2012-2013 Report of the
Children’s HHS Interagency Leadership on Disasters
(CHILD) Working Group:
Update on Departmental Activities and
Areas for Future Consideration

May 2014
## Table of Contents

Executive Summary ............................................................................................................. 3  
I. Introduction ................................................................................................................... 7  
II. 2012-2013 Departmental Activities Since Completion of 2011 Report ................................. 9  
   A. Behavioral Health ....................................................................................................... 9  
   B. Medical Countermeasures ......................................................................................... 11  
   C. Child Physical Health, Emergency Medical Services, and Pediatric Transport ........... 17  
   D. Child Care, Child Welfare, and Human Services ..................................................... 20  
III. Pregnant and Breastfeeding Women and Newborns ......................................................... 24  
   A. Maternal and Neonatal Physical Health .................................................................... 24  
   B. Disaster Behavioral Health Considerations for Pregnant Women ............................. 33  
   C. Breastfeeding in Disasters ....................................................................................... 38  
   D. Medical Countermeasures for Obstetric and Neonatal Populations ..................... 41  
IV. Children at Heightened Risk ......................................................................................... 52  
   A. Background ............................................................................................................. 52  
   B. Programs and Activities ........................................................................................... 52  
      1. Low-Income Children and Families ........................................................................ 52  
      2. Children with Disabilities and/or Special Health Care Needs ......................... 53  
      3. Children with Cultural or Linguistic Health Disparities ...................................... 55  
   C. Areas for Future Consideration ............................................................................... 56  
V. Interdepartmental and Non-Governmental Organization Collaboration .............................. 58  
   A. Background ............................................................................................................. 58  
   B. Programs and Activities ........................................................................................... 58  
      1. Collaboration Among the Department of Health and Human Services Agencies .... 58  
      2. Collaboration Between Federal Agencies ............................................................... 60  
      4. Collaborative Task Force Efforts during 2012 Storms Isaac and Sandy .................. 66  
   C. Areas for Future Consideration ............................................................................... 69  
VI. Acknowledgements ....................................................................................................... 71  
VII. Appendix A: List of Acronyms ...................................................................................... 72  
VIII. Appendix B: 2011 CHILD Working Group Recommendations .................................... 76  
IX. Appendix C: CHILD Working Group Members 2012-2013 ............................................ 78  
X. Appendix D: Sample Pregnancy Passport ...................................................................... 80  
XI. Appendix E: Infant Feeding in Disasters Infographic ..................................................... 82  

## Citation

Executive Summary

The United States (U.S.) Department of Health and Human Services (HHS) has made significant progress in addressing the needs of children in disasters. As part of its long-standing commitment to the health and well-being of children, HHS established the Children’s HHS Interagency Leadership on Disasters (CHILD) Working Group in 2010 to integrate the needs of children across all disaster preparedness, response, and recovery activities. Since 2010 and the delivery of its first report, the Working Group has documented progress and facilitated further activities and initiatives. The present report describes the progress HHS has made since 2011 and highlights three new focus areas (pregnant and breastfeeding women and newborns, children at heightened risk, and interdepartmental and non-governmental organization collaboration).

I. Examples of 2012-2013 Departmental Activities since the 2011 Report

Chapter II of this report provides a detailed inventory of departmental activities and advancements in 2012-2013. Examples of HHS efforts and progress toward the Working Group’s 2011 recommendations within the four major sections of the report are outlined below.

1. Mental and Behavioral Health highlights include:
   - In 2011, the *HHS Disaster Behavioral Health Concept of Operations* (DBH CONOPS) was developed and published. This document promotes the integration and coordination of behavioral health into public health preparedness and response activities.
   - In 2012, the Substance Abuse and Mental Health Services Administration (SAMHSA) launched the Disaster Distress Helpline, the first hotline dedicated to providing disaster crisis counseling for survivors and responders.
   - The DBH CONOPS was revised in 2013 and incorporated lessons learned from Superstorm Sandy and the Sandy Hook Elementary School tragedy.
   - In 2013, the National Institute of Mental Health, HHS Assistant Secretary for Preparedness and Response, and SAMHSA funded the first set of research projects related to disaster behavioral health effects and interventions following Superstorm Sandy.

2. Medical Countermeasures (MCMs) highlights include:
   - The Food and Drug Administration (FDA) took several actions to address regulatory and ethical issues in pediatric medical countermeasure development. These include the convening of a *Public Workshop on Ethical and Regulatory Challenges in the Development of Pediatric Medical Countermeasures* and work with the Centers for Disease Control and Prevention (CDC) to identify data gaps that could inhibit the effective use of stockpiled MCMs in children.
3. **Child Physical Health, Emergency Medical Services (EMS), and Pediatric Transport** highlights include:

- The reorganization of the *Eunice Kennedy Shriver* National Institute for Child Health and Human Development resulted in a new branch, “Pediatric Trauma and Critical Illness Branch,” which supports research on the psychosocial, behavioral, and physiological influences and interventions that impact child health outcomes in trauma, injury, and acute care.

- Training on Disasters and Public Health Emergencies was incorporated for all newly commissioned U.S. Public Health Service Commissioned Corps Officers as part of the Officer Basic Course. Training focuses on the physical health, behavioral health, and human services needs of children and youth.

- The Health Resources and Services Administration’s (HRSA) Emergency Medical Services for Children targeted funds to support innovations in pediatric disaster preparedness.

- HRSA launched “PEDPrepared,” an informational clearinghouse of pediatric disaster resources specifically targeted to health providers, disaster and emergency planners, and families. HRSA also awarded six demonstration grants to create regionalized systems of pediatric emergency care for rural, tribal, and insular communities in Alaska, Arizona, California, Montana, New Mexico, and Pennsylvania.

4. **Child Care and Child Welfare** highlights include:

- The Administration for Children and Families (ACF) Office of Human Services Emergency Preparedness and Response (OHSEPR) and the Family Violence Prevention and Services Program provided training for the nation’s State Administrators for Family Violence Prevention and Services on disaster preparedness.

- ACF’s Office of Head Start also included training in preparedness planning during a summit for Head Start executives.

- In 2013, ACF released the *Children and Youth Task Force in Disasters: Guidelines for Development*. This resource provides guidance to help emergency management, human services, and public health professionals implement an effective, integrated approach to supporting children’s needs in emergency preparedness, response, and recovery.
II. New Focus Areas
CHILD Working Group members launched new initiatives in the following areas.

1. Pregnant and Breastfeeding Women and Newborns
   A. Background
      • Pregnant women are more vulnerable because disasters have been associated with increases in pre-term delivery, low birth weight infants, negative psychological effects, and decreases in or discontinuation of breastfeeding.
      • Caring for pregnant women and newborns requires specialized skills and equipment because they are more vulnerable to interruptions in care and the challenges with administering MCMs.
   B. Programs and Activities Currently Underway
      • Dissemination of a toolkit to assist public health departments in assessing the needs and outcomes of women of reproductive age after disasters.
      • Use of prenatal care records and mobile-phone messaging communications to support women’s disaster preparedness, resilience, and access to services.
      • Research on the perinatal effects of recent natural disasters.
      • Commitment to improving the availability of MCMs that can be used safely and effectively in infants and pregnant women.

2. Children at Heightened Risk
   A. Background
      • Children experience a wide array of access and functional needs and challenges that place them at increased risk in disasters.
   B. Programs and Activities Currently Underway
      • Implementation of Children and Youth Task Forces in Disasters, which support at-risk children and families and restore critical services including child care, Head Start, behavioral health, and financial assistance.
      • Preparedness messaging designed for low-income families with children.
      • Surveys of pediatricians and parents of children with special health care needs regarding influenza and influenza treatment.
      • Strategic education and outreach to promote influenza preparedness for children with neurologic and neurodevelopmental disabilities.

3. Non-Governmental Organization (NGO) Collaboration
   A. Background
      • Supporting the health and safety of children requires collaboration among numerous partners with capabilities to affect positive outcomes.
   B. Programs and Activities Currently Underway
- Synchronization among HHS grant programs at the national, programmatic level and awardee coalition activities.
- Website development to provide tools on early childhood disaster preparedness for multiple audiences.
- Partnership with NGOs to conduct impact assessments of child care systems and address disaster-caused gaps in child care after disasters.
- Capacity and quality improvement evaluations on the readiness of the nation’s hospitals to care for pediatric patients after disasters.

HHS remains committed to the continued implementation of its original recommendations as outlined in Appendix B, as well as those of the new National Advisory Committee on Children and Disasters. The CHILD Working Group will continue to meet on a regular basis to ensure integration and coordination of children’s needs across HHS.
I. Introduction

A. Background on the Children’s United States (U.S.) Department of Health and Human Services (HHS) Interagency Leadership on Disasters (CHILD) Working Group

Children comprise approximately 25 percent of the U.S. population and have unique anatomic, developmental, and physiological differences from adults that can predispose them to more serious physical and psychological harm from disasters. The potential impact of disasters on children can extend from the immediate response phase through the recovery phase, creating challenges, but also creating opportunities to mitigate the effects. Because of the size and scope of HHS and the number of activities already underway, the Department recognized the need to establish a coordination process that could plan for and address children’s needs in disasters even when no response is occurring. To this end, the Assistant Secretary for Preparedness and Response (ASPR) and Assistant Secretary of the Administration for Children and Families (ACF) created the CHILD Working Group in February 2010 to comprehensively integrate the needs of children across all HHS disaster planning activities and operations. ACF and ASPR asked the Working Group to assess current capabilities and facilitate coordination at the policy and response levels, as well as to develop a set of recommendations that could enhance how the Department provides and facilitates care to address the disaster-related health and human services needs of children during and after disasters or public health emergencies. The 2010-2011 Working Group divided itself into four subcommittees: 1) Mental and Behavioral Health, 2) Medical Countermeasures (MCMs), 3) Child Physical Health, Emergency Medical Services (EMS), and Pediatric Transport, and 4) Child Care and Child Welfare. Representatives considered the 2010 recommendations of the former National Commission on Children and Disasters (NCCD), internal policy and programmatic initiatives already begun across the Department, and reflections following recent experiences such as the 2009 H1N1 influenza pandemic and the 2010 earthquake in Haiti. The 2011 Report of the Children’s HHS Interagency Leadership on Disasters (CHILD) Working Group: Progress and Future Directions – Enhancements for HHS to Better Address the Disaster-Related Needs of Children was developed by the 20 HHS divisions represented on the Working Group and through the efforts of its four subcommittees. The 2011 report was formally cleared throughout the Department and transmitted to the heads of all HHS Operating and Staff Divisions on August 1, 2012. The CHILD Working Group’s inaugural report proposed 21 recommendations, summarized in the figure in the Executive Summary, for addressing the disaster-related health and human services needs of children.

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3. For more information on the impact of and lessons learned from the 2009 H1N1 pandemic in rural areas, see the following reports: Policy Brief: The Rural H1N1 Experience: Lessons Learned for Future Pandemics (http://publichealth.hsc.wvu.edu/wvhrc/2013/06/H1N1%20Policy%20Brief%20Final%20June%202013.pdf) and Final Report: The Rural H1N1 Experience: Lessons for Future Pandemics (http://publichealth.hsc.wvu.edu/wvhrc/2013/06/H1N1FINAL%20June%202013.pdf).
B. Structure of the 2012-2013 Report
The first chapter of this report (II) provides a descriptive list of 2012-2013 departmental activities supported by CHILD Working Group member agencies since the completion of the 2011 report. After formally submitting that report to HHS leadership and posting a public update online, CHILD Working Group members decided to prioritize three new areas of focus for 2012-2013; these were topics the group acknowledged during its work in 2010-2011 but was unable to address in its first report. These areas were 1) pregnant and breastfeeding women and newborns; 2) children with special health care needs and other sub-populations of children at heightened risk and historically under-represented in disaster planning efforts; and 3) enhancing collaboration across government and with non-governmental organizations (NGO). The majority of this report covers these three areas.

The subcommittee that led the development of the chapter on pregnant and breastfeeding women and newborns decided to organize its review into four additional subsections that follow the original themes of the 2011 report. All three main chapters of this report (III, IV, and V) adhere to a structure that begins with background, followed by a description of relevant programs and activities, and concludes with next steps for future consideration, with additional subheadings specific to the chapter topic.

The appendices offer a list of acronyms and two documents that supplement discussion contained within the report. The appendices also provide a list of Working Group members and highlight the 2011 CHILD Report recommendations (Appendix C).

C. Future Directions of the CHILD Working Group
HHS policies and programs will continue to emphasize and address the disaster health and human services needs of children and families. Future reports of the CHILD Working Group will focus on periodic progress updates and may include new material as the group is consulted to consider additional topical areas by HHS leadership. This report is especially timely given the formation of the National Advisory Committee on Children and Disasters (NACCD), a new committee required by section 2811A of the Public Health Service Act (42 U.S.C. 300hh-10a) as amended by the Pandemic and All-Hazards Preparedness Reauthorization Act (PAHPRA) of 2013. ASPR and ACF leadership expect the reports and knowledge of the CHILD Working Group to be shared with and made available to support the efforts of the NACCD. The CHILD Working Group will continue to serve as a platform for knowledge exchange and coordination among HHS divisions and a springboard from which collaboration can be facilitated and implemented.

5 http://www.phe.gov/Preparedness/legal/boards/naccd/Pages/default.aspx
II. 2012-2013 Departmental Activities Since Completion of 2011 Report

The following is a descriptive list of 2012-2013 activities supported or completed by CHILD Working Group member agencies, organized chronologically, when possible, and in alignment with the four major themes of the 2011 CHILD Working Group report.

Behavioral Health

A. The Disaster Distress Helpline (DDH), the first hotline dedicated to providing disaster crisis counseling, was launched in 2012. The DDH operates 24/7, is free, confidential, and multilingual, and crisis support service is available via telephone (1-800-985-5990) and Short Message Service (SMS) (text “Talk With Us” to 66746). The DDH hosted a live Twitter Chat in May 2012 for parents and caregivers on helping children and teenagers cope after disasters.

B. The Substance Abuse and Mental Health Services Administration (SAMHSA) has provided continued support for the National Child Traumatic Stress Network (NCTSN), including the recent restructuring of the website\(^7\) in a user-friendly way; materials are listed by incident and by phase.

C. In 2012, SAMHSA accepted applications for up to:
   i. $24 million in total funding over the course of four years for a National Child Traumatic Stress Initiative – Category I, National Center for Child Traumatic Stress grant. The Center funded through this grant will develop and maintain the collaborative network structure, support resource development and dissemination, and coordinate national child trauma education and training efforts.
   ii. $51.8 million in total funding over the course of four years for National Child Traumatic Stress Initiative – Category II, Treatment and Services Adaptation Center grants. Up to 16 grantees are expected to receive funding from $600,000 to $1,000,000 per year over the course of up to four years. The grants promote greater access to effective trauma-focused treatment and services for children and adolescents and help support the specialized adaptation of effective treatment and service approaches for communities across the nation.
   iii. $89.6 million in total funding over the course of four years for National Child Traumatic Stress Initiative – Category III, Community Treatment and Services Center grants. Up to 56 grantees will receive up to $400,000 per year over the course of up to four years. This grant program aims to provide trauma treatment and services in communities for children, adolescents, and their families who experience or witness traumatic events.

D. The HHS Disaster Behavioral Health Concept of Operations (DBH CONOPS), first developed and published in 2011, promotes the seamless integration and effective coordination of behavioral health into public health preparedness and response

\(^7\) https://nctsn.org/trauma-types/natural-disasters
activities. Implementation of the DBH CONOPS has included strategies to support and improve broader public health, medical, and response systems such as those employed during responses to Hurricane Sandy and the Sandy Hook Elementary School Tragedy. Lessons learned from these and other responses were incorporated in 2013 into a revised and updated version of the DBH CONOPS, which is available online.8

E. In September 2013, NCTSN promoted the guidebook, “Building Community Resilience for Children and Families,” developed by the Terrorism and Disaster Center at the University of Oklahoma Health Sciences Center with funding from the Centers for Disease Control and Prevention (CDC) and SAMHSA.9 This resource provides information about building community resilience by helping communities improve their capacity to respond effectively to natural or human-caused disasters. To be most effective, community plans must address the emotional well-being of residents, including children. Putting strategies in place before an incident occurs enhances the community’s ability to improve its outcomes after an event. The guidebook is intended for individuals in decision-making and leadership roles, in all sectors of a community, who are committed to improving the emotional outcomes of children and families in the face of disaster. Specific guidelines are provided for leaders representing the following nine sectors: business, community, cultural and faith-based, first responders, health care, media, mental health, public health, and school and other child care settings.

F. In September 2013, the National Institute of Mental Health (NIMH), ASPR, and SAMHSA announced a funding opportunity10 to advance the study of disaster behavioral health effects and interventions. This initiative seeks to leverage the existing disaster mental health response infrastructure and workforce to study the integration of evidence-based and promising interventions into the current mental health response to disasters. The awardee was to receive funding in fiscal year 2014 with a maximum project period of five years.

G. Related to the 2011 CHILD Working Group recommendation to leverage new or expanded health home and behavioral health benefits authorized by the Patient Protection and Affordable Care Act to promote health and resilience in children, the Institute of Medicine’s (IOM) Forum on Medical and Public Health Preparedness for Catastrophic Events hosted a two-day workshop in November 2013 to explore how changes to the U.S. health system might impact individual, community, and public health preparedness. Also in November 2013, ASPR’s National Healthcare Preparedness Program (NHPP) hosted a national webinar entitled, “Healthcare Reform and Preparedness,” to inform the awardees and health care coalitions funded by the Hospital Preparedness Program (HPP) and their partners about how health reform and changes to the daily delivery of care may impact and connect with state and local preparedness efforts.11

9 http://www.nctsn.org/sites/default/files/assets/pdfs/BuildingCommunity_FINAL_02-12-07.pdf
11 http://www.phe.gov/Preparedness/news/events/Pages/health-reform-webinar.aspx
H. Related to the CHILD Working Group recommendation to improve integration among public health, behavioral health, and health care delivery systems through HHS grants, ASPR/NHPP, in partnership with ASPR/At-Risk Individuals, Behavioral Health, and Community Resilience (ABC), is strengthening the disaster behavioral health technical assistance tools and consultation provided to HPP awardees. Behavioral health was a key issue addressed at the National Healthcare Coalitions Preparedness Conference in December 2013 and ASPR/NHPP hosted a national webinar in March 2014 to inform the awardees and health care coalitions funded by HPP and their partners about tools and resources available to strengthen their behavioral health preparedness plans and exercises.

