levels.[3] Many complex societal issues, including those impacting children, are increasingly being wrestled with at local, regional and federal levels through cross-sectoral collaborative approaches.[4][5] Community participatory research as well as development based on existing community strengths and assets offer public voice, open consideration, and potential solutions to topics that communities' value. Both, however, thrive best when governmental entities utilize less hierarchical, "service-oriented" and more open, transparent, collaborative "development-oriented" approaches. These involve less working "to and for" and more "with and about" communities. Governmental entities can play key roles in fostering and supporting such approaches.

Social networks and crowd sourcing also bring new opportunities for connection, communication, and education (multi-directional information transfer). Increasing youth engagement in and utilization of social media as compared to other more traditional communication platforms (print media, television, radio, telephone), holds promise. Communication approaches are changing, relying on simple "sound bites" to get messages across. There is a focus on "meeting people where they are".

Trend 3: Mental health considerations in children are increasingly resonating as an important public health and societal issue (new proposed trend)

There is increased recognition of the importance that mental health plays in child health, child development and future health as an adult. There is renewed focus on the need to adequately address mental health issues in children and their caregivers, reduce bullying, create safe spaces, and build coping and conflict resolution skills among youth. The far-reaching and long term mental and physical health consequences of societal public health crises including the opioid epidemic, domestic violence, school shootings, violence and other adverse childhood events are more commonly spoken to and prevalent. On a day-to-day basis, in most communities, there are insufficient resources to meet the mental/behavioral health needs of children and their families. Policies and programs advancing organizational and community capacity to prevent, recognize, and mitigate these could significantly advance the nation's resilience and health security. Disasters clearly generate a substantially increased need for prevention, screening and treatment resources, as well. Media also continues to be a strong force potentially impacting the mental health of children. Many express concerns over and data

---

[2] The Pew Research Center. Public Trust in Government 1958 – 2017. http://www.people-press.org/2017/12/14/public-trust-in-government-1958-2017/. Dec. 12, 2017.
[3] Conoway, C., Solving Complex Social Problems through Collaboration. Harvard Business Review. June 17, 2015. https://hbr.org/2015/06/solving-complex-social-problems-through-collaboration, accessed 8/30/2018.
[4]Kania,J, Kramer,M. Collective Impact. Stanford Social Innovation Review. Winter 2011. https://ssir.org/articles/entry/collective_impact. Accessed 8/30/18.
[5] Eggers, W.D., A 'Whole of Government' Approach to Social Problems. Governing, Jan 17, 2017. http://www.governing.com/columns/smart-mgmt/col-whole-of-government-approach-social-problems-veterans-homelessness.html. Accessed 8/30/2018.

suggests potential negative effects of media exposure on children, especially unfiltered information received through media sources.

On a positive note, there is increased recognition of the value in helping children develop problem solving, conflict resolution, and coping skills. Responders are learning more about working to integrate the physical and mental health needs of children, both of which are accentuated in a crisis. There is also increased recognition that youth can be and are a positive influence for change in complex societal issues, with children themselves learning to and being supported in taking leadership roles. Recent events such as the youth advocacy efforts growing from the Parkland shooting demonstrate the strength, voice, and agency youth are well capable of exercising.

Trend 4: Data and data computation capacity are rapidly expanding, as is the need for data systems integration and cyber security.

Building coordinated information systems that include all the key players is envisioned and, in some cases, happening. This provides both opportunity and risk. Cybersecurity is a present and ever-growing danger as systems increasingly rely on, often solely, electronic data and data systems. Data sources are ever-expanding, including the potential to focus on use of social networks and artificial intelligence in new ways. Increased amounts of data, however, can lead to information overload, emphasizing the importance of accurate analysis and the ability to separate “signal from noise”.

Trend 5: Disasters and emergencies will remain a significant threat to the health and safety of communities and the security of the nation. By most accounts, events are increasing in frequency, severity, and cost.

Disasters and emergencies continue, be they natural or man-made. Children are often caught in the complexities of disasters, be the issue disruption of routine, separation from families, or specific threats to safety. One concern related to children is the possible increased focus on children in both the carrying out of and the targeting of terrorist acts such as the school shooting in Beslan. In addition, certain natural disasters may disproportionately affect children, such as the consequences of congenital Zika virus infection or tornadoes striking schools.

Trend 6: Disaster risk reduction is a critical component of advancing health security globally and in the United States (US). Much can be done to reduce the likelihood of and prevent events and other health threats from becoming disasters.

Early detection systems for biologic, nuclear and other threats must be advanced, as they likely improve response and treatment times as well as outcomes. With limits to health care surge capacity, MCMs, etc., early recognition might promote mitigation, fewer victims, and lower morbidity.

Growing disparities among underserved populations also create increasing risk. Reducing inequities and advancing access to more stable environments and communities for children and families at risk can build resiliency and reduce the impact of disasters on affected populations.

Trend 7: Demographic and environmental changes relevant to health security are projected to occur in the United States.

Multicultural communities and a multitude of spoken and written languages can be found across the US. While increasing diversity in the US was initially based on immigration and migration, its growth is now self-sustaining. While all-minority communities are often disadvantaged, evidence suggests that those that are highly diverse (e.g., with multiple racial and ethnic groups) are often thriving, offering varied housing stock, employment and market opportunities.[6][7]

Trend 8: Children are facing economic and societal challenges with long term consequences every day (new proposed trend)

Extensive research points to ACEs as a risk for reduced resiliency and chronic illness. This is exacerbated by recent public health crises like the opioid epidemic bringing forth concerns about neonatal substance exposure, household stability, and child safety, all with potential effects on health and development long term. In addition, displacement of children and families due to conflict, violence, and war globally seems ever-expanding. All of these contribute to increased economic disparity, present educational and developmental barriers, and diminish families' capacity for preparedness. Children with disabilities, an increasing population in the US, are even further affected by these economic and societal disparities.

At the same time, there is increased recognition of the need for healthy eating, physical activity, and sleep, as well as improved coping skills among children, another route to a more resilient community. It is important to note, however, that the lack of such for all children is creating significant opportunity gaps between haves and have nots.

Appendix B: Alternative Futures

The Future Strategies for Children Working Group found discussion and development of potential alternative futures to be useful in both accomplishing its work and in understanding its implications. Given this, three futures are included below for the year ~2025. They are not meant to be actual predictions but rather, were used to stimulate creative thinking, put recommended strategies in context, and help ASPR envision ways to maximize its effectiveness in assuring the nation's youth are "prepared for, protected from, can respond effectively to, and are able to recover from incidents with potentially negative health consequences."[8]

In thinking about alternative futures, the NACCD and NBSB envisioned three different scenarios:

---

[6] Ottaviano,G.,Peri,G. The economic value of cultural diversity: evidence from US cities, Journal of Economic Geography, Volume 6, Issue 1, 1 January 2006, Pages 9–44, https://doi.org/10.1093/jeg/lbi002 Accessed 8/30/2018.

[7] Bove,V. Elia,L. Why Mass Migration is Good for Long Term Economic Growth. Harvard Business Review. April 18, 2017. https://academic.oup.com/joeg/article/6/1/9/1056407. Accessed 8/30/2018.

[8] Language excerpted from the definition of National Health Security, National Health Security Strategy. Page 3. 2009. http://www.phe.gov/Preparedness/planning/authority/nhss/strategy/Documents/nhss-final.pdf. Accessed 11/16/14.

1. ASPR continues its current path,
2. The organization reduces its focus on children and things get markedly worse, and
3. ASPR grows its focus and efforts related to children.

Scenario 1: ASPR in 5-10 years: What things would look like if they continue on the current trajectory

ASPR leadership roles grow and the agency's response capability continues to expand slowly.

- ASPR continues its key focus on building operational response capability of both the agency and partners, especially with operational partners such as the Department of Defense.

- ASPR continues to work with public and private entities to develop drugs amenable to pediatric dosing and delivery.

- ASPR focuses on building leadership visibility and leadership level connections with health and mental health care system executives and other key partners.

- ASPR continues its efforts to be recognized as the trusted, go-to agency for knowing the picture of preparedness in the country with some progress and continues to work towards functioning as the "glue" between other agencies like the Federal Emergency Management Agency (FEMA), Department of Defense (DOD) and Department of Education (DOE) as well as coordinating with others within the agency such as the Centers for Disease Control (CDC), Administration on Children and Families (ACF), Assistant Secretary for Health (ASH), Substance Abuse and Mental Health Services Administration (SAMHSA) and the Food and Drug Administration (FDA). Progress is rocky at times, especially around events, but continues to move forward slowly.

- Trust in government continues to gradually decline and governmental and population polarities continue in politics and the media. ASPR remains out of the awareness of the public and even that of most providers and partners integral to health emergency response. Attempts are made to address this through an increase in and focus on effective public and partner communication by ASPR with some slight success. More often, it remains buried behind the broader political controversies and budget issues associated with health care system related issues.

- ASPR continues to identify nodes of excellence in disaster response that have an impact and to study key facilitators and barriers as well as identify and disseminate solutions to the same, working to advance the science of preparedness and its practice.

- Lessons are learned on integrating federal, state, and local systems, however on-the ground community capability still varies widely and localities continue to struggle.

Succession Planning – Leadership Development:

Many ASPR and broader agency positions that remain unfilled make succession planning and response redundancy challenging. Additional training throughout staffing ladders is required, but

not sufficient given that federal operational and administrative systems have not been that streamlined or made significantly more efficient.