MCMs
A. The Biomedical Advanced Research and Development Authority (BARDA) leadership has increased its focus on special populations, particularly children and pregnant women, when considering MCM procurement and development programs. There is increased awareness and discussion regarding the inclusion of children for all programs involving chemical, biological, radiological, and nuclear (CBRN) terrorist threats as well as pandemic threats. BARDA has extended this prioritization of special populations to the pharmaceutical industry. In October 2011, BARDA hosted an “Industry Days” meeting, concurrently with an American Academy of Pediatrics (AAP) meeting, in Boston in which an estimated 200 pharmaceutical and academic centers interested in MCM development participated. During this Industry Days meeting, a joint presentation regarding MCMs for children was given by Dr. Steve Krug, from the AAP, and Dr. James King, a pediatric clinical subject matter expert (SME) from BARDA. During this presentation, Dr. King stressed the need for discussions on the inclusion of appropriate pediatric MCM development studies in all current and future BARDA-funded programs. Special populations, especially children, were emphasized at the December 2012 BARDA Industry Day meeting and will be included in future BARDA Industry Day programs.

B. Following several new appointments in January 2012, the National Biodefense Science Board (NBSB)12 benefited from five members with expertise in pediatric emergency medicine, infectious disease, and epidemiology.

C. In February 2012, the Food and Drug Administration (FDA) held a Public Workshop on Ethical and Regulatory Challenges in the Development of Pediatric Medical Countermeasures13 that followed two thematic tracks: ethics/policy and science.

i. Sessions within the ethics/policy track included clarification of regulatory distinctions between Emergency Use Authorization (EUA) and emergency access Investigational New Drug (IND) mechanisms; opportunities for clarifying and harmonizing existing Institutional Review Board (IRB) policies and how IRBs at all levels can prepare to respond quickly and effectively in the event of a bioterrorist attack; examination of

12 The National Biodefense Science Board (NBSB) was renamed the National Preparedness and Response Science Board (NPRSB) in the April 2014 charter. See http://www.phe.gov/Preparedness/legal/boards/nprsb/Pages/default.aspx.
the ethical justifications for performing a pre-event study to gather safety and immunogenicity data in children to support pediatric labeling of MCM products; emergency risk communication and risk perception; and how current developments in federal policy can impact pediatric MCM development.

ii. Sessions within the science track included discussion of pre-clinical and clinical data that could support pediatric MCM development (e.g., data from foreign countries, species extrapolation); a case study review of the regulatory backdrop and lessons learned concerning the FDA’s approval and dosing recommendations for the pediatric use of pralidoxime; a case study review of the 2009 H1N1 influenza pandemic and lessons learned related to regulatory science challenges of rapid vaccine development and licensure, real-time data collection and analysis of safety and immunogenicity data, and risk communication; exploration of how to leverage limited data to inform regulatory decision making for MCMs; and discussion of human factors and the use of medical devices.

D. In March 2012, BARDA announced a Small Business Sources Sought Notice for Midazolam as a Medical Countermeasure for Organophosphorus Compound Exposure, which sought information from small businesses with capabilities relevant to supply the following products:

i. adult midazolam-filled (2 mL of 5 mg/mL midazolam solution), labeled, and packaged autoinjectors;

ii. pediatric midazolam-filled (1 mL of 5 mg/mL midazolam solution), labeled, and packaged autoinjectors; and

iii. Midazolam in labeled and packaged multi-dose vials.

BARDA used responses to this notice to determine the capability of any existing small business toward the possible procurement of midazolam autoinjectors and/or multi-dose vials.

E. In April 2012, FDA approved levofloxacin to prevent and treat plague in pediatric patients six months of age and older, as well as in adults.

F. On April 30-May 1, 2012, FDA held a public workshop on Development of Animal Models of Pregnancy To Address Medical Countermeasures for Influenza in the ‘At Risk’ Population of Pregnant Women: Influenza as a Case Study, which provided a forum to carefully consider scientific issues related to selecting animal models for use in evaluating anti-influenza drugs that may be given during pregnancy. Specifically, the workshop addressed experimental design issues in selecting the most appropriate animal model that mimics human pregnancy.

G. The FDA-related portions of the Best Pharmaceuticals for Children Act (BPCA) and the Pediatric Research Equity Act were permanently reauthorized in July 2012, and will no longer be subject to renewal every five years, through the Food and Drug Administration

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15 http://dailymed.nlm.nih.gov/dailymed/lookup.cfm?setid=ee3c9555-60f2-4f82-a760-7b5c386e97b
Among other critical benefits, FDASIA makes pediatric product development a permanent part of FDA’s authorities, requires early consideration of the pediatric use possibilities for all products being developed, and therefore transforms FDA’s approach to product development such that use in the pediatric population is now part of the process and no longer an additional or optional component. The National Institutes of Health (NIH) program of research on pediatric therapeutics was reauthorized for five years in July 2012.

H. CDC has held four anthrax-related meetings as follows: the first on clinical management (October 2011), the second on anthrax anti-toxin and post-exposure prophylaxis (March 2012), the third to specifically address pregnant, post-partum, and newborn issues (August 2012), and the fourth to develop pediatric clinical guidelines (November 2012).

i. The third outreach meeting focused on the integration of the needs of pregnant and post-partum women into the nation’s overall capability for anthrax MCMs. Participants included state and local officials, academicians, American College of Obstetricians and Gynecologists (ACOG), as well as officials from the Department of Homeland Security (DHS) and the Department of Defense. The effort responded to one of the high-priority action items that emerged from the ASPR-led countermeasure portfolio review process. The final guidance was published in October 2013.\(^\text{18}\)

ii. The fourth meeting was jointly sponsored by CDC and AAP to collect SME opinion on a clinical report for post-exposure prophylaxis and treatment of anthrax in children. Participants also examined the unique communication needs of parents and pediatric clinicians that might emerge during an anthrax attack. The final report was published in *Pediatrics* in May 2014.\(^\text{19}\) Experts from the CDC, the AAP, and other collaborating organizations are currently working on any adaptations to the recommendations in this report to a standard of care appropriate for a mass casualty event.

I. In August 2012, The Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) Senior Council approved the policy-based analysis for potassium iodide in the Strategic National Stockpile (SNS) for pediatric populations.

J. In December 2012, FDA approved raxibacumab to prevent and treat inhalational anthrax, including coverage for pediatric populations.\(^\text{20}\) Even in the absence of pediatric safety and pharmacokinetics (PK) data, FDA used a population PK approach to derive dosing regimens that are predicted to provide coverage for pediatric patients comparable to the observed safety profile in adults.\(^\text{21}\)


\(^{19}\) Pediatric Anthrax Clinical Management http://pediatrics.aappublications.org/content/133/5/e1411.full

\(^{20}\) http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm332341.htm

\(^{21}\) http://www.accessdata.fda.gov/drugsatfda_docs/nda/2012/125349Orig1s000Lbel.pdf
K. Also in December 2012, FDA expanded the approved use of Tamiflu (oseltamivir) to treat children as young as two weeks old who have shown symptoms of influenza for no longer than two days.22

L. As previously noted, the PAHPRA23 was passed in March 2013. The renewal and improvement of this authorizing legislation has significant, positive implications for preparedness and response efforts, as well as those specific to children. PAHPRA explicitly included pediatric MCMs within the established system for prioritizing research efforts on pediatric drugs and biologics. PAHPRA also called for the establishment of the new NACCD, which will convene in 2014, and made a number of changes to the law relevant to pediatric MCMs. FDA has developed a summary of these provisions, available online. 24

M. In March 2013, FDA licensed Botulism Antitoxin Heptavalent (A, B, C, D, E, F, G) – (Equine) to treat botulism, including coverage for pediatric populations. Although this product was not studied in pediatric populations, dosing in pediatric patients is based on the Salisbury Rule (weight-based dosing).

N. In April 2013, the Government Accountability Office (GAO) released its report, “National Preparedness: Efforts to Address the Medical Needs of Children in a Chemical, Biological Radiological, or Nuclear Incident.”25 GAO found that despite various, “…economic, regulatory, scientific, and ethical challenges in developing and acquiring pediatric CBRN MCMs…HHS has taken steps to focus agency efforts on the pediatric population, adapt pediatric formulations from existing MCMs, and prepare and review materials for EUAs and INDs in advance of public health emergencies.”

O. Subsequent to the March 2012 Sources Sought Notice (item D above), BARDA announced in September 2013 a new contract26 through Project BioShield to conduct studies of midazolam to seek approval from the FDA for the drug’s use in treating seizures caused by nerve agents. Meridian will seek FDA approval of a midazolam autoinjector for children and adults, as well as approval of midazolam for use in treating common prolonged seizures.

P. In 2012, CDC’s Office of Public Health Preparedness and Response (OPHPR) funded the National Center on Birth Defects and Developmental Disabilities (NCBDDD) to spearhead an initiative to coordinate CDC activities related to children’s preparedness and response. In addition to leading the anthrax clinical guidance activities described above, the CDC Children’s Preparedness Initiative has engaged in a number of activities including:

i. Collaborating with the Harvard School of Public Health to determine public perceptions of pediatric preparedness issues, such as compliance to antibiotic regimens after aerosol release of B. anthracis spores.

ii. Producing a learning module for local public health emergency planners on addressing children’s needs during a response to a wide-area release of B. anthracis.

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22 http://dailymed.nlm.nih.gov/dailymed/lookup.cfm?setid=ee3c9555-60f2-4f82-a760-11983c86e97b
24 http://www.fda.gov/EmergencyPreparedness/MedicalCountermeasures/ucm346195.htm
iii. Discussing pediatric MCM issues with planners from state and local health departments in order to build a **toolkit of resources on pediatric MCM dispensing** issues and provide technical assistance.

iv. Collaborating with the OPHPR communications team on the production of a **coloring book series for kids** called “Ready Wrigley.” ²⁷ This series educates children and parents on being ready for various emergency scenarios.

v. With the FDA, revising current **doxycycline crushing and mixing instructions**, based on BARDA focus group feedback, to improve user comprehension.

   - CDC is working to develop **video instructions on the home preparation of crushing doxycycline tablets** and mixing with food for children and adults who cannot swallow pills in anticipation of a potential shortage of pediatric/liquid formulations of doxycycline. The video instructions incorporate feedback received from various internal and external groups (including the Pediatric and Obstetric Integrated Program Team [PedsOB IPT]); it will also have captioning for persons who are deaf or hard of hearing. This video will serve as a companion piece to the revised CDC and FDA crushing and mixing instructions pamphlet (forthcoming), which will replace the 2008 FDA pamphlet. ²⁸

vi. Creating a partnership between the SNS and the AAP, resulting in an open dialogue with semi-annual meetings to **ensure the needs of children are considered in SNS planning** and that pediatricians are aware of SNS activities in this area.

Q. The **PedsOB IPT** was established in October of 2011 to advise the PHEMCE on strategies for identifying, developing, acquiring, deploying, and using high priority MCMs for children and pregnant women in public health emergencies. Examples of activities are as follows:

i. The PedsOB IPT provided input on the **requirement for potassium iodide oral solution** for the SNS, and developed a short recommendations paper on the treatment of children with currently stockpiled countermeasures in the event an anthrax attack occurred tomorrow.

ii. For the February 2012 meeting, the PedsOB IPT invited the chair of the **AAP Disaster Preparedness Advisory Council** (DPAC) to share the AAP/DPAC’s priorities and recommendations.

iii. During the August 2012 meeting, the lead epidemiologist in the CDC Division of Reproductive Health (DRH) Program for Emergency Preparedness and Response discussed several projects underway to **support the reproductive health needs of pregnant and post-partum women**, infants, and women of reproductive age after natural or human-caused catastrophic events.

iv. The PedsOB IPT has also reviewed other areas such as the prevalence of dysphagia and its implications for planning for pediatric and other special populations that may

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have difficulty swallowing standard oral dosage forms; non-pharmaceutical and ancillary equipment suitable for children in the SNS; identifying and closing regulatory gaps for the use of products in children and pregnant women; priorities for research to close gaps in data; and participation in the annual review of the contents of the SNS.

R. The **FDA Pediatric and Maternal Public Health Security Action Team** facilitates the assurance that the MCM needs of at-risk populations, such as pediatric and maternal populations, can be met during public health emergencies. For example, this Action Team worked with CDC to identify data gaps that could inhibit the effective use of stockpiled MCMs in children and other at-risk populations. FDA and CDC are working with PHEMCE partners to fill identified data needs.

S. FDA initiated an Intergovernmental Personnel Act Agreement to bring on a pediatrician with extensive emergency planning and biosecurity expertise to FDA to support MCM pediatric research efforts.

T. NIH’s the *Eunice Kennedy Shriver* National Institute for Child Health and Human Development (NICHD) has:
   i. Undergone reorganization resulting in the launch of two new branches, including one titled the “Pediatric Trauma and Critical Illness Branch” (PTCIB). The PTCIB **develops and supports research and training in pediatric trauma and critical illness.** These efforts include:
      - Studies of the continuum of psychosocial, behavioral, and physiological influences that impact child health outcomes in trauma, injury, and acute care;
      - Projects that explore short- and long-term consequences of acute traumatic experiences, such as natural and man-made disasters, all acute forms of child maltreatment, violence, and exposure to violence; research linking pediatric emergency and critical care medicine and science to the epidemiology, prevention, and treatment of childhood physical disabilities; and
      - Research on the prevention, treatment, management, and outcomes of physical and psychological trauma and the surgical, medical, psychosocial, and systems interventions needed to improve outcomes for critically ill and injured children across the developmental trajectory.
   ii. Focused on **dual use drugs** through obtaining PK, safety, and efficacy data on drugs that can be utilized as MCMs for disaster-related situations as well as everyday therapeutic agents.
   iii. Worked with the Duke University Pediatric Trials Network and the FDA to review the methodology being utilized to obtain a **new indication for midazolam** (the treatment of prolonged seizures as well as nerve agent induced seizures in children). The data for this process were obtained through a review of data from prior studies.

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iv. Utilized the **opportunistic study mechanism**, obtaining PK and safety data when the drug being studied is utilized via standard of care. Current studies through this mechanism include acquiring additional data regarding the treatment of children less than eight years of age with doxycycline and the use of hydroxocobalamin for the treatment of cyanide toxicity secondary to smoke inhalation.

U. NIH’s National Library of Medicine (NLM) has made updates to the **Chemical Hazards Emergency Medical Management website** following funding support received from the Countermeasures Against Chemical Threats (CounterACT) program at the National Institute of Neurological Disorders and Stroke. The acute patient care guidelines section was expanded to include additional chemicals. CounterACT also supported development of a new research and development (R&D) focused database for chemical MCMs.

*Child Physical Health, EMS, and Pediatric Transport*

A. In 2011, NIH’s NLM initiated a new program and funded seven **Disaster Health Information Outreach and Collaboration Projects**, one of which focused on children and was awarded to AAP in partnership with the University of Illinois at Chicago, Library of the Health Sciences in Elk Grove, IL. The project sought to improve preparedness and response efforts for children by supporting pediatricians and librarians to work collaboratively and improve the use of and access to disaster medicine and public health information. Other 2011 awardees were located in Alabama, Virginia, West Virginia, Kentucky, New York, and New Mexico.

B. Starting in late 2011, all newly commissioned U.S. Public Health Service (USPHS) Commissioned Corps Officers were trained by ACF’s Office of Human Services Emergency Preparedness and Response (OHSEPR) staff in “At-Risk Individuals in Disasters and Public Health Emergencies.” The module closely focuses on the **physical and behavioral health and human services needs of children and youth**, and is provided during the Officer Basic Course taught by the Office of the Surgeon General.

C. In February 2012, the federal panel of the National Center for Disaster Medicine and Public Health (NCDMPH) met and determined that the three prioritized topics for initial development of a **pediatric disaster training curriculum** are Tracking & Reunification of Pediatric Disaster Victims, Overview of Radiation Exposure in Children, and Psychosocial Impacts on Children.

i. In November 2012, NCDMPH released, “**Tracking and Reunification of Children in Disasters: A Lesson and Reference for Health Professionals.**” This HTML-based learning module is accredited for continuing education credits for multiple professions. In October 2013, NCDMPH hosted a webinar on “Health, Medicine, and Reunification in School Disasters.”

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31 [http://ncdmph.usuhs.edu/KnowledgeLearning/2012-Learning1.htm](http://ncdmph.usuhs.edu/KnowledgeLearning/2012-Learning1.htm)
32 [http://ncdmph.usuhs.edu/NewsEvents/Webinars.htm](http://ncdmph.usuhs.edu/NewsEvents/Webinars.htm)
ii. In September 2013, NCDMPH released, “Psychosocial Impacts of Disasters on Children,” a learning module that addresses the unique psychosocial needs of children in disasters and is geared toward all health professionals. The program includes an “In the Field” lesson, which provides examples of how health care practitioners applied concepts related to the psychosocial welfare of children after an actual event.

iii. A third online lesson is provided through a ten question “knowledge check” and primer, “Radiation Disaster Issues in Children: An Approach to the Patient,” which discusses the unique needs of pediatric patients during and after exposure to radiation. This primer is targeted to health care providers who may be responsible for the medical assessment and management of pediatric patients affected by a radiation disaster, particularly a nuclear detonation.

iv. In addition, NCDMPH developed, “Curriculum Recommendations for Disaster Health Professionals: The Pediatric Population,” a reference tool that aids educators and program directors with planning disaster education and training for health professionals.