The Demand for Partnership and more Integrated / Coordinated Systems Increase

- ASPR continues to be expected to interact with other groups and to do so even more effectively.

- ASPR builds on and, to some extent, extends the BARDA and PHEMCE model to other areas of preparedness, however the extent to which such is done is only moderate, as ASPR continues to move response to response with little time to think strategically between events.

- Staff continue to struggle with legal and administrative barriers that impede development of effective collaborations with external entities, including states, locals, tribes, territories, private sector and non-profit partners.

- ASPR considers developing a pediatric preparedness coalition of partners internal and external to the agency mostly envisioning it as a source of input and ideas for ASPR. Although progress continues to be made related to MCMs through PHEMCE, this broader pediatric preparedness coalition is not internally envisioned to, nor does it significantly advance the pediatric preparedness agenda more globally.

- Societal and technological changes cause the need for new partners previously unconsidered to emerge (e.g., during the 2017 Las Vegas shooting, ride sharing companies helped get people to hospitals).

- Decreased funding and evolving policy necessitate more focus on regional coalitions and partnerships beneficial to preparedness, response, and recovery; however, varied jurisdictional response authorities, staff turnover, and struggling public health, health and mental health care systems continue to make coordination among such groups a challenge. Active participation within regional coalitions of those with pediatric expertise remains sporadic.

- Growth in partnership with DOD occurs and resources emerge to the extent such are applicable and acceptable to public health and health care communities. A need for pediatric expertise to be present and visible emerges in these efforts, as this population is not the typical one commonly dealt with by DOD.

- Federal agencies continue to deal with overlapping issues, especially related to children.

- Pediatric related partnerships continue; however, their full potential is not reached.

Partner Capacity: Erosion of Public Health and Struggling Health Care Systems.

- Despite a need for and interest in more drills and training, funding is insufficient for such. The impact of this is multiplied by staff turnover and loss at all levels.

- Although there is a push for more integrated funding opportunities, multi-year budgeting, and smoother administrative processes, funding continues to become more and more targeted, directed to specific diseases and events rather than sustaining and/or building effective, efficient response systems.

- Limited healthcare system preparedness program funding means only certain jurisdictions receive this support, heightening inequalities in local preparedness capabilities, particularly rural vs urban/suburban.

- Foundational components of our response system struggle and become more fragile (e.g., immunization, laboratory and environmental capacity, mental health, surge capacity, etc.). The balance between doing the work of advancing preparedness and response systems and meeting administrative burdens on grants continues to be a major hurdle for state, local, tribal and territorial systems.

- Health care system CEOs, including pediatric systems, only partially engage with ASPR to build health systems ready to respond, for they continue to regularly wrestle with an overburdened, complex, and increasingly expensive, more competitive health care system day to day.

- Community hospitals and EMS are challenged by and strive to, but struggle in their ability to adequately care for children in disasters.

Changing status of Public Infrastructure Supporting the nation's health security.

- Water and food safety continue to emerge as growing issues, with increasing recognition that many areas rely on finite supplies of water and aging infrastructure. Water becomes increasingly expensive and at times less available, potentially impacting waterborne illnesses and health care delivery.

- There is a public push to upgrade some aspects of the nation's infrastructure, opportunities upon which ASPR and communities can build.

Emerging Infectious Diseases

- ASPR works hard to address new infectious disease threats in conjunction with other federal partners and the private sector. They do moderately well, although struggle with those that induce high fear or are of significant severity. There is gradually increasing ASPR leadership visibility and recognition during such events.

- Certain infectious agents threaten to overwhelm existing public health and healthcare infrastructure very quickly due to the extreme demands on the system to provide appropriate and effective care.

- Community Preparedness

- Children are routinely spending more time away from their parents (in child care, after school programs, activities, unattended, in foster care, living with relatives or friends, etc.). Family separation, tracking and reunification in the event of a disaster is an issue of increasingly high visibility and focus, demanding significant attention and resources. Patient tracking and end to end resource distribution also take a center focus.

- The virtual absence of funding for youth preparedness initiatives results in continued and well-intentioned but largely untested and ineffective initiatives. Subsequent demonstration of limited efficacy and some unintended negative consequences results in their abandonment. The absence of tested and effective initiatives results in disinterest in youth preparedness efforts. Many look to the "Just say no to drugs" campaign and Project DARE as examples of widely implemented, well intentioned and ultimately demonstrated ineffective initiatives geared to children. Concern is raised about whether their failure contributed to the current substance abuse epidemic.

- There is a push for greater community and industry engagement in disaster preparedness and response by ASPR and others, with some success.

- Communities identify the need for redundancy in disaster preparedness, especially relating to children, but struggle with the capacity to create such.

- Continued event to event response focus at all levels limits advances in both building recovery systems and advancing day to day resiliency that could mitigate the impact of future disasters among populations.

- Incidents occur where there are major missteps, highlighting what is and is not available at the local level and driving home the fact that not all places are equitable in resources, leadership, training, or capability. Both significant bright spots and significant gaps in our health security system continue to be exposed publicly and behind the scenes.

- In response, local entities develop more local and regional response plans. There is a push for more training and drills to address children in the community setting. Some occur, but less than desired.

- Health professionals continue to struggle day to day focusing on individual patient care. Although improving, there remains little knowledge or interest among them to work in and with community organizations or with other sectors outside healthcare. In specific, they continue to struggle with addressing children in a community setting, both every day and in disaster.

Reliance on Technology

- Technological advances continue to impact diagnostics, countermeasure development, communications, and data exchange creating opportunities heretofore not recognized. Some though not all are leveraged.

- Responders and health professionals work to understand and reach children (and the public more broadly). Most systems support information pushes out, although some explore potential two-way interactive capabilities.

- New systems emerge for tracking health records and patients post evacuation as well as to support family reunification.

- Increasing reliance on some technologies also increases certain disparities among populations (e.g., for those not connected to social networks, not accessing newer technology, etc.)

- Hacks into smart technologies in consumer medical devices (e.g., programmable insulin pumps or cardiac pacing or defibrillator devices), hospital or healthcare setting equipment (e.g., ventilators), pharmaceutical and medical equipment production facilities, etc., result in deaths and widespread fear of use of life-saving medical equipment.

- ASPR and HHS more broadly experiences at least one cybersecurity event / breach. Increasing concerns among the public about privacy risks that follow results in further reduction in data sharing and reduced interest in interoperability of systems.

- It is recognized that there is a SNS for medical countermeasures, but no readily accessible IT stockpile to support redundant systems or sustain operations of crucial health care or other societal systems in an event be it intentional or unintentional.

- Despite new CMS rules, there continues to be a lack of sharing data. Misperceptions about HIPAA continue to be a challenge both every day and in disasters.

- In the private sector there continue to be significant IT advances, however many are not leveraged federally or by states.

Scenario 2: If things don't go well -- ASPR's influence, support, and success related to the needs of children in disasters dramatically declines in the next 5-10 years

The frequency and severity of disasters continue to increase. Available ASPR resources are necessarily focused on response only, with agency staff moving event to event.

- Although not intentional, ASPR's focus is primarily on event response given the frequency and scope of disasters and emergencies and little national focus on disaster mitigation, risk reduction, or community resiliency.

- ASPR operates in crisis mode most days and is increasingly reactive rather than proactive. There is little opportunity to think strategically. Dedicated staff work diligently to get through the acute phase of events, often handling disasters simultaneously or in overlapping fashion.

- The agency grows its own response capacity to some extent, learning lessons from each event, but is unable to focus on helping build the response capacity of the broader health security system. Components of the system become increasingly isolated from each other.

- Similar effects occur at state and local levels. Staff become burnt out, at least in part due to limited investment in professional care and support. Most leadership and middle management work exceedingly diligently but with negative effects on their physical, emotional, and mental health with little end in sight. Others shut down, become less engaged, and lose their effectiveness, showing little interest in operating as part of the team. Turnover is high. Institutional and system knowledge, as well as relationships key to an integrated system response, are lost.

ASPR's roles related to policy as well as coordination and support of preparedness, response, and recovery systems fall by the wayside, especially related to pediatrics.

- ASPR struggles with maintenance of partnerships and collaborations with stakeholders decline. Opportunities to strengthen systems and national capability through the same, decline, including what had been a renewed focus and progress made on pediatric preparedness.

- A reduced system-wide and policy focus results in decreased integration of federal, state, and local systems as a country. Both preparedness efforts and responses are increasingly disconnected and misaligned.

- There is little integration of ASPR's work with efforts by AAP and other professional organizations, local public health, non-profits, schools, or other sector organizations and agencies struggling to develop communities and build resiliency.

- Healthcare Coalitions start to disappear. There is little bandwidth to sustain progress made as local roles and relationships turn over. Although there remain vocal advocates for pediatrics within those that remain, little progress as a nation is made. In addition, this increases the variability of local readiness and community resiliency.

- Congressional representatives remain interested in topics within ASPR's purview, but are often critical, and always want more details than are available. There is little ability to proactively maintain and advance relationships with legislative staffers and representatives.

- With diminished partnerships and less integrated systems, partnership support and advocacy for ASPR is rare.

- Already unstable / declining funds continue to decline further.

Although some advances in agency response capacity are made, ASPR visibility, funding, broader capability, role, and reputation decline.

- ASPR becomes a scapegoat for decreased response and recovery capability across the nation. The effect of disasters on children become a flashpoint for such criticisms. ASPR's reputation as well as public and political support dwindle.