D. Health Resources and Services Administration’s (HRSA) Emergency Medical Services for Children (EMSC) Program:

i. Hosted a webcast in June 2012 on Kids in Disasters: Facing Our Challenges. This panel presentation highlighted innovations in pediatric disaster preparedness. The EMSC targeted issue projects, “A Novel Imaging System for Reunification of Children Separated during Disaster” and “Refining Pediatric Disaster Triage Algorithms and Education in the Prehospital Setting,” were presented. Project investigators highlighted significant findings and implications for participants to consider as they strive to improve the provision of emergency care for children during disaster situations.

ii. Continued to fund the Pediatric Emergency Care Applied Research Network (PECARN), which provides infrastructure funding to a research network of 18 hospitals. The network is considering a proposal to study the use of a self-administered, web-based triage tool (administered by parents) to reduce ED visits during an influenza pandemic. PECARN is also looking at developing a study to validate the Strategy for Off-Site Rapid Triage tool that was previously published.

iii. Awarded six State Partnership Regionalization of Care (SPROC) demonstration grants in June 2012 to create regionalized systems of pediatric emergency care for rural, tribal, and insular communities in Alaska, Arizona, California, Montana, New Mexico, and Pennsylvania.
iv. Developed “PEDPrepared,” an informational clearinghouse of pediatric disaster resources specifically targeted to health providers, disaster and emergency planners, and families.\(^\text{39}\)

v. Obtained results from a recently funded targeted issue grant on the development and evaluation of a software facial recognition program to assist parents in finding their children.

vi. Funded a targeted issue grant to develop a disaster triage training curriculum for pre-hospital providers. Collaborated with the Indian Health Service to assure the inclusion of American Indian/Native American organizations and individuals:
- in the nationwide PedsReady assessment of hospitals;
- in general disaster training opportunities, to include Pediatric Advanced Life Support training in remote areas;
- in the assessment of adequate pediatric equipment on ambulances; and
- in opportunities that assure facilities are equipped and medical personnel are trained for emergencies and disasters.

vii. Planned and conducted a nationwide assessment on the readiness of hospital emergency departments (ED) across the country to care for children, which is discussed in greater detail in Chapter III. A pilot of this national survey was conducted in California prior to the national launch in 2012.

viii. Delivered three webinars in August and September 2013 on:
- EMSC and the Hospital Preparedness Program: Working Toward Everyday Pediatric Readiness,\(^\text{40}\)
- EMS for Children Opportunities to Enhance Pediatric Emergency Care through Trauma Performance Improvement,\(^\text{41}\), and
- Transfer Processes – An Opportunity for Improving Pediatric Emergency Care.\(^\text{42}\)

ii. Worked with ASPR’s NHPP to synchronize program efforts at the national level. Ongoing and past collaborative activities include networking for EMSC and NHPP managers, two webcasts for EMSC and NHPP managers as well as representatives of national organizations, and developing a hospital disaster policy checklist of pediatric components.

E. ASPR hosted a second Roundtable on the Federal Movement of Pediatric Patients in October of 2012. Participants included SMEs, stakeholders, and emergency planners from federal, national, and state pediatric patient movement perspectives. A third session was held on March 25, 2014.

F. Dr. Andrew Garrett (ASPR) and colleagues from the private sector gave multiple presentations at the 2012 AAP National Conference and Exhibition in October 2012. The


session discussed **how pediatricians can become involved in disaster planning for their communities and schools**, and also presented options for participating in an organized response to a disaster.

G. Following Superstorm Sandy, ASPR’s Office of Emergency Management assessed the needs of its customers against its current capabilities in an effort to provide more efficient and expedient medical services during the early stages of responses and events. As a result, a newly reviewed and **redesigned life-saving kit** will arrive with first-deployed teams to improve their ability to engage in the delivery of care immediately upon their arrival, and prior to the arrival of the full medical cache of equipment. In addition, this equipment set was constructed to ensure pediatric parity for medications and equipment needed in the initial stages of response.

H. In February 2013, ASPR, CDC, and NIH presented at the annual conference of the Association of Maternal and Child Health Programs, on “The Integration of Maternal and Child Health into Disaster Preparedness and Response: Federal Public Health and Medical Efforts.”

I. A subset of the CHILD Working Group met in April and May 2013 to review the findings of the NCDMPH’s *Pediatric Disaster Curriculum Development: Conference Report* (June 2011) and identify any recommendations that HHS and the Federal Emergency Management Agency (FEMA) could implement with no or minimal resources to address gaps in the development and delivery of pediatric disaster education and training.

J. In June 2013, CDC hired a pediatrician as a **Vulnerable Populations Officer** in the Office of Public Health Preparedness and Response.

K. Discussed further in Chapter III, ASPR and ACF worked closely with FEMA and its core development team on the creation of the *Post-Disaster Reunification of Children: A Nationwide Approach* document, released in November 2013. This framework is meant to address a number of key issues related to **reunification of children** with their families following natural, technological, or human-caused disasters, and describes the roles and responsibilities of stakeholders; conveys standard reunification actions and the coordinating factors required to enable them to function; provides a list of relevant authorities that govern reunification activities; and offers information and resources that local, state, territorial, and tribal governments and private sector partners can use to develop or revise their plans.

**Child Care, Child Welfare, and Human Services**

A. ACF continues to work with governmental and non-governmental partners to address the preparedness, response, and recovery needs of children.


45 [http://ncdmph.usuhs.edu/Documents/PedsConferenceReport_1.pdf](http://ncdmph.usuhs.edu/Documents/PedsConferenceReport_1.pdf)
i. ACF’s OHSEPR is collaborating with the U.S. Department of Education and FEMA on a combined Youth Preparedness Strategy. ACF provided a SME to FEMA’s Youth Advisory Committee, a Whole Community partnership of SMEs, to design a new communications strategy for FEMA to use the web to promote preparedness among children and youth.

ii. ACF also contributed to a FEMA-sponsored webinar on women’s and children’s issues in disasters, providing a presentation on domestic violence in disasters and on recovery for child care systems (available online at http://citizencorps.gov/resources/webinars/womenyouthupdate.shtm).

iii. ACF’s OHSEPR and the Family Violence Prevention and Services Program (FVPSA) continue a collaborative effort to address the problem of domestic violence in disasters, sponsoring trainings for family violence services professionals on preparedness planning. In May 2012, ACF OHSEPR and FVPSA provided a training for the nation’s State Administrators for Family Violence Prevention and Services on disaster preparedness, including attention to planning for the needs of children exposed to domestic violence. ACF’s Office of Head Start (OHS) included training in preparedness planning provided by OHS and OHSEPR in a summit for Head Start executives.

iv. ACF has also been an active partner in the creation of the FEMA-led development of the Post-Disaster Reunification of Children: A Nationwide Approach document discussed above, leveraging its close relationships with child welfare authorities in the states.

v. ACF continues to build capacity for early childhood programs in disasters. In 2013, ACF sponsored an exercise in Kansas City on post-disaster child care recovery, which included participants from federal and state partners in Regions 5, 6, and 7. From September through December 2013, ACF conducted a four-hour mandatory training for all Office of Child Care (OCC) and OHS staff in all regions on their roles in emergency preparedness, response, and recovery.

B. The ACF OCC added several questions about emergency planning to the Child Care and Development Fund (CCDF) block grant application. This action followed the Information Memorandum issued in February 2011. A question in the state plan asks applicants to:

i. “Indicate which of the core elements identified in the Information Memorandum are or will be covered in the Lead Agency child care emergency preparedness and response plan. Check which elements, if any, the Lead Agency includes in the plan.
   • Planning for continuation of services to CCDF families.
   • Coordination with other State/Territory agencies and key partners.

• Emergency preparedness regulatory requirements for child care providers.
• Provision of temporary child care services after a disaster.
• Rebuilding child care facilities and infrastructure after a disaster.
• None.”

Tribal CCDF grant applications included a request to detail whether emergency preparedness and response was included as a potential training topic for providers. With information in the applications, ACF will aggregate the data and look at each grantee’s progress with planning.

C. In June 2013, ACF’s OCC published a proposed rule that would make comprehensive reforms to the CCDF program.\textsuperscript{47} Specific provisions in the proposed rule that pertain to child care emergency preparedness and response included:

i. Requiring CCDF Lead Agencies to coordinate with state emergency management and response agencies as part of development of the CCDF Plan,

ii. Requiring CCDF child care providers to have emergency preparedness and response plans, including provisions for evacuation and relocation, shelter-in-place, and family reunification, and

iii. Requiring CCDF providers to be trained in emergency preparedness and response procedures.

D. ACF’s OHS awarded $3 million to AAP to operate the OHS National Center on Health. The Center will showcase evidence-based practices that ensure all Head Start and Early Head Start agencies have access to the same level of high-quality information, training and technical assistance in order to produce the best possible outcomes for children.

E. The Assistant Secretary for Planning and Evaluation provided support to the Secretary in her role as chair of the U.S. Interagency Council on Homelessness (USICH) in 2012 and continues to coordinate departmental efforts related to homelessness through bi-weekly meetings; regular participants include representatives from ACF, ASPR, Assistant Secretary for Legislation, CDC, Centers for Medicare and Medicaid Services, HRSA, Office of Intergovernmental and External Affairs, and SAMHSA. The 2012 agenda for the USICH focused on the following four homeless population groups: chronic, youth, families, and veterans.

F. ACF and ASPR have developed a plan, or CONOPS, that provides coordination and guidance for the federal-level human services response to disasters and public health emergencies. An effective and well-coordinated human services response aims to mitigate or prevent adverse impacts of disasters on survivors and promote individual and community resilience. Lessons learned from recent emergency events, including the 2009 Haiti earthquake emergency repatriation, the 2010 Deepwater Horizon oil spill, the 2011 Joplin, Missouri tornado, 2011 Hurricane Irene, and 2012 storms Isaac and Sandy, support the need for a CONOPS for disaster human services across the full spectrum of HHS divisions. The

\textsuperscript{47} https://federalregister.gov/a/2013-11673
Human Services CONOPS Working Group had its first meeting in March 2012 and the CONOPS was cleared throughout the Department in 2013 and published in March 2014.\textsuperscript{48}

III. Pregnant and Breastfeeding Women and Newborns

Annually there are about 6.6 million pregnancies in the U.S. that result in over four million live births. Pregnant women are specifically included within the definition of “at-risk individuals” in Section 2802(b)(4)(B) of the Public Health Service Act (42 U.S.C. 300hh–1(b)(4)(B)), as amended by the 2006 Pandemic and All-Hazards Preparedness Act (PAHPA), and in the definition of “populations with special clinical needs” in Section 565 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 360bbb–4), as amended by PAHPRA; and preparedness planning for this population is critical to protect and promote women’s health. Pregnant women have unique physiological differences that can predispose them to more serious harm during disasters compared to non-pregnant women for the same injury. Furthermore, studies have shown an association between disaster and an increase in 1) maternal risk factors such as hypertensive disorders during pregnancy, 2) poor birth outcomes such as pre-term delivery, 3) having low birth weight (LBW) infants, and 4) psychological consequences (such as anxiety and depression) before, during, and after a disaster. Additionally, statistics show that disaster-affected women are at increased risk for not breastfeeding or shorter duration of breastfeeding, as was observed after Hurricane Katrina. It is for these reasons that the CHILD Working Group has focused its attention for this chapter in four areas:

A. Maternal and Neonatal Physical Health
B. Disaster Behavioral Health Considerations for Pregnant Women
C. Breastfeeding in Disasters
D. MCMs for Obstetric (OB) and Neonatal Populations

A. Maternal and Neonatal Physical Health
This section on maternal and neonatal physical health (excluding the discussion of MCMs under part D of this chapter) covers topics related to usual prenatal care, high-risk maternity care, delivery, surge capacity, EMS and transport, sheltering, pre- and post-disaster assessment and

56 The term “neonate” refers to an infant in the neonatal period – the first four weeks of a child’s life – when rapid and critical developmental changes and events can occur. From MedlinePlus Online, NIH. http://www.nlm.nih.gov/medlineplus/ency/article/002271.htm
evaluation, newborn screening, prenatal records management, mobile health communications, and continuity of supplemental nutrition assistance.

1. **Background**

There are many obstetrical and neonatal patient issues that may be compounded by the complexities of disasters. Every day, women with varying degrees of risk factors attend antenatal clinics, present for acute medical and obstetrical care in hospital settings, or are in the post-partum period. Following delivery, healthy newborn infants may room with the mother or be cared for in normal newborn nurseries, intermediate intensive care units, or in intensive care units, depending upon their degree of need. Thus, disaster planning should develop schemes based on patient illness severity, with specific designations about how and what will be accomplished, and by whom, in the event of a disaster.58

Managing perinatal59 patients also requires a special set of skills to conduct delivery, perform cesarean births, carry out neonatal resuscitation, provide intensive care support for those who need it, and monitor women for post-partum complications. The Neonatal Intensive Care Unit (NICU) is highly dependent upon instruments and devices, and special attention needs to be given to their maintenance and functional status. Frequent assessment and inventory of medications and supplies (such as portable intensive care beds, battery-powered monitors, oxygen/room air blenders, assisted ventilator devices, and phototherapy units) should be incorporated into planning checklists.

A health care team needs to know about a neonate’s vulnerabilities in order to choose effective approaches to potentially life threatening maladies. Because of physiological instability and the immaturity of organ systems, including the immune system, newborn infants are especially vulnerable to adverse effects of sudden perturbations or interruptions in the care they receive. Sick newborn infants are also vulnerable to quickly develop hypothermia, dehydration, hypoglycemia, and sepsis.60 For example, infants who are receiving life-saving cardiopulmonary support medication may rapidly deteriorate if such drugs (e.g., medications for maintaining blood pressure) are discontinued even for a few minutes.61

Thus, all disaster preparedness efforts should develop specific plans to attend to perinatal patients (mothers and infants). This goal can be accomplished by including experts in

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59 Defined as, “of or relating to the time, usually a number of weeks, immediately before and after birth.”


maternal-fetal medicine as well as neonatology during the planning process. Periodic exercises may be useful for continued reinforcement of the written policies and procedures. Additionally, pregnancy and childbirth (12%) and newborns (11%) comprise the second and third most frequent reasons for hospitalizations, accounting for nearly one of every four hospitalizations. Facility assessment and hospital preparedness plans for disaster management should include a section on the specific needs of pregnant women and their infants before, during, and post-delivery. The section should list required equipment, personnel, and procedures specific to the management of pregnant and post-partum women. Examples of these include neonatal screening, care of sick neonates, and prenatal records. These facility assessments and plans may require pilot testing in research studies to ensure completeness and feasibility.

2. **Programs and Activities**

   a. *Estimating the Number of Pregnant Women in a U.S. Jurisdiction*

   The CDC/DRH created a tool to guide emergency planning and response and/or maternal and child health professionals in estimating the number of pregnant women in a U.S. jurisdiction at any given point in time. This estimate can be used during preparedness or emergency response. A copy of the three-page guide, “Estimating the Number of Pregnant Women in a Geographic Area,” is available at [http://www.cdc.gov/reproductivehealth/Emergency/index.htm](http://www.cdc.gov/reproductivehealth/Emergency/index.htm).

   b. *Post-Disaster Assessment*

   The CDC/DRH and the Center for Disaster Preparedness at the University of North Carolina at Chapel Hill created the Reproductive Health Assessment After Disaster (RHAD) Toolkit to assist local and state public health departments to assess conditions, needs, and outcomes among disaster-affected women of reproductive age, including pregnant and post-partum women. It is a web-based set of tools designed to guide users through the planning, implementation, and analysis stages of conducting a reproductive health assessment after a disaster. The questionnaires address safe motherhood, infant care, family planning, family stressors and service needs, health and risk behaviors, and gender-based violence. It also includes variable codebooks and resources for training interviewers, data collection, and analysis. The RHAD Toolkit is available at [http://cphp.sph.unc.edu/reproductivehealth/](http://cphp.sph.unc.edu/reproductivehealth/).

   c. *Post-Disaster Surveillance*

   Post-disaster studies in the U.S. have shown associations between disaster and poor birth outcomes, such as LBW and preterm birth, and increases in medical

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risks among women giving birth. Because there is no known surveillance of disaster-affected pregnant women or their newborns, we do not know what contributes to these outcomes. Systematic data collection through the CDC Pregnancy Risk Assessment Monitoring System (PRAMS)\(^{63}\) could leverage an existing resource to address the gaps in our knowledge of disaster effects on this vulnerable population. Since 1987, PRAMS has provided state-specific data for planning programs and policies that impact maternal and infant health. PRAMS is a collaboration between CDC/DRH and health departments in 40 states and New York City. PRAMS data are collected using a mixed mode methodology (mail and telephone), and data are linked to birth certificates for analysis. Because the usual PRAMS methodology is likely to result in high non-response in the event of a disaster, DRH is exploring how to adapt PRAMS methodology or other appropriate systems to collect information from disaster-affected pregnant women.

d. **Transport**

Transport for disaster-affected, high-risk pregnant women is critical to maternal and neonatal health. The “Guidelines for Perinatal Care,” developed through collaborative efforts of the AAP and ACOG includes recommendations for emergency preparedness planning and reviews federal requirements for patient screening and transfer.\(^{64}\) The intent of the guidelines is to improve the quality of patient care. Even though neither the nation’s EMS system nor the statewide perinatal regionalization system has a federal home, HHS, including the HHS Secretary’s Advisory Committee on Infant Mortality, has a stake in how these systems operate and collaborate during a disaster. The Pediatric Emergency Mass Critical Care Task Force recommended that states and regions should devise plans to address the population-based needs of infants and children, including integration with existing systems.\(^{65}\) This same approach that links EMS and statewide perinatal regionalization systems could be used to assess national capabilities for large-scale obstetrical patient movement during a disaster.

e. **Shelter Care, Shelter-in-Place, and Post-Disaster Follow-Up**

During a pandemic illness, a community-wide exposure, or destructive disaster event with widespread structural impacts to health care facilities, routine prenatal and obstetrical care may need to be altered to decrease and prevent primary and secondary exposure among pregnant women. Alternate approaches may be

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\(^{63}\) [http://www.cdc.gov/prams/](http://www.cdc.gov/prams/)


employed for giving care, such as home monitoring, virtual prenatal care, and/or telephone triage. These same approaches may be used when pregnant women are unable to obtain usual prenatal care and/or post-delivery care following a disaster due to loss of health care facilities, personnel, or personal/physical barriers to seeking care. Furthermore, there appears to be little written guidance regarding basic management of pregnant women in shelters (e.g., monitoring, provision of prenatal care, and accommodations such as ergonomic cots/chairs for late-term pregnant women).

The HRSA Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program facilitates collaboration and partnership at the federal, state, and community levels to improve health and development outcomes for at-risk families through evidence-based home visiting programs. Nurses in the MIECHV program could assist with these alternate approaches for health care during an emergency and keep their constituents informed and connected to services. In addition, CDC’s publication *Public Health Preparedness Capabilities: National Standards for Public Health Preparedness* recommends the inclusion of planning for pregnant women under the Mass Care Capability function. It is critical that public health, emergency management, and mass care planners develop written plans for congregate locations that include processes to a) coordinate with partner agencies to prioritize at-risk populations (including pregnant women), and b) identify resources to support the medical and behavioral health needs of pregnant women.

f. **Routine and Special Newborn Services**

Infants in the U.S. receive routine services, such as Hepatitis B vaccination and hearing and newborn screenings (discussed below), following delivery in a hospital or birth center. CDC and HRSA support infrastructure for states to have carefully outlined plans in place prior to an emergency for programs to facilitate continuity of these routine services and infrastructure for infant follow-up. CDC’s publication *Public Health Preparedness Capabilities: National Standards for State and Local Planning* specifically recommends that state health department laboratories have contingencies to assure newborn screening in a surge situation and suggest the establishment of memoranda of agreement or contracts with commercial vendors.