- BARDA remains in the eye of policy makers as the nation's primary focus for preparedness. There is declining support for or understanding of the broader scope of health security or for the importance of relationships, integrated systems, or a trained and exercised workforce.

- Preparedness and response funding primarily comes on an event by event basis driven by public outrage at community circumstances post event, especially when children are involved. With diminished public health and healthcare system infrastructure in place, local and state entities have difficulty handling sporadic, intermittent, short-term funding effectively. Timing of funds rarely is in sync with need and thus is less effective than desirable.

- Diminished partnerships, loss of confidence and fragmentation of messaging around pediatric preparedness occur. Pediatric references decline in funding announcements, trainings, resource tools, or federal drills and exercises.

- Other agencies and organizations take a more prominent role in advancing the pediatric preparedness agenda: academic institutions, non-profits, professional associations, etc. but efforts are inadequately coordinated.

- There is a push to privatize many of the nation's preparedness activities or to turn them over more fully to military and National Guard entities.

- Individual and family preparedness efforts become increasingly stratified based on socioeconomic resources, leading to increased disparities between communities (or among subgroups within a community) before and after disaster

There is a lack of appropriate MCMs for children

- While there are technological advances in MCMs, there are limited pediatric formulations for medications and guidance (simple, clear, tested) on how to utilize them for children in an emergency is inadequate.

- Small to mid-size companies, many new to the market, continue to put off pediatric studies and formulations into post marketing work. They work first towards drug approval and then subsequently work on pediatric formulations, if at all.

- With orphan products, pediatric studies are not required to occur under the Pediatric Research Equity Act (PREA). Thus, needed pediatric studies rarely happen. In addition, pushes for additional deregulation of the industry result in greater numbers of non-orphan products moving to market without adequate testing of pediatric efficacy or safety.

Movement of the SNS from CDC to ASPR creates unintended consequences.

- The addition of SNS to ASPR's portfolio adds significant responsibilities to ASPR's already limited workforce.

- Prior tensions and reducing agency credibility results in significant state and local health department anxiety regarding the same.

- Given limited time, reduced SNS staffing, and a reduced local capability, there is little involvement of state and local partners in development of wholly new terms of delivery and newly required, more centralized delivery / distribution partnerships.

- BARDA and PHEMCE systems benefit from closer relationships with state and local SNS offices in regard to MCM development and use protocols.

- Limited advancement of state and local distribution and dispensing capacity, however, results in continued loss of faith in local capability.

- Significant percentages of SNS funding are transferred to BARDA, given it is seen as a stronger, more robust component of the agency and to private on-line retailers as ASPR's new primary distribution partner for the federal stockpile.

- Product is now distributed directly to providers and hospitals. However, few know what to do with it or follow recommended protocols on storage. Few participate in drills and exercises.

- Although ideas were reasonable and well-intended, exercises and event-based experience show that little advancement of SNS capability is made. Previously developed logistics and relationships decline.

- Uninsured and vulnerable populations, many of whom are children, have reduced access to countermeasures. Those with resources retain ready access to the same.

There is only rare integration of preparedness and other policy efforts.

- There is little advocacy for children on the federal level by ASPR and HHS more broadly, leading to erosion of the advances that have been made.

- There is little integration of preparedness and response policy into education, child safety, healthcare rules and regulations, or other policy initiatives.

- Few see the link between child welfare every day and the future of the nation's health security.

- Effects of disasters on children increase. Many are displaced and/or very negatively impacted with long term consequences for the nation.

- Internal displacement of children in communities increases. There is a renewed push and increasing demands upon ASPR and HHS more broadly to handle displaced families and children both every day and in disasters.

- The physical and psychological effects of disasters on the nation's youth takes a toll, impacting development, educational attainment, job readiness, workforce capability, and family stability.

- Health care costs, unemployment, and incarceration rates all increase even faster than originally projected to occur. Substance misuse and deaths of despair remain significant societal problems. The nation's future workforce is seen to be in jeopardy and businesses increasingly seek overseas sources for the same.

- An incident (such as the intentional release of a bioterrorism agent in a school) has catastrophic impact and exposes critical preparedness and response gaps that were long recognized yet unaddressed. This results in a public call for a new agency and system to assume ASPR's role, contributed in part by the general public's ignorance of ASPR, its mission, and accomplishments.

Scenario 3: Aspirational Future: What things might look like with a strong and exceedingly effective ASPR focus on children in the next 5 to 10 years

ASPR Culture and Overall Approach

- ASPR is an advocate for children and for building resiliency of children and families both every day and in disaster (recognizing the two are integrally linked) across HHS and the government more broadly.

- Children are recognized as fundamental to all ASPR and HHS policy development. The implications for children are explored in all policy dialogues and efforts to address the same integrated into all policies. Youth input and the input of groups working with children are regularly sought in policy development.

- Program evaluation and formal research is conducted, demonstrating effective approaches as well as identifying largely ineffective initiatives and those with unintended negative consequences. This helps justify increasing funding for youth preparedness efforts and increases the positive impact and cost-effectiveness of these efforts.

- With intentional efforts made, trust is strengthening across governmental branches, across agencies, and with partners.

- Social capital and cohesion are strengthening at the community level. Increasingly, people are engaged in the everyday safety and development of their community. They think ahead about how they might plan and believe it is their responsibility to work collectively to help others in an emergency.

- Health Care Coalitions are subgroups of broader Health Security Coalitions and are thriving. State and local government, academic partners, public health, healthcare systems including the medical home, regional federal representatives, industry, non-profits and schools are actively engaged and creative approaches to operational response emerge.

Youth Leadership

- Working through partner organizations, ASPR works to ensure youth are actively engaged and empowered to act in preparedness, response, health policy and leadership development.

- The power of engaged youth and youth leaders is being realized and efforts abound to integrate their active presence in both preparedness and resiliency–building efforts. These are widely endorsed by schools, civic organizations, child care settings, family support networks, etc.

Youth Resiliency is seen as integrally linked to the Nation's Long-Term Health Security Strategy

- There are increasing percentages of youth trained in basic care of themselves and each other, including physical (e.g. "Stop the Bleed") and psychological first aid and environmental awareness, actively contributing to community infrastructure during disasters.

- Partners see their efforts to increase health and mental health literacy and to bridge cultural and language barriers among youth as important cross-sectoral efforts to strengthen resiliency and advance youth capability to successfully navigate both every day community challenges and disasters.

Communication

- New communication methodologies have evolved and ASPR has been in the forefront of utilizing them. These include more effective social media interfaces, and effective partnerships with local and private sector partners. The medical home and schools have become places where personal and family readiness and resiliency are regularly discussed.

Decentralization

- A trend towards decentralization creates a nimbler ASPR, able to respond regionally but with an integrated systems approach. This creates the opportunity for redundancy that isn't there with a more centralized system. The ASPR supports local and regional leaders as they convene and organize groups who effectively shape, guide, and own local and regional response systems supported by federal assets.

- Federal deployment models for response and recovery have been reexamined and revised to address continuity, the opportunity to build on prior technical assistance and support relationships, and greater cultural awareness / competency.

- EMAC is utilized more actively and regularly. Mechanisms are developed to utilize EMAC-like systems of peer support and assistance for longer periods of recovery and/or in preparedness efforts.

Healthcare Systems

- After growing frustration with health care system quality issues, provider burnout, and escalating cost, major reforms support payment systems focusing on quality, simplification / reduction of administrative burdens, and expanded access to affordable health insurance for all. As a result, systems of care are better integrated and prepared to respond to children's physical and mental health needs at all levels;

- Efforts to advance the integration of social determinants of health with traditional healthcare as well as stronger linkages between public health and healthcare systems are beginning to pay off in advancing health equity and reduce health disparities.

- Response to the opioid epidemic has driven a reduction in the stigma associated with mental health issues and resulted in greater mental health parity in access and coverage.

- Medical homes are more widely established and include family-specific discussions of preparedness for disasters – e.g., identifying alternative power sources / priority restoration for those dependent upon the electric grid for health needs (either children or their caretakers), planning for dialysis care post events, family reunification plans, etc.

Stream-lined, Adequate, and Stable Funding

- There is increased recognition of the opportunities for building resiliency during recovery efforts. ASPR strategically supports, fiscally and programmatically, local and state systems supporting disaster recovery and their strengthened integration with voluntary agencies and the private sector.

- Modeled after NIH's multi-year funding approach, state and local funding spans a 4-year cycle, allowing for a more strategic and sustainable approach to building preparedness, response, and recovery systems.

- Better administrative processes allow grantees to focus on and advance mitigation, preparedness, response, and recovery tasks at hand.

- More stable and secure routine funding helps build up infrastructure that did not previously exist and allows for fewer short term, disease specific injects of funding. When such is needed, it comes from a pre-established, nimble response fund used to provide funding at the outset of federally declared public health emergencies. Such funding, when distributed occurs in integrated bundles rather than being channeled through multiple agencies.

- The capacity to provide a strong and effective public health response is seen as integral to our national defense and funding between public health response and defense is better balanced.

Expanded Partnerships and Cross-Sector Investment

- Strong partnerships are in place between ASPR and the Department of Education, resulting in increasing school crisis preparedness. This partnership enables ASPR to also influence and support preparedness in other child congregate care sites such as daycares, camps, after school programs, child detention centers, etc. Other cross agency partnerships related to youth have expanded as well, including agencies such as Juvenile Justice (for preparedness in child detention sites).