Newborn screenings are conducted by state programs to detect conditions that endanger the long-term health of infants. Natural disasters are a threat to the integrity of this vital public health program as evidenced after Hurricanes Katrina

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and Rita when there was a two-year interruption of the Louisiana in-state newborn screening program, a six-month closure of genetics laboratory services, and delayed testing among some infants. Iowa provided backup newborn screening to assist Louisiana during the time it was unable to provide needed services. In 2010, CDC and HRSA created a plan that outlines objectives, roles, and responsibilities of CDC, HRSA, and state departments of health to provide for planning and implementation of a newborn screening contingency plan in the event of an emergency. States have developed mechanisms for pre-event planning and testing of their plans, and they are encouraged to use the Emergency Management Assistance Compact framework that supports one state assisting another state during emergencies, as well as training activities that occur outside of actual declared emergency periods.

Other services, such as phototherapy and ventilators, are dependent on electricity to maintain the life of the newborn. As previously noted, facility assessment and hospital preparedness plans for disaster management should include a section on continuity of screenings and maintenance of these related, critical services.

g. **Prenatal Care Records and Disasters**

Even under normal circumstances, pregnant women may present to a site for delivery where the obstetrical provider lacks access to the women’s prenatal care records. To alleviate this problem, some local and state health departments have been pilot testing an approach where the pregnant woman carries prenatal records using “passports” or “booklets” that the prenatal health provider completes and returns to the woman on each visit. However, there have been persistent problems in ensuring the records are complete and that women bring them to the delivery. There has been some improvement when the “passport” was linked with a “journal” that the woman kept as a memento for her baby.

After disasters it is even more likely that obstetrical providers may lack access to prenatal care records at delivery, as evidenced by many pregnant women lacking access to their prenatal records and receiving duplicative services after Hurricane Katrina. At a minimum, the delivering provider needs access to information about the accurate dating of the pregnancy, current medications, chronic and pregnancy-induced conditions, and results of prenatal screening. The increasing use of Electronic Health Records (EHR) technology by U.S. physicians and hospitals, including for promoting continuity of care, has led to speculation that EHRs could form the basis of a strategy whereby health plans incentivize (or require as a condition of coverage) prenatal providers to make prenatal records.

readily available to any doctor or hospital needing complete, reliable information
to provide the safest care and best outcome possible for mother and baby. 68
However, none of the technically feasible approaches to implementing this
strategy has been tested.

To promote the safety and health of both mother and infant, HHS could support
research studies to compare the feasibility, effectiveness, and efficiency of various
approaches enabling critical prenatal medical and health records to follow the
pregnant woman to any provider and location where she may seek care. These
approaches might include paper-based pregnancy “passports,” remotely-stored
prenatal care records, pregnancy journals, and other approaches such as mobile
applications analogous to digital pregnancy passports controlled by the pregnant
woman, encrypted thumb drives, or other encrypted, portable media. Creating a
data repository for a backup copy of the most essential data elements from the
record that prenatal care providers maintain for each pregnant woman, at the
federal or at each state/tribal/territorial level, would be technologically
straightforward but this poses policy and practical questions. It is also
population-specific, and thus its development could divert resources from the
development of disaster-resilient strategies for health record accessibility and care
continuity for all persons affected by a disaster including pregnant women,
children, and other particularly vulnerable groups. The Office of the National
Coordinator for Health Information Technology (ONC) has an interest in
convening Operating Division experts (e.g., HRSA employees) to identify and
characterize the potential and challenges of various options. At a minimum,
perhaps HHS could encourage providers to integrate this initiative into their
existing EHR resilience and Continuity of Operations (COOP) strategies toward
general disaster preparedness.

h. Communicating with Pregnant Women and Mothers of Young Children During a
Disaster
Launched nationally in February of 2010, Text4baby is the nation’s first free
mobile phone messaging health service, developed as a result of a public-private
partnership by the following founding partners: National Healthy Mothers,
Healthy Babies Coalition, Voxiva, Inc., CTIA-The Wireless Foundation, Johnson
& Johnson, Grey Healthcare Group, and HHS. Text4baby has reached more than
740,000 women via free text messaging to their cell phones with evidence-
inform ed, critical health and safety information about pregnancy and a baby’s first
year of life. Text4baby aims to reduce barriers to accessing information and

68 Payor requirements seem the most obviously available basis for “requiring” this, and to cover the entire OB population, health
plans beyond Medicaid would need to be aboard.
resources, increase knowledge around key health topics, and improve positive health behaviors.

Individuals voluntarily sign up to receive the messages three times a week, based on the mother’s due date or the birthdate of the child under age one. As part of the registration process, users provide their zip codes. This allows Text4baby to deliver urgent messages on an ad hoc basis. To date, such messages have been sent advising of consumer product recalls, disease outbreaks, and major changes in guidelines for care. Text messages about the avoidance of carbon monoxide and safe food storage were also sent after the winter storms of 2011 and Superstorm Sandy in 2012. Text4baby also has the capacity to collect data from subscribers via text message surveys, such as influenza vaccination status. In addition, Text4baby is reaching women in high-poverty areas. A higher percentage of Text4baby participants live (or lived at the time of enrollment) in zip codes with the highest levels of poverty compared to the overall U.S. distribution.

During and after disasters, communication channels are often delayed and disrupted. To promote the safety and health of both mothers and infants, HHS could support the development and integration of text messages for the Text4baby program that inform women how they can access post-disaster resources and take appropriate action, particularly for events requiring important preparatory notices such as hurricanes. HHS could also support evaluation research on the content of post-disaster messages and their effectiveness. Finally, additional considerations should be given to make the service available in languages other than English and Spanish to ensure the messages are accessible and actionable for mothers, fathers, and other caretakers with limited English proficiency.

i. Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) Disaster Assistance

WIC is a program supported by the United States Department of Agriculture (USDA) that provides supplemental foods, health care referrals, and nutrition education for low-income pregnant, breastfeeding, and non-breastfeeding post-partum women, and to infants and children up to age five who are determined to be at nutritional risk. A disaster can disrupt a pregnant woman’s or new mother’s access to food and nutritional services, and programs such as WIC may help to meet these needs. The USDA Food and Nutrition Service Disaster Assistance Program 69 coordinates with state, local, and voluntary organizations to provide food to mass feeding and shelter sites, distribute food packages to qualified

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households in limited situations, and issue Disaster Supplemental Nutrition Assistance Program (D-SNAP) benefits. Ensuring continued access to means-tested programs that support maternal and infant nutrition is critically important.

3. **Areas for Future Consideration**

The following next steps could be considered to address some of the gaps presented above and/or as a way to improve existing, relevant programs.

a. *Facility capacity and readiness*

   i. Develop disaster preparedness plans and capabilities to attend to perinatal patients by involving experts in maternal-fetal medicine.
   
   ii. Include required equipment, personnel, and procedures for patient management in facility assessments and preparedness plans.
   
   iii. Develop schemes based on patient illness severity, as well as descriptions of how and what will be accomplished and by whom during an emergency.
   
   iv. Create checklists and perform frequent inventories of medications and supplies.
   
   v. Carry out exercises to reinforce established policies and procedures.

b. *Post-disaster surveillance*

   Leverage CDC’s PRAMS or other appropriate systems to address knowledge gaps on the effects of disasters on pregnant women and identify areas where interventions may be needed.

c. *Transport needs of obstetrical patients*

   Building upon efforts of EMS and state perinatal regionalization programs, regions, states, and health care coalitions should develop plans to address capabilities for obstetrical patient screening, transfer, and transport during disasters, especially for high-risk pregnant women.

d. *Sheltering for pregnant women*

   Public health, emergency management, and mass care planners should coordinate to develop shelter plans that can support the physical and behavioral health needs of pregnant women, as well as plans for respite child care and breastfeeding privacy measures.

e. *Access to prenatal care records*

   i. Convene an interagency, staff-level, subject-matter expert group to frame potential research studies to examine the feasibility and effectiveness of
various methods that would enable providers to access prenatal health record data during a disaster, regardless of where/from whom the patient seeks care. If research is supported, this group could then review and synthesize study results to better characterize and provide guidance on the potential benefits and challenges of various approaches (e.g., paper, electronic, or cloud technology).

ii. Outside of potential HHS efforts, providers should work to integrate prenatal care record management into existing EHR transitions and/or COOP planning to further general disaster preparedness for obstetrical practices and patients.

f. *Disaster health communication for pregnant women through mobile technology*
Leverage existing programs like Text4baby to send timely, actionable, disaster-specific information to pregnant women to promote the safety and health of both mothers and infants. Additionally, HHS could support the development and evaluation of text message content and effectiveness.

g. *Access to benefits programs*
Disaster Case Management providers and other agencies supporting disaster-affected pregnant, breastfeeding, and post-partum women should assist them in maintaining access to and eligibility for assistance programs (e.g., Temporary Assistance for Needy Families, CCDF, Head Start, child support services, Family Support/Child Welfare, and USDA/WIC and D-SNAP) in the event of relocation across state lines. Means-tested programs that support infant nutrition, such as USDA’s WIC and D-SNAP, are particularly important to maternal and child health and well-being. In addition, families that have children with special health care needs are often accessing Medicaid through model waivers, 1915 (c) waivers, or through TEFRA programs, and if they are dislocated to another state, their ability to access Medicaid is compromised since Medicaid is a state program and not transportable across state lines. In the event of such displacement, responder organizations need to have a system in place to preserve or replace access to Medicaid funding for these children and people with disabilities.

B. *Disaster Behavioral Health Considerations for Pregnant Women*

1. **Background**
Pregnant women have unique concerns and vulnerabilities that may predispose them to more serious adverse psychological consequences during emergency events. Pre-determining measures that can be put in place to meet the behavioral health needs of this population in the event of a disaster is an important element of effective response.
The behavioral health risks for pregnant women in disasters are significant and include trauma, anxiety, and post-partum depression. Pregnant women have a higher rate of undiagnosed depression than their non-pregnant counterparts and SAMHSA reports that the use of illicit substances increases in new mothers following childbirth. The 2008 earthquake in China’s Sichuan province highlighted the long-term impact on pregnant women; 18 months after the earthquake, 12.2 percent of the women who were pregnant during and immediately following the event still showed symptoms of post-traumatic stress disorder (PTSD). While major depression was more common (40.8%) than PTSD, living through an earthquake was significantly correlated with PTSD but not with depression.

More diffuse public health emergencies can also affect pregnant women differently or more adversely than the general population. During the 2009 H1N1 influenza pandemic, pregnant women were more likely to experience influenza-related complications, be hospitalized, or even die. Many pregnant women worried about their vulnerability, the safety of protective methods such as vaccines, and what treatments would be available if they became sick. The 2009 H1N1 influenza experience illustrated that a public health emergency of this type can pose more than just physical risk for pregnant women. The fear and uncertainty these women experienced are significant psychological stressors that need to be addressed through proper information framing and effective public health messaging.

During disasters, pregnant women are likely to feel heightened anxiety about not only their own safety but also that of their unborn babies. Research examining the behavioral health of pregnant women validates these concerns and also demonstrates the impact emergency events can have on fetal development and birth outcomes. During Hurricane Katrina, pregnant women who experienced multiple incidents of physical and psychological trauma displayed increased risks of LBW infants and pre-term births. In New York City, an increase in LBW infants was noted following 9/11, as well as increased risk of intrauterine growth retardation in pregnant women exposed to environmental contaminants as a result of 9/11.

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2. **Programs and Activities**

HHS and HHS-funded entities have collaborated to address the behavioral health needs of pregnant women in disasters through research and information dissemination. Examples include:

a. **Research**

In addition to co-sponsoring research on post-partum depression with NICHD, NIMH has recently supported a number of studies related to pregnant women and disaster event exposure. One study, “The Iowa Flood Study: Perinatal Effects of a Natural Disaster,” examines the bio-psycho-social mechanisms responsible for the effects of exposure to a sudden-onset disaster on maternal stress, post-partum depression, pregnancy outcomes, and infant development.\(^{76}\) Noting the importance of screening and early recognition of peripartum depression, the research team examined the validity of existing depression screening instruments for use among pregnant women and has shown that somatic symptoms (e.g. fatigue, sleep disturbance) are valid indicators of depression during pregnancy.\(^ {77}\)

It is estimated that preterm births, regardless of the cause, constitute 12 to 13 percent of all live births.\(^ {78}\) Based on the need to evaluate and address increased rates of preterm births, which have risen nearly 31 percent in the last 27 years, NIMH is currently supporting a study on the “Prevention of Postpartum Traumatic Stress in Mothers with Preterm Infants.”\(^ {79}\) The birth of a premature infant can cause parental stress reactions, such as depression and anxiety, which can impact parenting practices and cognitive, emotional, and behavioral development in infants. It is estimated that approximately 20 to 40 percent of NICU parents develop significant Acute PTSD, PTSD, and/or major depressive symptoms disorders after their infant’s birth. This study will adapt an existing intervention to treat acute stress disorder, prevent the development of PTSD in women with preterm infants, assist and educate the mothers with promoting sensitivity to their infants, and conduct a five-month longitudinal intervention to determine the impact of the new treatment on maternal and infant outcomes.

In addition, the National Institute of Environmental Health Sciences (NIEHS) is funding a study to evaluate the associations between exposure to Superstorm Sandy and adverse pregnancy outcomes in an ongoing study of mother-father-newborn trios.\(^ {80}\) This study improves on previous studies of natural and manmade disasters

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\(^{76}\) [http://goo.gl/iWIf2](http://goo.gl/iWIf2)


\(^{79}\) [http://goo.gl/pEicI](http://goo.gl/pEicI)

because it will be able to parse exposure to specific trimesters and to the three months prior to conception. The study will use place controls (i.e., a cohort recruited in an unaffected area using the same measures) and has baseline information on maternal perceived stress, depression, anxiety, social support, and resilience. Results from the study have the potential to inform emergency responders and clinicians on how best to support pregnant women and potentially mitigate the effects of psychological stress during and after a major disaster.

b. Information Dissemination
The CDC and HHS Office of Women’s Health have developed fact sheets offering information on preparing for emergency birth, developing a disaster plan and collecting important documents, evacuation strategies, and tips for residing in a shelter.81, 82

SAMHSA’s NCTSN developed a specialized paper on immigrant pregnant women and the results of their exposure to trauma. The paper indicates that mothers who have been traumatized have increased difficulty in bonding with their babies. Recommendations include employing trauma-informed care and mirroring feelings of reassurance, safety, and belonging as ways to help with the attachment process and increase the mother’s sense of self-efficacy in caring for the child.83

3. Areas for Future Consideration
The following next steps could be considered to address gaps and obstacles in meeting the disaster behavioral health needs of pregnant women.

a. Expertise on advisory bodies
Encourage the NBSB to access obstetrical/neonatal experts so that the disaster behavioral health and physical health needs of pregnant women may be better represented in the board’s policy recommendations. Other HHS advisory committees could also consider increasing the expertise available to address the needs of underserved populations.

b. Research and measures
HHS should support additional research to study the physical and behavioral health impacts of disasters on pregnant women and their babies. In addition, HHS agencies should incorporate measures on this and other at-risk populations into strategic planning and policy documents (e.g., science preparedness initiatives).

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c. **Information for providers and consumers**

Increase the development of targeted, practical information for pregnant women; feeling informed and equipped with actionable steps to take in the event of an emergency can reduce anxiety. Specifically:

i. Ensure providers have the knowledge and information resources\(^{84}\) (promoted through continuing medical education) to effectively counsel patients on emergency preparedness as a piece of routine prenatal care.

ii. Integrate behavioral health and preparedness sections into personal health checklists (see the “Pregnancy Passport” in Appendix D as an example) and wellness/pregnancy program Smartphone applications.

iii. Building upon the recommendations in the first section of this chapter, add behavioral health messages within the category of disaster preparedness/health to the Text4baby program.

- In addition, Text4baby and SAMHSA’s DDH could collaborate to cross-promote the programs and leverage each other’s content, expertise, and networks.

iv. Encourage Maternal and Child Health Bureau (MCHB) programs to incorporate disaster preparedness education into existing programming such as home visits to pregnant women and newborns.

v. Increase education, training, and communication activities aimed at deaf and hard of hearing individuals who are also pregnant. These efforts should include information on home preparations and dosing.

d. **Education and training for first responders**

Increase efforts to educate first responders on the unique behavioral health considerations of pregnant women in disasters. Just-in-time training (through a tip sheet or Smartphone/tablet application) could be distributed to first responders and clinicians, particularly those not regularly engaged in the delivery of OB care.

e. **Enhancements to existing programs**

Increase specific attention on disaster behavioral health for pregnant women and other at-risk populations within existing departmental programs. For example, the FEMA-SAMHSA Crisis Counseling Assistance and Training Program (CCP) application guidance encourages needs assessment to identify at-risk populations affected by the disaster situation. The CCP guidance currently mentions high-risk groups such as children, adolescents, older adults, ethnic and cultural groups, and lower income populations. In the future, CCP guidance and/or technical

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\(^{84}\) [http://emergency.cdc.gov/disasters/pregnant.asp](http://emergency.cdc.gov/disasters/pregnant.asp)
assistance could identify pregnant women as a specific population that program activities could be sure to target.

h. Research and evaluation
HHS should support research to study the physical and behavioral health impacts of disasters on pregnant women and their babies. In addition, HHS agencies should incorporate measures on this and other at-risk populations and geographically isolated areas into strategic planning and policy documents (e.g., science preparedness initiatives and the National Health Security Strategy). Additionally, evaluation studies could incorporate how to best use this medium to connect with "information hubs" that have the capacity to get information out broadly and quickly in the event of cell phone/internet disruption.

C. Breastfeeding in Disasters

1. Background
Infant nutrition is especially important in an emergency setting. Not only is breastfeeding beneficial in nourishing infants and preventing illnesses, it is also good for the mother because breastfeeding releases hormones that lower stress and anxiety in both babies and mothers. For infants, being breastfed is associated with many health benefits including reduced gastrointestinal issues, diabetes, and sudden infant death syndrome. For mothers, a failure to breastfeed increases the chances of adverse health effects including type 2 diabetes and metabolic syndrome, as well as preventing the release of hormones which reduces her vulnerability to stress. Promotion of breastfeeding due to its health, psychosocial, economic, and environmental benefits is an established priority for HHS, as the 2011 Surgeon General’s Call to Action to Support Breastfeeding makes clear. The CHILD Working Group strongly recommends the incorporation of messaging and planning for emergency response to promote the continuation of breastfeeding during and following disasters and public health emergencies. Public messaging should encourage breastfeeding women to continue with their pre-disaster infant nutrition plan, and plans for mass care and public health/medical response should support breastfeeding and address disaster-caused barriers to women’s nursing.

2. Programs and Activities
HHS and HHS-funded entities have collaborated to support continued breastfeeding during disasters through information dissemination and promotion, as well as research that could support better access to health resources in an emergency. Examples include:

a. *Information dissemination and promotion*

In 2013, ACF/OHSEPR developed an infographic (reproduced in Appendix E) on infant feeding in disasters. This infographic was promoted at the annual USPHS Scientific and Training Symposium and summarizes key points including why continued breastfeeding is important and beneficial, common barriers to nursing, and how responders can assist and support women to continue breastfeeding. Also in 2013, ASPR published two pieces through the ASPR Blog on infant nutrition in disasters and steps that parents and caregivers can take to include disaster preparedness as they get ready for the arrival of a new baby.  

Text4baby, mentioned in previous sections of this chapter, provides pregnant women with tips and resources during their pregnancy. The information addresses important milestones that the mother experiences while pregnant and through the child’s first year of life, and information on breastfeeding was added to the website and text messaging program in 2013. This application could be greatly beneficial in the future for emergency preparedness and response efforts specific to breastfeeding mothers. It could be used to encourage women to plan and prepare their family for emergencies, and to send location-specific warning messages and response/recovery tips following an event.

b. *Research*

NICHD is funding research to assist public health experts and community members to jointly identify elements that create barriers to using emergency health resource maps. This project combines a community-based participatory approach with an ecological model of health literacy and human factors engineering methods. The study will also help determine what elements would make these maps and their related information more readable and useable. Additionally, a collaborative mapping process is being studied to assist public health officials in choosing locations for such services.

3. **Areas for Future Consideration: Information and Training on the Promotion and Support of Breastfeeding in Disasters**

The following next steps are directed at planners, first responders, shelter managers, and others who could support women and families in disasters and promote the continuation of breastfeeding. Key points of consideration include:

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90 [https://text4baby.org/index.php/miscellaneous/357-breastfeeding](https://text4baby.org/index.php/miscellaneous/357-breastfeeding)
a. Preparedness
   i. Preparedness plans should be designed to keep families together to the maximum extent possible and prevent the separation of mothers and infants during evacuation, transport, and/or sheltering.
   ii. For families that have become separated during a disaster, preparedness and response plans should include specific provisions and strategies for reunification as soon as possible after evacuation and transport to safe locations.
   iii. Privacy for breastfeeding women is important in an emergency, particularly in a shelter setting. Negative reactions toward breastfeeding, including violence in the most extreme cases, can occur and cause stress or discomfort to mothers. Sheltering facilities should dedicate some private space for nursing to promote the safety and well-being of women who breastfeed and their infants. In addition, sheltering facilities should ensure the availability of additional water and food supplies for breastfeeding women.
   iv. Planners should consider making provisions to make available a resource person, such as a lactation consultant, to provide on-call support if needed in case a delivery occurs in a disaster setting.

b. Communication
   i. Breastfeeding provides great health benefits for infants by limiting the risk of disease from direct ingestion of contaminated water (used to make formula). Knowledge of this benefit may decrease the possibility that a mother’s breastfeeding efforts will be interrupted due to a disaster, so messaging and other outreach to affected families should include and emphasize this information.
   ii. Responders and emergency staff should be supportive and provide encouragement for breastfeeding mothers since breastfeeding helps decrease a mother’s and child’s stress and ensures the child receives the best nutrition while in a potentially unfavorable and unhealthy environment.
   iii. Routine lactation counseling and education should include pumped breast milk storage guidance for mothers to consider prior to a disaster and for every day stockpile use. Such guidance is available from professional and lactation advocacy organizations and could be made available to clinicians, health educators, and directly to breastfeeding women.

91 http://www.cdc.gov/breastfeeding/resources/guide.htm
D. MCMs for OB and Neonatal Populations

1. Background

There is a significant deficit in the availability of data on MCMs appropriate for obstetrical and neonatal populations for the treatment of illnesses in day-to-day circumstances and even more so for extraordinary situations like disasters or emerging infectious diseases (EID). There are also challenges with the administration of MCMs to pregnant women, particularly with determining the appropriate dosage. Changes that take place in the body of a pregnant woman can make her more susceptible to adverse consequences of the threat exposure, and the effects of physiological changes can interact with the MCM she might use for treatment. In addition, clinical studies of drug transfer to the fetus are difficult for technical and ethical reasons.

PHEMCE advances national preparedness against CBRN and EID threats, including pandemic influenza, by coordinating MCM-related efforts within HHS and in cooperation with interdepartmental PHEMCE partners. Core mission components of the PHEMCE include 1) requirements setting, 2) early stage research, 3) advanced development and manufacturing, 4) regulatory science management, 5) procurement, inventory management, and stockpiling, 6) response planning, policy, guidance, and communication, 7) deployment, distribution, dispensing, and administration, and 8) monitoring, evaluation, and assessment. The fourth goal of the PHEMCE Implementation Plan is to “address medical countermeasure gaps for all sectors of the American civilian population” and specifically focuses on the needs of at-risk populations. Toward this goal, the PHEMCE’s IPTs provide an end-to-end vision of MCMs needed for particular threat categories by advising PHEMCE leadership on threat- and capability-specific MCM priorities for improving preparedness. The threat-specific IPTs, the cross-cutting PedsOB IPT, and HHS agencies represented on the PHEMCE consider the following key questions in the review of MCM coverage for pregnant women and other at-risk populations: 1) are the dosage forms appropriate?; 2) do we have the requisite PK, safety, efficacy, and lactation information to facilitate the use of the drug or product during an emergency?; and 3) are there alternative medications that are safer and/or more effective?

HHS agencies have made substantial efforts to prioritize and address the MCM needs of children and pregnant women through agency-specific activities, enhanced interagency collaboration, and the establishment of the PHEMCE’s PedsOB IPT, but gaps remain in the development of appropriate MCMs for neonates and pregnant women. Although it is

94 http://www.phe.gov/Preparedness/mcm/phemce/Pages/governance.aspx
95 http://www.phe.gov/Preparedness/mcm/phemce/Pages/mission.aspx
possible to perform studies in healthy adults to obtain the necessary PK and safety data for disaster-specific MCMs, it is more challenging, or it may be unethical, to conduct such studies in pregnant women or neonates. Furthermore, it is generally unethical or infeasible to conduct efficacy studies for MCMs against CBRN threat agents.

To provide context for the subsequent discussion, the bulleted section below summarizes some of the existing obstacles for the enhancement of MCM programs and policies for neonates and pregnant women. Recruiting sufficient numbers of neonates and pregnant women for traditional phase 3 trials to demonstrate effectiveness for a drug or treatment is very difficult without the potential of direct benefit to the individual.97,98

- In most instances, R&D are completed initially in healthy adults but R&D in special populations are often never funded.99
- The difficulties associated with studies in children are accentuated in special pediatric populations such as premature infants and children with special health care needs.
- Challenges remain in identifying MCM dosage forms that are appropriate for neonates, have a long shelf life, and can be procured for reasonable costs.
- There is a shortage of researchers who can perform pediatric and obstetrical biodefense-related MCM studies. Additional obstetrical, fetal, and neonatal expertise at the programmatic and leadership levels—inclusive of governmental and non-governmental experts, when appropriate—is needed to ensure that the MCM needs of neonates and pregnant women are adequately met at all phases of the PHEMCE process.

2. Programs and Activities
The federal government has undertaken initiatives to facilitate the development of MCMs that address the needs of neonates, children, and pregnant women.

a. Advisory Groups and Agency Expertise
i. The NBSB, which is housed in ASPR, was established to provide expert advice and guidance to the Secretary on scientific, technical, and other matters of special interest to HHS regarding activities to prevent, prepare for, and respond to adverse health effects of public health emergencies resulting from CBRN events, whether naturally occurring, accidental, or deliberate. The NBSB has reviewed pediatric-specific

99 http://www.fda.gov/Drugs/ResourcesForYou/Consumers/ucm143565.htm
issues in the development and use of MCMs, but future consideration should be given to MCM gaps in maternal/fetal populations.

ii. The CDC Anthrax Management Team (AMT) was established to better coordinate and integrate preparedness and response activities for anthrax related issues. The AMT has a Pregnant and Postpartum Women Team that focuses on how approaches to prophylaxis and treatment for anthrax may require modification due to the unique needs of pregnant women.

iii. Data from seasonal and pandemic influenza show that pregnant women are at increased risk for influenza-associated complications. The importance of collaborations among experts in influenza, vaccine safety, vaccine coverage, and reproductive and infant health has increased in recent years. CDC created the Influenza and Pregnancy Collaborative Workgroup in support of its various activities related to influenza prevention and treatment among pregnant women. The Workgroup meets quarterly to promote coordination at CDC regarding issues related to influenza and pregnancy.

iv. CDC has increased its internal obstetrical subject matter expertise (SME) related to MCMs and strengthened interagency collaborations between the National Center for Emerging and Zoonotic Infectious Diseases and DRH in the National Center for Chronic Disease Prevention and Health Promotion.

v. The FDA Pediatric Advisory Committee (PAC) was established to advise the Commissioner of the FDA on 1) pediatric research conducted under certain FDA authorities; 2) identification of research priorities related to pediatric therapeutics and the need for additional treatments of specific pediatric diseases or conditions; 3) the ethics, design, and analysis of clinical trials related to pediatric therapeutics; 4) pediatric labeling disputes and pediatric labeling changes specified in the BPCA; and 5) adverse event reports and other safety issues for drugs granted pediatric exclusivity. The PAC also established a neonatal subcommittee to attend to the FDASIA requirement to address the absence of neonatal labeling for many products. Additionally, PAHPRA Section 307(c) amended BPCA to include within the PAC’s authorities the development of MCMs for pediatric populations.

vi. In addition to the Pediatric and Maternal Health Staff in the Center for Drug Evaluation and Research and the Office of Pediatric Therapeutics in

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the Office of Commissioner, both dedicated to the development and informed use of medical products in children and women of childbearing potential, FDA has expanded the numbers of pediatric and maternal health specialists within relevant review divisions.

vii. FDA established the Pediatric and Maternal Public Health Security Action Team, a multidisciplinary group of representatives from the Office of the Commissioner and relevant Centers. The primary goals of the Action Team are to advance priority MCMs by working with internal and external entities, as appropriate, to identify and catalyze the resolution of regulatory challenges to the development of MCMs for pediatric and OB/maternal populations, and coordinate with the PedsOB IPT and other stakeholders. In addition, the Action Team is engaging the Pediatric Trials Network regarding the potential to leverage the network for data regarding the safety and efficacy of specific drugs used in the pediatric population as potential MCMs.

b. **ASPR/BARDA**
   i. For procurement contracts, BARDA now requires that the contract include considerations for special populations (particularly children and infants).
   ii. For other contracts, BARDA leadership has asked the Division of Clinical Studies to consider studying special populations such as children or pregnant women on existing contracts and in the review of all new programs under consideration for funding.
   iii. BARDA has a contract with the Vaccines and Medications in Pregnancy Surveillance System to examine vaccine safety surveillance, active and passive, for pregnant women and their babies.  
   iv. The BARDA Division of Clinical Studies has been charged with developing a Clinical Studies Network to conduct clinical research studies that pharmaceutical companies or other HHS agencies cannot or choose not to perform. It is anticipated that these studies will include children and other special populations.

c. **CDC**
   i. CDC conducted a systematic review of antibiotic safety and PK in pregnant and lactating women for antimicrobials recommended for anthrax prophylaxis and treatment.
   ii. CDC worked with the FDA to update the amoxicillin dosing recommendations for all populations, including children, in the CDC-

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sponsored amoxicillin Pre-EUA for anthrax. This was triggered by data that showed differences in the amoxicillin PK profile in pregnant women compared to women three months post-partum.

iii. CDC conducted a systematic review of uterotonic medications for the prevention of post-partum hemorrhage. CDC presented the review to the PedsOB IPT in October 2012 in consideration of the possible shift to a lay delivery model during a large-scale, resource-poor emergency.

iv. CDC is conducting a systematic review of oral antimicrobials for the treatment of post-partum endometritis as preparation for a possible need to shift to a lay delivery model in a large-scale emergency.

d. FDA

i. In February 2012, FDA held a Public Workshop on Ethical and Regulatory Challenges in the Development of Pediatric Medical Countermeasures. This workshop garnered stakeholder input from a variety of experts to address the challenges, both scientific and ethical, in developing MCMs for pediatric populations, including neonates. Suggested action items that emerged from this workshop also apply to MCM development for pregnant women and included:
   - Leveraging novel/emerging technologies to advance systems biology and mechanistic knowledge with the goal of predicting outcomes related to disease progression and remission.
   - Educating and encouraging clinician-researchers to identify, collect, analyze, and publish “opportunistic” data from accidental or unintentional exposures to CBRN threat agents when MCMs were used.

ii. In December 2012, the FDA expanded and approved the use of Tamiflu (oseltamivir) to treat children two weeks to a year, who have shown symptoms of influenza for no longer than two days.106

iii. In December 2012, the FDA approved the first anthrax antitoxin (raxibacumab) developed under Project BioShield funding. This approval, granted under the FDA’s Animal Rule, was for both pediatric and adult populations (including pregnant women), and is meant to treat inhalational anthrax due to Bacillus anthracis in combination with appropriate antibacterial drugs, and to prevent illness when alternative treatments are not available or appropriate.107, 108

105 Additional information on FDA’s medical countermeasure accomplishments can be found in the FDA’s Medical Countermeasures Initiative Updates available at http://www.fda.gov/EmergencyPreparedness/Counterterrorism/MedicalCountermeasures/AboutMCMi/ucm270744.htm.
106 http://dailymed.nlm.nih.gov/dailymed/lookup.cfm?setid=ee3c9555-60f2-482-a760-11983c86e97b
107 http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm332341.htm
iv. In March 2013, the FDA licensed an antitoxin to treat the seven known serotypes of botulism (Botulism Antitoxin Heptavalent [A, B, C, D, E, F, G] – [Equine]) developed under Project BioShield funding. This approval, also granted under the FDA’s Animal Rule, was for persons of all ages and specifically includes dosing information for children.

v. In September 2013, the Pediatric Ethics Subcommittee of the PAC met to discuss ethical issues in pediatric product development, with a focus on MCMs. FDA has also worked with CDC to clarify the crushing and mixing instructions for doxycycline hyclate tablets.

e. NIH

The primary biodefense-related activities at NIH focus on chemical threats (via the CounterACT program at the National Institute for Neurological Disorders and Stroke [NINDS]), infectious disease (via the National Institute of Allergy and Infectious Diseases [NIAID]), and pregnant women and children (via NICHD).

i. CounterACT

- The CounterACT program, developed by NIAID and NINDS as a part of the NIH Biodefense Strategic Plan and Research Agenda, engages other NIH Institutes and Centers with expertise in relevant health areas, and also involves Interagency Agreements with the U.S. Army Medical Research and Materiel Command. The NIH report titled, The NIH Medical Research Program Directed Against Chemical Threats: 2011 Report on Research Progress and Future Directions, specifically mentions needs and special concerns for pregnant women, infants, and children in whom growth and development may be more affected by hazardous chemicals, including chronic exposure to such chemicals.

- A recently completed safety and efficacy study obtained adult and pediatric data on midazolam for the treatment of status epileptics. FDA will need to review the data and take a regulatory action before midazolam’s label can be revised to add indications. While this study did not include pregnant or neonatal study subjects, the generated data are intended to be utilized for extrapolation purposes.

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108 [http://www.accessdata.fda.gov/drugsatfda_docs/nda/2012/125349Orig1s0001Lbl.pdf](http://www.accessdata.fda.gov/drugsatfda_docs/nda/2012/125349Orig1s0001Lbl.pdf)
110 National Institute of Allergy and Infectious Diseases (NIAID) at NIH Online. Accessed 12/27/12. [http://www.niaid.nih.gov/topics/Pages/default.aspx](http://www.niaid.nih.gov/topics/Pages/default.aspx)
111 Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) at NIH Online. Accessed 12/27/12. [http://www.nichd.nih.gov/about/Pages/index.aspx](http://www.nichd.nih.gov/about/Pages/index.aspx)
• CounterACT has two active funding opportunity announcements for applications for exploratory/developmental translational research on therapeutics for reducing mortality and morbidity caused by acute exposures to chemical threat agents. The needs of pregnant women and children are a major focus of these programs.

ii. NIAID
• NIAID launched a series of clinical trials in August 2009 to evaluate the safety and effectiveness of vaccines developed in response to the 2009-2010 H1N1 influenza pandemic. The trials were designed to show how many doses and what size dose(s) would be needed per person, including healthy adults, older adults, children, pregnant woman, people with asthma, and people with HIV. Trials also investigated whether the H1N1 vaccine would be tolerated in the presence of the seasonal influenza vaccine and whether adjuvants increased the efficacy of the H1N1 vaccine.
• Modified Vaccinia Ankara (MVA) is being studied to determine if the immune response induced by MVA is similar to that induced by the licensed smallpox vaccine (ACAM2000). It is also being studied in individuals with HIV and atopic dermatitis to assess its safety profile in these populations. There are limited clinical data on the use of MVA in children and pregnant women. The new NIH contracts will allow the companies to continue the work they began under contracts awarded in February 2003. Relevant NIAID initiatives include 1) Vaccine and Treatment Evaluation Units (RFP-NIAID-DMID-NIHAI2012144, awarded September 2013); 2) Strategies for the Protection of Pregnant Women and Infants Against Infectious Diseases (R01) (RFA AI-11-036, opened September 2011); and 3) The Infant Immune System: Implications for Vaccines and Response to Infections (R01) (RFA-AI-11-010, opened May 2011).

iii. NICHD
• NICHD has supported research on 1) PK in pregnancy of oseltamivir, the primary antiviral utilized for the treatment of pandemic influenza; 2) synthesizing existing data on PK, efficacy, and safety of midazolam to support pediatric labeling changes for

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112 http://www.ninds.nih.gov/research/counterterrorism/FundingOpportunities.htm
113 NIAID at NIH Online. Accessed 12/27/12.
http://www.niaid.nih.gov/topics/Flu/H1N1/ClinicalStudies/Pages/2009clinicalTrials.aspx
children, to include the treatment of status epilepticus and nerve agent induced seizures; 3) neonatal antimicrobial studies, including PK studies, of metronidazole, clindamycin, meropenem, and rifampin, which may be utilized to treat anthrax (although none are approved for this indication) or, along with acyclovir, infections that may complicate acute radiation syndrome; and 4) opportunistic studies in children under eight years of age to obtain doxycycline PK data, which may provide better dosing information for children exposed to certain bacterial threat agents.