- Greater engagement in public-private partnerships captures the potential of a highly resourced society. This helps realize opportunities such as artificial intelligence and real time solutions. It also promotes grass roots innovation. To this end, the ASPR has pre-assembled a group to collectively produce a vaccine in 28 days (in response to a bio/chem attack). This and other groups are public-private partnerships where industry takes on some of the responsibilities in communities to help with (rapid) MCM production. Scientists with pediatric expertise are active contributors to these partnerships.

- Partnerships also focus on increasing availability and expanded use of rapid diagnostics,

- There are dramatic improvements and technological innovations to meet children's overall needs in disaster. These evolved through creative partnerships with private companies such as Google, Apple, and others.

Communications

- Community Outreach and Education for response scenarios occur in short, targeted video clips making it easier for the ASPR to produce targeted Just in Time public trainings during events.

- There is effective use of social media and messaging with novel ways in place to track both the uptake and accuracy of health-related information shared on social media platforms.

Routine Trainings and Exercises

- Trainings are regularly held and include varied levels of depth for different players. Trainings include role plays and embedded exercises wherever feasible, focusing on action-based, experiential rather than an over-reliance on didactic learning.

- The regular engagement of community in exercises to focus on the needs of children in disasters empowers all sectors involved to improve preparedness, response, and recovery efforts.

Appendix C: NACCD and NBSB Member Rosters

NACCD Voting Members

Scott Needle, M.D., FAAP (Chair)
Medical Director for Patient Safety and Quality of Care
Healthcare Network of Southwest Florida

Michael Anderson, M.D., MBA, FAAP
President
UCSF Benioff Children's Hospitals

Allison Blake, Ph.D.
Senior Fellow
Child Welfare Strategy Group
The Annie E Casey Foundation

David Esquith
Director
Office of Safe and Healthy Students
U.S. Department of Education

Robin Gurwitch, Ph.D.
Clinical Psychologist
Duke University Medical Center
Department of Psychiatry and Behavioral Sciences

Lauralee Koziol
Former FEMA Child Coordinator
Senior Analyst
Office of Regional and Field Coordination
FEMA Individual Assistance Federal Emergency Management Agency
U.S. Department of Homeland Security

Linda MacIntyre, Ph.D., RN
Chief Nurse
American Red Cross

Susan McCune, M.D., MAEd, FAAP
Director, Office of Pediatric Therapeutics (OPT)
Office of the Commissioner
Food and Drug Administration (FDA)

Sarah Park, M.D.
State Epidemiologist and Chief
Disease Outbreak Control Division
Hawaii Department of Health

Georgina Peacock, M.D., M.P.H., FAAP
Director, Division of Human Development and Disability
National Center for Birth Defects and Developmental Disabilities
Centers for Disease Control and Prevention
U.S. Department of Health and Human Services

Sally Phillips, RN, Ph.D.
Deputy Assistant Secretary
Director, Office of Strategy, Policy, Planning, and Requirements
U.S. Department of Health and Human Services
Office of the Assistant Secretary for Preparedness and Response

Jeffrey Upperman, M.D.
Director, Trauma Program
Associate Professor of Surgery
Division of Pediatric Surgery
Children's Hospital Los Angeles
Keck School of Medicine
University of Southern California

Anne Zajicek, M.D., Pharm.D., FAAP
Deputy Director, Office of Clinical Research
National Institutes of Health
U.S. Department of Health and Human Services

Ex-Officio Member

Gary L. Disbrow, Ph.D.
Acting Director
Biomedical Advanced Research and Development Authority (BARDA)
Office of the Assistant Secretary for Preparedness and Response
U.S. Department of Health and Human Services

ASPR Subject Matter Expert Liaison

Daniel Dodgen, Ph.D.
Director of Policy
Office of Strategy, Policy, Planning, and Requirements
Office of the Assistant Secretary for Preparedness and Response (ASPR)
U.S. Department of Health and Human Services

NBSB Voting Members

Prabhavathi Fernandes, Ph.D. (Chair)
Founder, President, and Chief Executive
Member of the Board of Directors
Cempra, Inc.

Carl Baum, M.D., FAAP, FACMT
Professor of Pediatrics, Yale University School of Medicine, Attending Physician, Pediatric Emergency Department, Director, Yale-New Haven Children's Hospital

John Benitez, M.D., M.P.H
Medical Director, Tennessee Department of Health,
Emergency Preparedness Program
LT COL, Preventive Medicine Officer,
US Army Reserves

Virginia A. Caine, M.D.
Health Director
Marion County Public Health Department
Associate Professor of Medicine
Indiana University School of Medicine

Mark Cicero, M.D.
Medical Officer, Connecticut Disaster Medical Assistance Team, Co-Medical Director – Emergency Medical Services for Children, Director, Pediatric Disaster Preparedness and Medical Director of EMS for Pediatrics