- In February 2013, NICHD released a funding opportunity announcement for applications from organizations that propose creative and innovative institutional research training programs to help ensure that a diverse pool of highly trained scientists is available to address the nation’s biomedical, behavioral, and clinical research needs. The goals of this training program are 1) to encourage and support training in pediatric and/or OB pharmacoepidemiology, and 2) to produce a well-qualified cadre of academic investigators who are capable of conducting pharmacoepidemiologic research in children and/or pregnant women. 114

- In August 2013, NICHD released a funding opportunity announcement to encourage applications for translational and clinical research that will advance knowledge about the underlying mechanisms of drug action, response, and safety in children at various developmental stages, and in pregnant women and the developing fetus. The overall goals are to improve the safety and effectiveness of current drugs for pediatric or OB patients, and to enhance the development of new drugs or a safer usage of the existing drugs for tailored therapies to meet emerging clinical needs for these special populations. 115

f. **Stakeholder Engagement**

The continuous federal engagement of the pediatric and obstetrical MCM stakeholder communities is crucial in minimizing the morbidity and mortality secondary to natural disasters or human-caused emergency events. Stakeholders and partners were engaged through the following events:

i. The NBSB’s Anthrax Vaccine Working Group held a public engagement workshop in July 2011 to discuss vaccine to protect children from

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The forum included discussion of the types of data and studies that may be needed to show whether existing FDA-approved vaccines could also be used for children. The NBSB published its report on this topic in October 2011.\textsuperscript{117}

ii. CDC held “Pandemic Influenza: Special Considerations for Pregnant Women and Neonates” in 2008 where research gaps were identified.

iii. CDC held “Pandemic Influenza Revisited: Special Considerations for Pregnant Women and Newborns” in August 2010.

iv. CDC held “Anthrax: Special Considerations for Pregnant and Post-partum Women,” a SME meeting involving participants from other federal agencies, academia, and multiple professional organizations in August 2012; research gaps were identified and prioritized.

v. CDC held “Anthrax Disaster Preparedness and Planning: Pediatric Clinical Guidance,” a meeting convened in conjunction with the AAP annual conference in November 2012.

vi. FDA held the “Public Workshop on Ethical and Regulatory Challenges in the Development of Pediatric Medical Countermeasures” in February 2012 (described earlier in this section and in greater detail in Chapter II).

vii. The IOM Committee on the Future of Emergency Care in the United States Health System (2003) identified a need to enhance the research base for emergency care. As a result, the NIH Task Force on Research in Emergency Medicine was formed to enhance NIH support for emergency care research. Members of the Task Force and academic leaders in emergency care participated in three roundtable discussions to prioritize current opportunities for enhancing and conducting emergency care research (including the needs of pregnant women and neonates).

viii. Under the BPCA, NICHD supports working groups that identify and make recommendations regarding drugs that need further study for labeling purposes for neonates; the last BPCA annual meeting, which is open to the public and presents these priorities, was held in December 2012.

ix. The Presidential Commission for the Study of Bioethical Issues invited stakeholder observation and participation in its review of pediatric MCM research prior to the publication of its report in March 2013.\textsuperscript{118}

3. **Areas for Future Consideration**
   a. Increase the number of SMEs on children (especially fetal and neonatal medicine) and pregnant, post-partum, and lactating women at all levels of the MCMs enterprise by:

116 http://www.phe.gov/Preparedness/legal/boards/nprsb/Pages/110707meeting.aspx


118 http://bioethics.gov/node/833
i. Increasing obstetrical/fetal/neonatal SME membership on the PHEMCE IPTs to ensure availability of knowledge regarding the MCM development considerations of newborns and pregnant women.

b. Ensure that neonatal and obstetrical-specific vulnerabilities are incorporated in the scenario and medical consequence modeling used to inform product requirements. Currently, the SNS does not include medications that are relatively accessible through the commercial supply chain.

c. Determine pathways that will allow the use of MCMs in obstetrical and pediatric populations during an emergency by:
   i. Reviewing prioritized threat agents from obstetrical and neonatal perspectives to identify any gaps in coverage.
   ii. Obtaining obstetrical and neonatal PK data to facilitate appropriate dosing of products.
   iii. Clarifying how the new authorities granted by the PAHPRA of 2013, particularly Section 307, may impact the implementation of using drugs and other products during emergencies.
   iv. Determining, on a product-specific basis, what evidence is required for approval, labeling change, or an emergency access mechanism.
   v. Supporting clinicians by providing guidance on the dosing and use of MCMs with which they may be unfamiliar due to limited or no use of such products in regular clinical practice.

d. Continue and improve support for industry/academia to develop MCMs suitable for children and pregnant women.
   i. Encourage industry to work collaboratively on projects such as platform development for multi-use formulations for neonates and children.
   ii. Support initiatives to sponsor pharmacological/device studies that result in new labeling of products for pregnant women.
   iii. Explore mechanisms through which adult data, such as safety and dosing, can be extrapolated to children and pregnant women.
   iv. Increase utilization of opportunistic studies, particularly for PK and safety data, and support procedures that allow gathering clinical data intra-event.
   v. Assess the usefulness, validity, and predictability of juvenile and pregnant animal models.
   vi. Increase development and use of virtual, in vitro, and organic modeling capabilities in pregnant/post-partum and lactating women, as well as for neonates.
e. Provide support for the training of obstetrical and neonatal research scientists capable of doing basic and advanced pharmacological R&D.

f. Continue to engage the pediatric and obstetrical MCM stakeholder community (e.g., practitioners, non-governmental/professional organizations, industry, and parents/caregivers) on a regular and meaningful basis.
IV. Children at Heightened Risk

A. Background
Children in general constitute an at-risk population in disasters and public health emergencies, are specifically mentioned in the definition of the term “at-risk individual” in the Public Health Service Act as amended by PAHPA, and have been a long-standing focus of HHS emergency planning activities. However, some children may be at heightened risk relative to their same-age peers due to access or functional needs such as pre-event medical status, economic disadvantage, limited English proficiency, residence in institutional settings, homelessness, or other social, cultural and demographic characteristics. In many cases, local or regional planning for emergencies may not have fully contemplated or prepared for the particular needs of children with some pre-event heightened risk factors, and these children may be underserved in disasters and public health emergencies. Consistent with departmental policy and legislative mandates, HHS agencies are engaged in work to prepare for and meet the needs of all children, recognizing the wide diversity of the nation’s children and the importance of planning that encompasses the range of risk factors that influence outcomes for children and youth in emergencies.

B. Programs and Activities
1. Low-Income Children and Families
   a. ACF coordinates across programs, including Head Start, child care, Unaccompanied Alien Children, child welfare, child support enforcement, and Runaway and Homeless Youth, to ensure continuity of services for children following a disaster. This includes working with impacted states to assess program impacts and developing strategies to rapidly reconstitute services.

   b. ACF worked with states, regions, localities, and NGOs to implement Children and Youth Task Forces following several disasters including the 2011 Joplin tornado disaster, and Hurricane Isaac and Superstorm Sandy in 2012. These task forces have focused on supporting vulnerable children, youth, and families after a disaster by restoring critical services including Child Care, Head Start, Behavioral Health, Financial Assistance, and Housing. The task forces activated in 2012 are discussed in more depth in Chapter V.

   c. ACF coordinates with the FEMA and states impacted by a disaster to implement Immediate Disaster Case Management (IDCM) services when ACF’s IDCM program is activated by the Federal Coordinating Officer. The IDCM Program is a time-limited process that involves a partnership between a case manager and a disaster survivor to develop and carry out a disaster recovery plan. This partnership provides the client with a single point of contact to facilitate access to a broad range of resources, including assisting families with children at heightened risk and low-income families with children. Since the 2011 CHILD
Working Group report, IDCM missions took place in New York in response to Hurricane Irene and in New Jersey in response to Superstorm Sandy. In 2012, ACF developed an evidence-based IDCM Assessment Tool now used in joint FEMA-ACF IDCM Assessments in disasters with Individual Assistance approved. The assessment incorporates objective analysis of impacts to children and social services systems serving children in its calculation of community needs, vulnerabilities, and capabilities.

d. In a second, informal pilot project in ACF Region V, preparedness messaging designed for low-income families with children was delivered through the Responsible Fatherhood program. A connection was established between Responsible Fatherhood and household preparedness efforts to create more resilient households with children.

e. ACF, in partnership with ASPR, CDC, and SAMHSA, developed social media messages focused on preparedness strategies for low-income families, including messaging designed for single-parent households.119,120

2. Children with Disabilities and/or Special Health Care Needs

a. CDC is working to promote influenza preparedness for children with neurologic and neurodevelopmental disabilities.

i. In September 2012, Blanton et al. published a paper in *Pediatrics* entitled, “Neurologic Disorders Among Pediatric Deaths Associated with the 2009 Pandemic Influenza.” This paper highlighted key messages including encouraging influenza vaccination and early empiric treatment with antiviral medication.

ii. These messages were further promoted through work with partners including the AAP, Family Voices, Families Fighting Flu, and federal agencies including HRSA/MCHB and Administration for Community Living/Administration on Intellectual and Developmental Disabilities in a Twitter Chat, a Clinician Outreach Coordination Activity (COCA) call held in September 2012 on “Influenza Prevention and Control for Children and Youth with Special Health Care Needs,”121 and a letter signed by federal partners for public health professionals discussing the risk for children with disabilities and promoting vaccination and early treatment.

iii. In September 2013, another COCA call was held on “Protecting Children at Highest Risk for Influenza Complications.”122 SMEs from CDC and

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121 http://emergency.cdc.gov/coca/calls/2012/callinfo_092712.asp
122 http://emergency.cdc.gov/coca/calls/2013/callinfo_092413.asp
AAP presented strategies that primary care providers and medical subspecialists can use in partnership with parents to improve influenza prevention and control in children at highest risk.

iv. CDC conducted two surveys, one of pediatricians and one of parents of children with special health care needs (CSHCN), on knowledge, attitudes, and beliefs about influenza and influenza treatment. In addition, focus groups were conducted with parents of CSHCN. The results of these studies were published in *Morbidity and Mortality Weekly Report* (MMWR) in September 2013 in an article titled, “Influenza Vaccination Practices of Physicians and Caregivers of Children with Neurologic and Neurodevelopmental Conditions — United States, 2011–12 Influenza Season.” Among 1,005 children with neurologic or neurodevelopmental conditions, parents reported that 50 percent of children were vaccinated or had a vaccine appointment scheduled. Vaccination rates were low for children with intellectual disability (52%) and epilepsy (59%), and physician recognition of high-risk conditions was low for intellectual disability (46%) and epilepsy (52%). This study is an example of CDC’s collaboration with Family Voices to enhance influenza vaccination in CSHCN. From 2013-2014, CDC has also funded the National Association of County and City Health Officials (NACCHO) to promote influenza vaccination in pregnant women, children with special health care needs, and adults with disabilities through local health departments.

b. CDC and ASPR engaged child disability experts from the Association of University Centers on Disabilities (AUCD) in December 2012 through a guided discussion on the needs of children with disabilities in the context of an improvised nuclear device disaster scenario. In November 2013, CDC presented a second discussion-based exercise, this one focused on a flooding scenario, at the AUCD annual conference. Dialogue with experts will continue to further elicit gaps and places for collaboration to ensure the safety of children with disabilities.

c. Through a Cooperative Agreement with CDC’s NCBDDD, AUCD is testing a new messaging campaign translating recent research into public health practice for populations with special health care needs. This first pilot campaign message, launched in November 2013, informs parents and care providers of children with

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123 HRSA/MCHB’s *National Survey of Children with Special Health Care Needs Chartbook 2001* defines CSHCN as, “…those who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally.”

http://mchb.hrsa.gov/chscn/pages/intro.htm

special health care needs of the importance of influenza vaccination using a mobile phone-based video that will be sent directly to users’ phones upon enrollment. A follow-up text message will be sent with a link to a short, five-minute survey asking for subscribers’ feedback on the video content and method.

d. In observance of National Preparedness Month in September 2013, CDC’s NCBDDD and OPHPR, AAP, and Family Voices partnered to recognize the unique experiences of families and health providers during emergency situations. This partnership resulted in a collection of ten family stories that highlights emergency preparedness for children and youth with special health care needs.\textsuperscript{125}

e. NICHD is funding research examining a model of disaster preparedness for families with special needs through the utilization of a university campus-community partnership. This research specifically targets family concerns and levels of basic preparedness. Strengthening individual and family preparedness is essential to prioritizing and targeting adequate community response in disasters. Thus, examination of family concerns about emergencies and levels of basic preparedness provides an opportunity to address both knowledge about emergency preparedness and connectivity with actionable practices.

3. **Children with Cultural or Linguistic Health Disparities**

a. Children from ethnic, linguistic, and cultural minority groups may be underserved in planning and risk communication efforts related to disasters and public health emergencies. HHS agencies continue to refine strategies to promote preparedness and resilience for children in ethnically and linguistically diverse communities. ACF conducted an informal pilot project on community resilience in partnership with FEMA, CDC, and ethnic community centers in Chicago to reach parents with messages about preparedness for households with children.

b. HRSA/EMSC piloted six SPROC demonstration projects in Alaska, Arizona, California, Montana, New Mexico, and Pennsylvania to develop regionalized systems of care that improve access to pediatric emergency care services for children and families in rural, insular, and American Indian/Alaska Native communities, and to support the development of “models of inclusive care” that may be replicated for disaster preparedness.

\textsuperscript{125} http://emergency.cdc.gov/children/real-stories/index.asp
C. **Areas for Future Consideration**

1. **Children with Disabilities and/or Special Health Care Needs**
   a. Expand and promote preparedness initiatives in support of children with chronic medical conditions and/or disabilities.

b. Invite child disability experts to participate in listening sessions and other stakeholder input opportunities on disaster preparedness supported by ASPR, CDC, and other partners.

c. Highlight the needs of children with chronic medical conditions, and steps their families and caregivers can take to be better prepared, through existing media outlets such as the CDC’s *Caring for Children in a Disaster* webpage,\(^\text{126}\) social media presence, traditional print media, and other communication vehicles, as well as through coordination with NGOs such as AAP, Family Voices, and Save the Children. Additional collaborations can also be made with non-health entities such as the state’s National Guard, utility, transportation, telecom providers, and home improvement retailers.

d. Enhance pre-disaster and just-in-time training for health care providers to increase knowledge about the specific needs of children with certain chronic medical needs and/or disabilities through additional COCA calls and professional organizations’ continuing medical education programs.

e. Enhance pre-disaster and just-in-time training for health care and other providers to increase knowledge about the specific needs of children with functional support needs, including accommodating shelter space for physical accessibility and sensory-related disabilities.

f. Expand and promote preparedness initiatives in support of ethnic minority and language minority children. Examples could include training on the National Standards for Cultural and Linguistically Appropriate Services in Health and Health Care\(^\text{127}\) and cultural competency.

g. Work to facilitate mechanisms that would enable providers, patients, and caregivers to access health information during a disaster, regardless of where or from whom the patient seeks care.

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\(^{126}\) [http://emergency.cdc.gov/children](http://emergency.cdc.gov/children)

\(^{127}\) [https://www.thinkculturalhealth.hhs.gov](https://www.thinkculturalhealth.hhs.gov)
2. Low-Income Children and Families
   a. Explore opportunities to expand household preparedness messaging and assistance with obtaining preparedness supplies by leveraging potential synergies between resilience-promotion efforts and maternal and child health programs, particularly home visitation and human services programs that serve households with young children.
      i. Consider coordinating grant funding for preparedness and community resilience building with maternal and child health initiatives that focus on children at heightened risk due to medical or socioeconomic factors.

   b. As HHS and its partners continue to incorporate lessons learned from Superstorm Sandy and other events, coordinated efforts could focus on increasing the resilience of educational, social services, and health systems upon which children at heightened risk and their families depend. In particular, consideration should be given as to how federal, state, tribal, territorial, local, private sector, and NGO partners can promote the sustainability and resilience of systems including home-based child care providers, home- and community-based social services for children with access and functional needs, home health services, and accessibility and paratransit services.
V. Interdepartmental and NGO Organization Collaboration

A. Background
Supporting the health, safety, security, and well-being of children is a Whole Community undertaking that requires collaboration among an array of partners with capabilities to positively affect outcomes for children and youth. HHS continues to develop partnerships with other federal cabinet departments, states, tribes, territories, and NGOs. This initiative offers state and local human services agencies, as well as Emergency Management Agencies, opportunities to participate in discussions focusing on planning for the needs of children, to assist them in identifying gaps in current planning and often includes presentations by SMEs involved in children's needs in disasters.

The CHILD Working Group Subcommittee on Interdepartmental and NGO Collaboration held a series of meetings with HHS Operating and Staff Divisions (CDC, ACF, ASPR) and six interdepartmental and NGOs (Corporation for National and Community Service, DHS/FEMA, DHS/Office for Civil Rights and Civil Liberties, USDA, and National Voluntary Organizations Active in Disaster) to identify the following key areas:

- Interdepartmental, intergovernmental, and/or non-governmental programmatic initiatives that address the needs of children in preparedness, response, or recovery from emergencies and disasters, including through grants and cooperative agreements.
- Gaps that should be addressed through interdepartmental collaborations within the federal government and/or federal partnerships with state, tribal, territorial, and local government and NGOs.
- Research suggestions for further federal engagement.
- Cross-cutting training considerations that seek to improve capabilities of community members and federal, state, tribal, territorial, and local responders in addressing the disaster health and human services needs of children.