H. Dele Davies, M.D., M.Sc., M.H.C.M.
Vice Chancellor for Academic Affairs and Dean for Graduate Studies
Professor, Department of Pediatrics, College of Medicine and
Professor, Department of Epidemiology, College of Public Health

Donald G. Heppner, M.D.
Chief Medical Officer and Managing Partner
Crozet BioPharma Consulting LLC

Noreen A. Hynes, M.D., M.P.H.
Associate Professor, Medicine and Public Health
Director, Geographic Medicine Center
Division of Infectious Diseases
Johns Hopkins University School of Medicine

Elizabeth Leffel, Ph.D., M.P.H.
President, Leffel Consulting Group, LLC
Executive Director, Technical Development, Heyltex Corporation

David Schonfeld, M.D., FAAP
Professor of the Practice in the Suzanne Dworak-Peck
School of Social Work and Pediatrics at the University of
Southern California and Children's Hospital Los Angeles
Director, National Center for School Crisis and
Bereavement

Joelle N. Simpson, M.D., M.P.H
Medical Director for Emergency Preparedness
Children's National Health System

Catherine Slemp, M.D., M.P.H.
Public Health Consultant,
Catherine Slemp Public Health Consulting

Tammy Spain, Ph.D.
Senior Technical Staff Member
Charles Stark Draper Laboratory
Bioengineering Center
University of South Florida

NBSB Ex-Officio Members

Executive Office of the President
Vacant- TBD

Intelligence Community
Anne Dufresne
Associate Deputy Director, Intelligence Integration
National Counter-proliferation Center
Office of the Director of National Intelligence

National Aeronautics and Space Administration
JD Polk, DO, MS, MMM, CPE, FACOEP
Chief Health and Medical Officer
Office of the Chief Health and Medical Officer

National Science Foundation
Vacant – TBD

U.S. Department of Agriculture
Randall L. Levings, D.V.M., Ph.D.
Scientific Advisor
National Center for Animal Health

U.S. Department of Commerce
Dianne L. Poster, Ph.D.
Special Assistant
Associate Director for Laboratory Programs
Director's Office
National Institute of Standards and Technology

U.S. Department of Defense
COL Gary Wheeler
Medical Corps, Commander
U.S. Army Medical Research Institute of Infectious Diseases

U.S. Department of Energy
Patricia Worthington, Ph.D.
Director, Office of Health and Safety
Office of Health, Safety and Security

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
RADM Stephen Redd, MD
Director
Office of Science and Public Health Practice
Office of Public Health Preparedness and Response
Centers for Disease Control and Prevention

National Institutes of Health
Hugh Auchincloss, M.D.
Principal Deputy Director
National Institute of Allergy and Infectious Diseases

Office of the Assistant Secretary for Preparedness and Response
George W. Korch Jr., Ph.D.
Senior Science Adviser
Office of the Assistant Secretary for Preparedness and Response

Office of the Assistant Secretary for Health
Vacant - TBD

Food and Drug Administration
Brooke Courtney, JD, MPH
Senior Regulatory Counsel
Office of Counterterrorism and Emerging Threats
Office of the Commissioner

U.S. Department of Homeland Security
Vacant - TBD

U.S. Department of the Interior
Patricia Bright
Science Advisor for Communications and Partnerships
U.S. Geological Survey

U.S. Department of Justice
Rosemary Hart, J.D.
Special Counsel
Office of Legal Counsel

U.S. Department of State
Judith Garber
Acting Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs

U.S. Environmental Protection Agency
Gregory Sayles, Ph.D. M.S.
Director
National Homeland Security Research Center

U.S. Department of Veterans Affairs
Victoria J. Davey, Ph.D., M.P.H.
Chief
Office of Public Health

U.S. Nuclear Regulatory Commission
Patricia A. Milligan, R.Ph., C.H.P.
Senior Advisor for Emergency Preparedness

NACCD-NBSB Future Strategies for Children Working Group Members

Michael Anderson, M.D., MBA, FAAP

Allison Blake, Ph.D., L.S.W.

John Bradley, M.D. (Retired NBSB member)

Prabhavathi Fernandes, Ph.D. (NBSB Chair)

Robin Gurwitch, Ph.D.

Steven Krug, M.D. (Retired NBSB Chair)

Susan McCune, M.D., MAEd, FAAP

Scott Needle, M.D. (NACCD Chair)

Jeffrey Upperman, M.D.

Office of the Assistant Secretary for Preparedness and Response (ASPR)

CDR Jonathan White, Ph.D., LCSW-C, CPH
Chief, Domestic Policy
Designated Federal Official
Office of Strategy, Policy, Planning, and Requirements

Maxine Kellman, D.V.M., Ph.D., PMP
Biotechnology Analyst
Alternate Designated Federal Official
Office of Strategy, Policy, Planning, and Requirements

Sarah Verbofsky, MPA
Jr. Management Analyst
Office of Strategy, Policy, Planning, and Requirements