This chapter summarizes these key initiatives and offers next steps for additional attention in the areas of partnership, research, and training.

B. Programs and Activities
1. Collaboration Among HHS Agencies
   a. The CDC’s Public Health Emergency Preparedness (PHEP) cooperative agreement capabilities contain several references to pediatric planning, specifically that, “Written plans should include documentation that public health has participated in jurisdictional approaches to address how children’s medical and mental/behavioral health care will be addressed in all-hazard situations…”.

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128 http://www.fema.gov/whole-community
129 www.cdc.gov/phpr/capabilities/capability1.pdf
In 2011-2012, two PHEP awardees reported engagement in pediatric mass casualty planning or expansion of critical care capacity under the Community Preparedness capability. Under the Medical Surge capability, 21 awardees reported a “partially in place” status of engaging pediatric experts/providers in pediatric surge plans, and 16 awardees with pediatric planning “partially in place” reported engaging EMSC or related EMS programs as active partners. In 2012-2013, three PHEP awardees reported engagement of planning processes that included pediatric planning around Crisis Standards of Care, development of pediatric decontamination and first aid kits, and hiring of a pediatric consultant to support epidemiological surveillance activities.

b. ASPR’s NHPP and HRSA/EMSC have collaborated to synchronize efforts at the national level and ensure that Program Directors, Project Officers, and awardees from both programs coordinate on all relevant pediatric preparedness activities. Health care coalitions are encouraged to include EMSC Program Directors and pediatric SMEs in their membership, and EMSC Program Managers are encouraged to include NHPP Directors and health care coalitions in their efforts to develop pediatric disaster plans. Webinars, networking, and focused technical assistance for both programs’ respective grantees were conducted during 2013 to enhance partnerships related to planning and exercising together. Awardees throughout the country have reported increased collaboration and progress. NHPP and EMSC are currently working to develop program performance measures and pediatric disaster checklists for EDs.

c. ACF, in partnership with ASPR, CDC, HRSA, and SAMHSA, led the development of a new website, launched in September 2013, specific to “Early Childhood Disaster-Related Resources.” The website provides tools for the following three targeted audiences: children and families, early childhood development professionals, and policy makers. The compilation of resources includes links to interactive books and activities for children, tips and planning tools for parents, information on trauma and trauma-related services, a preparedness training module for early childhood providers, and examples of child care emergency preparedness plans for states, among other materials developed by federal and non-governmental partners.

d. NIMH, ASPR, and SAMHSA have worked over the past two years to develop a disaster behavioral health component under NIMH’s funded research. The strategy gained approval from NIMH’s advisory committee and the funding

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130 http://www.acf.hhs.gov/programs/obsepr/early-childhood
opportunity announcement was released in September 2013. These research projects will match non-governmental researchers with existing disaster behavioral health infrastructure and provider mechanisms to study disaster behavioral health effects and interventions.

2. Collaboration Between Federal Agencies

a. ACF has partnered with and provided SMEs to FEMA through various initiatives, including participation on the Youth Communications Advisory Committee to develop recommendations on a new strategy for Ready.gov that targets youth and on a webinar presentation on “Women and Children at Risk in Disasters,” designed for use by local and state emergency management authorities. In Region III, ACF and FEMA formed a Regional Children and Disasters Workgroup that meets bi-monthly. In addition, ACF has built the capability to deploy SMEs for children’s needs post-disaster. ACF deployed Children’s Needs SME staff to FEMA Joint Field Offices during events such as Hurricane Isaac, Superstorm Sandy, and the 2013 Yukon River flooding disaster in Alaska. This initiative offers state and local human services agencies, as well as Emergency Management Agencies, opportunities to participate in discussions focusing on planning for the needs of children, to assist them in identifying gaps in current planning and often includes presentations by SMEs involved in children’s needs in disasters. Past presentations have included topics such as planning for protecting children in shelters. The U.S. Census Bureau recently provided information to the regional participants on using U.S. Census Bureau and American Community Survey data to assist states in planning efforts.

b. HRSA, ASPR, and the Department of Transportation’s (DOT) National Highway Traffic Safety Administration jointly collaborated on the development of a draft white paper, “Innovation Opportunities for Emergency Medical Services.” The paper was released for comment in July 2013 and presents one example model of the potential for cost savings if EMS systems adopted protocols and strategies to innovatively triage and treat patients. There are several, significant ways for EMS systems across the country to more appropriately care for their patients while maintaining financial sustainability. This draft white paper and model concept will be helpful as regional, tribal, state, and local EMS and health system planners prepare frameworks, options, and funding strategies for innovative collaboration among health providers. Readers are encouraged to review the white paper and provide the agencies with comments, suggestions, or additional data.

3. **Collaboration Between Federal Government, State Government, and NGOs**

   a. The CDC Healthcare Preparedness Activity (HPA) conducted a Pediatric Stakeholder Meeting in the fall of 2009 and from that meeting developed several tools, which are still relevant to seasonal and pandemic influenza planning. The meeting included SMEs, among them many experts specifically in pediatrics, from CDC, ASPR, DHS, Children’s Hospital Association (formerly the National Association of Children’s Hospitals and Related Institutions), AAP, National Association of Pediatric Nurse Practitioners, National Association of School Nurses, and many pediatric hospitals and outpatient clinics. Tools were developed during the meeting and quickly posted on the CDC website upon completion, as this activity occurred during the peak of the 2009 H1N1 influenza outbreak. The tools\(^{134}\) included a Pediatric Hospital Workbook (including a triage algorithm); a Community Communication Guide; a Pediatric Office Planning Guide for developing a pandemic influenza plan; and a Planning Guide for Vaccinating Pediatric Patients that included a decision tree for physicians. Using the model from the Workbook developed in 2009, CDC’s HPA is planning a workshop to be held in the spring of 2014 on pediatric surge in a community where coordination between pediatric and general hospitals is used to mitigate surge at the pediatric hospital.

   b. CDC’s HPA also collaborated with several authors on a special journal edition of *Pediatric Critical Care* (and online\(^{135}\) in *Critical Care Medicine*) addressing emergency mass critical care in pediatrics, which included ten original articles on different aspects of emergency care for pediatric patients in a disaster situation.

   c. In the response to the December 2012 Sandy Hook Elementary School shooting in Newtown, Connecticut, HHS Operating and Staff Divisions collaborated with interdepartmental and non-governmental partners to address the behavioral health needs of children. Mental Health Team assets from USPHS Commissioned Corps, supported by an ASPR Incident Response Coordination Team, deployed to Connecticut to provide behavioral health support to the community. ACF, ASPR, SAMHSA, the American Red Cross (ARC), and the Department of Education collaborated to disseminate materials and resources on supporting children’s coping with traumatic events as well as guidance for parents, educators, and other adults on speaking with children about violence. An ACF’s Children’s Bureau grant, used to train clinicians in trauma-focused cognitive behavioral therapy (TFCBT) to address the needs of children and youth in the child welfare system, was strategically leveraged to provide needed training for Connecticut clinicians

\(^{134}\) [http://www.cdc.gov/phpr/healthcare/pediatric.htm](http://www.cdc.gov/phpr/healthcare/pediatric.htm)

in TFCBT to address community behavioral health needs after the Sandy Hook Elementary School shooting. ASPR also led a call with the White House for bereaved parents to share their concerns about how they were notified and updated with information about their children.

d. The HRSA EMSC program works with the HRSA Office of Special Health Affairs and the Federal Interagency Committee on Emergency Medical Services to assure state networks are linked to provide local support to one another. EMSC works in partnership with the Children’s National Medical Center, EMSC National Resource Center (NRC); AAP, Disaster Preparedness Advisory Council; and the National Association of State EMS Officials (NASEMSO), Pediatric Emergency Care Council. Ongoing collaborative efforts support partnerships with local, state, and national networks whose efforts are directed at improving the delivery of care available to children before, during, and after disasters. In 2012, the NRC researched disaster preparedness resources and created a central repository\(^\text{136}\) for a wide array of disaster preparedness tools and resources. The NRC website also houses an interactive map that connects health care professionals interested in volunteering during disaster relief efforts with volunteer agencies, as well as archived webcasts and fact sheet resources to support health professionals and EMSC grantees in disaster preparedness planning.\(^\text{137}\)

e. The HRSA/EMSC Program provides funding to 58 states, territories, and freely associated states (Republics of Palau and Marshall Islands and the Federated States of Micronesia) to improve the delivery of and access to EMS systems for children during daily operations, as well as in the event of a disaster. Projects funded by the program that support disaster preparedness efforts include the development of pediatric protocols; access to pediatric medical consultation; availability of equipment and supplies; guidelines and agreements to assure the immediate transfer of children to the most appropriate care, which may include triage and mass-movement of children in response to disasters; establishment of medical/trauma pediatric recognition systems to assure proper movement and treatment of children; and training for pre-hospital and hospital personnel to ensure they have the education and skills needed to respond, triage, manage, treat, and transport children during emergencies. HRSA/EMSC has also provided funding through targeted issue projects\(^\text{138}\) to improve disaster preparedness triage and response, as well as to develop tools to help identify children to reunite them with their families should they be separated as a result of a disaster.

\(^{136}\)http://www.childrensnational.org/emsc/
\(^{137}\)http://www.childrensnational.org/emsc/pubres/oldtoolboxpages/pdpreparedness.aspx
\(^{138}\)http://learning.mchb.hrsa.gov/archivedWebcasts.asp
In 2012 and 2013, ACF/OHSEPR engaged with a number of NGOs, professional associations, and academic institutions. In 2012, ACF worked with the U.S. Breastfeeding Committee to identify gaps in supporting nursing mothers and infants in disasters; this work led to the infographic presented in Appendix E of this report. In 2013, ACF provided guidance to the International Association of Emergency Managers regarding the Children and Youth Task Force in Disasters model (described later in this chapter). Also in 2013, ACF convened a panel on promising practices for children’s social and economic well-being in disaster recovery as part of the IOM’s Preparedness Forum.

ACF partnered with Save the Children to conduct impact assessments of child care systems and address disaster-caused child care gaps in several disasters including Hurricane Isaac, Superstorm Sandy, and the 2013 tornado outbreak in Illinois. Save the Children and ACF partnered to provide national-level SME in children’s needs in disaster recovery to state and local partners in Children and Youth Task Force initiatives in several disasters.

The National Pediatric Readiness Project: Ensuring Emergency Care for All Children is a collaborative quality improvement initiative, involving HRSA/EMSC and professional associations such as AAP, American College of Emergency Physicians, and Emergency Nurses Association, to ensure that EDs are adequately ready to care for pediatric patients. The National Pediatric Readiness Assessment provided an opportunity to assess the nation’s ED capacity. It was a web-based assessment developed by a Readiness Working Group and based on the 2009 Guidelines for Care of Children in the Emergency Department, which provided recommendations for the optimum care of pediatric patients during disasters. ED nurse leaders completed the survey, which was disseminated in January 2013. As of January 2014, nearly 83 percent (4,143) of EDs in the country completed the assessment. Data trends indicate that hospitals with higher patient volume receive higher pediatric readiness scores than hospitals with lower patient volume. Data also indicate that many hospitals (2,000 of the 3,600 surveyed) receive a “low” to “medium” number of pediatric patients. The Delphi method was used to weight survey domains and processes, and results indicate that physician and nursing pediatric coordinators/champions are essential to hospital pediatric readiness. Many aspects of the assessment were specifically designed to assist with hospital pediatric readiness improvement. Individual hospitals received a readiness score, which was compared to all

139 http://www.pediatricreadiness.org/State_Results/National_Results.aspx
140 http://pediatrics.aappublications.org/content/124/4/1233
hospitals across the nation that completed the assessment, as well as all hospitals with a similar patient load. Hospitals also received a gap analysis, which identified areas where improvement was needed and provided hospitals links to important resources, such as the national pediatric websites and sample job descriptions of nurse or physician coordinators. States received aggregate data to assist with health care policy decisions.

Based on the results of the National Pediatric Readiness Assessment, HRSA/EMSC—in collaboration with SMEs from the NHPP and several national NGOs—has initiated a project to develop a checklist of essential pediatric components to a hospital disaster policy that will be distributed to the nearly 5,000 EDs in the country.

i. In May 2013, CDC collaborated with the AAP and NACCHO to develop smallpox vaccine clinical utilization guidelines to improve preparedness in the event of a smallpox release. An expert panel of clinicians, vaccine specialists, and public health experts with a broad range of expertise developed the guidelines that cover vaccine use among adults, children, and pregnant women. As described elsewhere in this report, CDC has collaborated with the AAP on numerous projects related to providing clinical guidance on appropriate use of MCMs in children.

j. In June 2013, ASPR/NHPP hosted a national technical assistance webinar for the awardees and coalitions funded by HPP and their partners on “Pediatric Preparedness for Healthcare Coalitions.” Invited speakers included representatives from HRSA/EMSC, the AAP, Children’s Hospital Association, the Southeastern Regional Pediatric Disaster Surge Network, and the New York City Pediatric Disaster Coalition. This webinar provided information and identified resources that awardees could use to strengthen the pediatric components within each of their eight health care preparedness capabilities, and offered an overview of national, regional, and local health care system preparedness for children as well as examples of multi-state coalition planning for pediatric surge. The webinar also connected attendees to regional staff contacts from ACF, ASPR, HRSA/EMSC, FEMA, and the AAP. Over 400 groups participated in the webinar when it was originally broadcast and the webpage of annotated resources had over 3,000 visitors in the first month it was posted. A second ASPR/NHPP-sponsored webinar focused on pediatric preparedness will be held in May 2014. In August 2013, the HRSA/EMSC Program hosted a

141 http://pediatricreadiness.org
142 http://www.phe.gov/Preparedness/planning/abc/Pages/webinar-resources-130620.aspx
143 http://www.phe.gov/Preparedness/planning/hpp/meetings/Pages/default.aspx
webcast with nearly 300 participants in attendance, which included EMSC and NHPP program managers and directors, as well as representatives from national organizations, who presented possibilities for synchronizing EMSC and NHPP efforts at the state and local levels. Links to this and other recent EMSC webcasts were provided in Chapter II of the report.

k. Also in June 2013, ACF partnered with the Human Rights Campaign (HRC) and the National Center for Transgender Equality to deliver a webinar that highlighted strategies to better serve lesbian, gay, bisexual, and transgender (LGBT) individuals and families during a disaster. LGBT individuals can face additional stress or heightened challenges during disasters due to fears of discrimination and being underserved in emergency services. The webinar provided information on what it means to be an LGBT individual or family and how disaster responders can take steps to meet the needs of LGBT individuals and families by respecting relationship status, family structure, and gender identity. Additional information is available through HRC’s publication, “Working with the LGBT Community: A Cultural Competence Guide for Emergency Responders and Volunteers.”

l. In June 2013, CDC funded an IOM Workshop on Medical and Public Health Preparedness, Response, and Recovery Considerations for Children and Families. The workshop reviewed tools, frameworks, and past experiences on topics including health care coalitions and their challenges, benefits, and best practices; integrating children- and family-serving organizations into state and local planning; understanding the barriers to financing health care for children in emergencies; examining the needs of children and families related to shelter operations, nutrition, family reunification, mental health, and temporary child care; existing best practices and future potential strategies for emergency response; fostering recovery through community resilience; and approaches and interventions that promote the social and economic well-being of children after disasters. Participants included national, regional, and local representatives from ACF, ASPR, CDC, FEMA, DOT, ARC, state government, EMS, academia, children’s hospitals, and non-governmental and faith-based organizations.

m. In August 2013, ACF, the Head Start National Center on Health, and AAP/Healthy Child Care America (funded by ACF and HRSA) hosted a webinar on “Seasonal Influenza Prevention and Control: Strategies for Head Start and Child Care Programs.” Children in group care settings are at increased risk for catching infectious diseases such as influenza. This webinar provided an

144 http://www.hrc.org/files/assets/resources/EmergencyResponders_-_LGBT_Competency.pdf
146 http://goo.gl/GPhK5B
overview of 1) influenza and why it can be serious in children, 2) seasonal influenza recommendations for 2013-14 and the urgent need for children and their caregivers to get vaccinated annually, 3) strategies to prevent or control the spread of influenza in Head Start and child care settings, and 4) key resources for additional information.

n. In 2012-2013, ACF and ASPR actively contributed to the FEMA-led development of a national approach to the reunification of children separated from parents or legal guardians due to a disaster or public health emergency. The *Post-Disaster Reunification of Children: A Nationwide Approach* document\textsuperscript{147} was released in November 2013 under the FEMA, HHS, ARC, and National Center for Missing and Exploited Children logos and is designed to:

i. Assist local and state governments in determining processes, communication lines, and the identification of roles and responsibilities necessary to facilitate the expeditious reunification of children with their parent or legal guardian in the aftermath of a disaster.

ii. Encourage stakeholders and community leaders to develop and build upon existing relationships in an effort to collaborate and communicate more efficiently and effectively in the event of a large-scale disaster, specifically one occurring during normal business hours and a school day.

iii. Establish an understanding of how all responsible parties (in both leading and supporting roles) can work together to support each other’s missions.

iv. Identify tools and resources that could assist localities and states in disaster-related reunification efforts, including the use of technology and support from federal agencies, NGOs, and other stakeholders.

o. In November 2013, ASPR participated in a meeting hosted by the AAP on *Disaster Recovery for Pediatricians: Professional Self-Care Meeting*. ASPR requested the AAP to identify ways the Academy could support its members during and following a disaster to mitigate compassion fatigue and other stress that providers may face. Participants reviewed what is currently known about pediatrician needs in a disaster and strategies for self-care, identified existing training resources, considered what other interventions might be useful, and determined priority steps for AAP projects that could support pediatricians to address their own needs and recover from a disaster.

4. **Collaborative Task Force Efforts during 2012 Storms Isaac and Sandy**

a. Following Hurricane Isaac’s landfall in Louisiana, ACF and Save the Children partnered to convene Children’s Coalition Task Forces in the hardest-hit parishes.

\textsuperscript{147}http://www.phe.gov/Preparedness/planning/abc/Documents/children-reunification.pdf
These task forces were composed of more than 50 governmental and NGOs serving children across the spectrum of child physical health, behavioral health, education, early childhood programs, social services agencies, recreational associations, and children’s advocacy organizations. The task forces conducted collaborative assessments of children’s needs, impacts to systems upon which children and families depend, and coordinated efforts to promote children’s health, safety, and well-being. The task force model has been viewed as very successful in the community and has become a promising practice by Save the Children and ACF, influencing the task forces that formed in New York and New Jersey following Superstorm Sandy.

b. The three states most directly affected by Superstorm Sandy were Connecticut, New Jersey, and New York. Childcare centers and Head Start centers in New Jersey and New York were especially affected by the damage that occurred during the storm. Immediately following the disaster, a group of partners gathered to identify gaps and resources to revive child care in the affected states. The group identified additional, necessary partners and formed two task forces, one for each state, to ensure that the unique needs were met. The task forces, described in greater detail below, included FEMA, HHS Recovery Coordinators, ACF programs, including the OHSEPR, OCC, OHS, and Office of Regional Operations, as well as non-federal entities such as Voluntary Organizations Active in Disasters, state health department and child care staff, city staff, local staff, child care providers, and Head Start providers. These task forces put all the right partners at the table to ensure child care needs were met at the local level. ACF collaborated with FEMA to leverage available funding through Public and Individual Assistance programs to support early childhood program recovery and continuity of child care and Head Start services. ACF also deployed SMEs in child care, Head Start, and children’s needs in recovery to the FEMA Joint Field Offices in both states.

In New York, SAMHSA provided information to the HHS Recovery Coordinator and the ACF Child Care Liaison Officer, who shared it with the state Head Start and Child Care offices for dissemination. SAMHSA information was also distributed to the state education office. The SAMHSA Project Officer for the CCP identified outreach to and within schools as an area for discussion with the state awardee in terms of delivery of CCP services, while recognizing that schools are protected environments and are generally challenging to infiltrate. Additionally, the New York State Child Care Task Force examined mechanisms to address this challenge in the future through non-profit and faith-based providers.
In New Jersey, the Task Force included ACF, FEMA, the New Jersey Department of Education, the New Jersey Department of Children and Families, and many others. The Task Force worked with Joplin, Missouri, school districts to implement lessons learned from the 2011 tornado disaster. New Jersey’s Traumatic Loss Coalition (TLC) is a pre-existing resource that was already present in schools throughout the state. The TLC was also a member of the Task Force and focused its efforts on the disaster. FEMA’s Child Coordination lead was assigned to support this Task Force’s efforts, the CCP grant was used to target the needs of children, and the HHS Recovery Coordinator was well connected to all of these partners.

In addition to Task Force activities:

i. SAMHSA’s NCTSN held ongoing coordinating calls with their disaster-affected grantees, as well as field experts, to share lessons learned and offer resources and other tools to work with traumatized children/youths/families of Superstorm Sandy.

ii. APR’s Division for ABC implemented the DBH CONOPS (first published in December 2011) in response to Superstorm Sandy. Activities included:
   • Activating the Federal Disaster Behavioral Health Group.
   • Staffing a dedicated Behavioral Health Liaison Officer (BH LNO) position within the Emergency Management Group to provide technical assistance and ensure integration of mental health within the public health and medical mission.
   • Supporting the BH LNOs in the field in New York and New Jersey.
   • Distributing information in multiple languages on resources in support of disaster behavioral health and coping skills for adults and children.

c. In September 2013, ACF released the “Children and Youth Task Force in Disasters: Guidelines for Development.”¹⁴⁸ This guide introduces Whole Community partners to Children and Youth Task Forces in Disasters, includes recommendations for tribes, territories, states, and local communities interested in launching their own task forces, and outlines the support that ACF can provide. It was developed using vital lessons learned in meeting the needs of children and youth in Superstorm Sandy, Hurricane Isaac, and the Joplin tornado disaster. In addition, this resource provides guidance to help emergency management, human services, and public health professionals

implement an effective, integrated approach to supporting children’s needs in emergency preparedness, response, and recovery.

C. Areas for Future Consideration

1. Partnerships
   a. Create topic-based, interdepartmental councils or committees to jointly direct collaborative projects in support of disaster preparedness efforts for children, which would expand the value of inventories of relevant assets and activities, such as the one offered via this report. Clearly defined, topic-based committees would reduce duplication of effort across government, better serve stakeholders, and align available resources in areas that must be addressed from multiple perspectives.
      i. Partnerships should not be constrained to health-related organizations. Workgroups could also develop strategies for partnering with local non-health entities such as the National Guard, utility, transportation, telecom providers, home improvement retailers, etc.
   b. Cultivate partnerships among HHS, FEMA, the Small Business Administration, children’s advocacy groups, NGOs, and state child care licensure and regulation agencies to promote necessary administrative changes to address gaps in financial support for the recovery of child care systems.
      i. As evidenced following Superstorm Sandy, significant gaps remain in the legal authority to provide effective financial support for the recovery of child care systems in communities following disasters. Many child care providers are in-home, family-owned businesses with very small operating margins. Child care providers often report difficulty accessing federal funds to support repairs and reconstruction because they are not private non-profits and are therefore ineligible for Public Assistance funding. Meanwhile, they may also lack the credit and profitability requirements for Small Business Administration disaster loans. This gap, recognized jointly by FEMA and HHS/ACF, represents a formidable challenge to communities since the rapid reconstitution of child care services is a fundamental requirement for community economic and social recovery. In addition, delays in restoration of child care services negatively impact children’s economic well-being (as parents are delayed in their return to work), safety and security, and behavioral health (due to the correlation between a prolonged disruption in routine and the adverse behavioral health impact of disasters on younger children).
2. Research
   a. Support research on regional coordination of pediatric care during large-scale disasters and prioritize the development of a national level, multi-stakeholder exercise with an emphasis on pediatric mass casualties to test regional capacity.
      i. Ensure coordination with the HRSA/EMSC SPROC demonstration grants, which support the development of innovative models of improving pediatric emergency care in rural, tribal and territorial communities (e.g., Alaska, Arizona, California, Montana, New Mexico, and Pennsylvania).
      ii. Include specific attention to children with mobility, functional, sensory and special health care needs in exercises.
   b. Following the evaluation of the grants awarded for Hurricane Sandy recovery research, support additional research on metrics for community resilience building, with particular attention to factors that result in improved outcomes for children’s physical and mental health and socio-economic well-being.

3. Training
   a. Primarily through grants and cooperative agreements, identify and disseminate basic and “just-in-time” training on addressing a surge of pediatric patients in community and adult hospitals (since most children—approximately 89 percent—are treated at non-children’s facilities).
   b. Expand training opportunities for emergency management authorities on effective collaboration with early childhood programs (such as child care and Head Start) and family violence prevention and services systems.
   c. Increase support for training USPHS, the National Disaster Medical System (NDMS), the Medical Reserve Corps, and other response assets administered by HHS on children’s health and social services needs, with added attention to the social determinants of health in crisis events. This includes continued development of USPHS assets to meet children’s human services needs (e.g., the USPHS Community Health and Service Mission initiative), with particular attention paid to ensure the cultural and linguistic competence of responders.

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150 http://www.phe.gov/Preparedness/planning/abc/Documents/PediatricCoalitions-20130620.pdf
VI. Acknowledgements

ACF and ASPR tasked the CHILD Working Group to assess current capabilities, facilitate coordination at the policy and response levels, and develop a set of potential next steps. These potential next steps could enhance how the Department provides and facilitates care for children during and after disasters or public health emergencies.

Fulfilling the charge given to the Working Group by ACF and ASPR leadership, particularly given the complexities of ensuring coordination across a large, intra-departmental entity, was no small task. Members played critical roles by attending multiple meetings to assess gaps and discuss capabilities, by serving as chairs and members of the three subcommittees, or by serving as a reviewer and providing thoughtful comments and revisions. ACF and ASPR leadership, as well as the chairs of the Working Group, deeply appreciate the collective and sustained participation, expertise, and hard work of all members of the Working Group and its subcommittees to produce this important document. HHS remains committed to the continued monitoring of progress and the implementation of the CHILD Working Group’s original recommendations, as well as those of the new NACCD. The Working Group will continue to meet on a regular basis to ensure integration and coordination of children’s needs across the Department, and will update ACF and ASPR leadership as appropriate on progress with key initiatives to ensure that the issue stays a high priority for HHS leadership.
VII. Appendix A: List of Acronyms

AAP – American Academy of Pediatrics
ABC – Division for At-Risk Individuals, Behavioral Health, and Community Resilience (ASPR)
ACF – Administration for Children and Families
ACOG – American College of Obstetricians and Gynecologists
AMT – Anthrax Management Team (CDC)
ARC – American Red Cross
ASPR – Assistant Secretary for Preparedness and Response
AT – Action Team (FDA)
AUCD – Association of University Centers on Disabilities
BARDA – Biomedical Advanced Research and Development Authority (ASPR)
BPCA – Best Pharmaceuticals for Children Act
CBRN – Chemical, Biological, Radiological, and Nuclear
CCDF – Child Care and Development Fund (ACF)
CCP – Crisis Counseling Assistance and Training Program (FEMA/SAMHSA)
CDC – Centers for Disease Control and Prevention
CHILD – Children’s HHS Interagency Leadership on Disasters
COCA – Clinician Outreach Coordination Activity (CDC)
CONOPS – Concept of Operations
COOP – Continuity of Operations
CounterACT – Countermeasures Against Chemical Threats (NINDS)
CSHCN – Children with Special Health Care Needs
DBH – Disaster Behavioral Health
DCM – Disaster Case Management
DDH – Disaster Distress Helpline (SAMHSA)
DHS – Department of Homeland Security
DOT – Department of Transportation
DPAC – Disaster Preparedness Advisory Council (AAP)
DRH – Division of Reproductive Health (CDC)
ED – Emergency Department
EHR – Electronic Health Records
EID – Emerging Infectious Disease
EMS – Emergency Medical Services
EMSC – Emergency Medical Services for Children (HRSA)
EUA – Emergency Use Authorization
FDA – Food and Drug Administration
FDASIA – Food and Drug Administration Safety and Innovation Act
FEMA – Federal Emergency Management Agency (DHS)
FVPSA – Family Violence Prevention and Services Act
GAO – Government Accountability Office
HHS – Department of Health and Human Services
HPA – Healthcare Preparedness Activity (CDC)
HPP – Hospital Preparedness Program (ASPR)
HRC – Human Rights Campaign
HRSA – Health Resources and Services Administration
IDCM – Immediate Disaster Case Management
IND – Investigational New Drug
IOM – Institute of Medicine
IPT – Integrated Program Team (PHEMCE)
IRB – Institutional Review Board
LBW – Low Birth Weight
LGBT – Lesbian, Gay, Bisexual, Transgender
LNO – Liaison Officer
MCHB – Maternal and Child Health Bureau (HRSA)
MCM – Medical Countermeasure
MIECHV – Maternal, Infant, and Early Childhood Home Visiting (HRSA)
MMWR – Morbidity and Mortality Weekly Report (CDC)
MVA – Modified Vaccinia Ankara
NACCD – National Advisory Committee on Children and Disasters
NACCHO – National Association of County and City Health Officials
NASEMSO – National Association of State EMS Officials
NBSB – National Biodefense Science Board
NCBDDD – National Center on Birth Defects and Developmental Disabilities (CDC)
NCCD – National Commission on Children and Disasters
NCDMPH – National Center for Disaster Medicine and Public Health
NCTSN – National Child Traumatic Stress Network (SAMHSA)
NDMS – National Disaster Medical System (ASPR)
NGO – Non-Governmental Organization
NHPP – National Healthcare Preparedness Program (ASPR)
NIAID – National Institute of Allergy and Infectious Diseases
NICHD – National Institute of Child Health and Human Development
NICU – Neonatal Intensive Care Unit
NIEHS – National Institute of Environmental Health Sciences
NIH – National Institutes of Health
NIMH – National Institute of Mental Health
NINDS – National Institute of Neurological Disorders and Stroke
NLM – National Library of Medicine
NRC – National Resource Center (EMSC)
OB – Obstetric
OCC – Office of Child Care (ACF)
OHS – Office of Head Start (ACF)
OHSEPR – Office of Human Services Emergency Preparedness and Response (ACF)
ONC – Office of the National Coordinator for Health Information Technology
OPHPR – Office of Public Health Preparedness and Response (CDC)
PAC – Pediatric Advisory Committee (FDA)
PAHPA – Pandemic and All-Hazards Preparedness Act of 2006
PAHPRA – Pandemic and All-Hazards Preparedness Reauthorization Act
PECARN – Pediatric Emergency Care Applied Research Network (EMSC)
PedsOB IPT – Pediatric and Obstetric Integrated Program Team (PHEMCE)
PHEMCE – Public Health Emergency Medical Countermeasures Enterprise
PHEP – Public Health Emergency Preparedness (CDC)
PK – Pharmacokinetics
PRAMS – Pregnancy Risk Assessment Monitoring System
PTCIB – Pediatric Trauma and Critical Illness Branch (NICHD)
PTSD – Post-Traumatic Stress Disorder
R&D – Research and Development
RFP – Request for Proposals
RHAD – Reproductive Health Assessment After Disaster (CDC)
SAMHSA – Substance Abuse and Mental Health Services Administration
SME – Subject Matter Expert/Expertise
SMS – Short Message Service
SNAP – Supplemental Nutrition Assistance Program (USDA)
SNS – Strategic National Stockpile (CDC)
SPROC – State Partnership Regionalization of Care demonstration grants (HRSA/EMSC)
TFCBT – Trauma-focused cognitive behavioral therapy
TLC – Traumatic Loss Coalition (New Jersey)
USDA – United States Department of Agriculture
USICH – U.S. Interagency Council on Homelessness
USPHS – U.S. Public Health Service
WIC – Special Supplemental Nutrition Program for Women, Infants, and Children (USDA)
VIII. Appendix B: 2011 CHILD Working Group Recommendations

1. Mental and Behavioral Health
   - Develop and implement a Concept of Operations for disaster behavioral health.
   - Implement internal, programmatic improvements to the Crisis Counseling Assistance and Training Program.
   - Leverage new/expanded health home and behavioral health benefits authorized by the ACA to promote health and resilience in children.
   - Update HHS grants to improve integration among public health, behavioral health, and health care delivery systems.
   - Enhance the research agenda for children’s disaster mental health.
   - Promote and disseminate just-in-time training on children’s mental health for caregivers, professionals, and responders.

2. Medical Countermeasures
   - Establish an integrated program team to advise the PHEMCE on pediatric and OB MCM priorities.
   - Incorporate pediatric and OB-specific vulnerabilities in scenario and medical consequence modeling for requirements.
   - Provide clarity in the regulatory pathway for pediatric MCMs (e.g., stockpiling, forward deployment, clinical guidance).
   - Engage the pediatric MCM community on a regular basis.
   - Continue and improve industry support for research and development of MCMs suitable for pediatric use.
   - Include pediatric and OB expertise in the Public Health Emergency Research Review Board to support data collection for assessing safety and efficacy of MCMs.

3. Child Physical Health, Emergency Medical Services, and Pediatric Transport
   - Evaluate the recruitment and deployment process of the NDMS Multi-Specialty Enhancement Team.
   - Strengthen requirements for pediatric surge capacity within HPP and encourage HHS grantees to adopt the EMSC pediatric equipment list for ambulances and other guidelines.
   - Take a lead role in setting educational and operational standards for pre-hospital care, particularly for children.
   - Convene stakeholders to assess capabilities and address gaps for large-scale pediatric patient movement.
   - Train NDMS personnel in pediatric disaster medicine to ensure basic clinical skills.
4. **Child Care and Welfare**

- Implement and promote the ACF Information Memorandum that provides guidance to Child Care & Development Fund Lead Agencies in developing, exercising, and maintaining comprehensive emergency preparedness and response plans for child care.
- Develop a cross regional review of child welfare disaster plans to identify strengths, areas for improvement, and targeted technical assistance.
- Make available additional outreach and training efforts for states to increase their understanding of the Disaster Case Management program.
- Ensure children and others with access and functional needs are included in relevant disaster services trainings.
IX. Appendix C: CHILD Working Group Members 2012-2013

Administration for Children and Families (ACF)
   Allen Applegate       Mary Riley
   Kathy Edler           Shannon Rudisill
   Linda Greenberg      Cheryl Vincent
   Amy Grissom          Jonathan White
   Tala Hooban

Administration for Community Living (ACL)
   Previously represented by ADD and AoA

Assistant Secretary for Financial Resources (ASFR)
   Jillian Curtis

Assistant Secretary for Legislation (ASL)
   Barbara Clark

Assistant Secretary for Planning and Evaluation (ASPE)
   Scott Douglas       Laura Radel
   Amy Nevel

Assistant Secretary for Preparedness and Response (ASPR)
   Susan Cibulsky       Mary Kosinski
   Daniel Dodgen        Cheryl Levine
   Kristen Finne        Don Malinowski
   Andrew Garrett       Byron Mason
   Sulava Gautam        Patricia Pettis
   Cynthia Hansen       Olivia Sparer
   Chad Hrdina          Chris van de Wetering
   Jim King

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   Michael Bartenfeld    Katherine Shealy
   Stephanie Griese      Christa Singleton
   Dana Meaney-Delman    Camille Smith
   Mei Castor            Etobssie Wako
   Georgina Peacock      Marianne Zotti
   Jean Randolph

Center for Faith Based and Neighborhood Partnerships (CFBNP)
   Kimberly Konkel

Centers for Medicare and Medicaid Services (CMS)
   Jeffrey Buck          Kimberly Schwartz
Food and Drug Administration (FDA)
  Aysha Akhtar
  Anthony Garza
  Brad Leissa
  Carmen Maher
  Susan McDermott
  Rosemary Roberts

Health Resources and Services Administration (HRSA)
  Terry Adirim
  Elizabeth Edgerton
  Ellen Schenk
  Bonnie Strickland

Indian Health Service (IHS)
  John (Skip) Mahon

Intergovernmental Affairs (IGA/IEA)
  Nikki Bratcher-Bowman

National Institutes of Health (NIH)
  F.L. Dammann (PMF)
  Alicia Livinski
  Lisa Kaeser
  Valerie Maholmes
  Mirjana Nesin
  Sybil Philip
  Mona Rowe
  David Siegel
  Farris Tuma
  Anne Zajicek

Office of the Assistant Secretary for Health (OASH)
  Sarah Field
  Sandra Howard
  Ursuline Singleton

Office for Civil Rights (OCR)
  Claudia Adams
  Eileen Hanrahan

Office of Inspector General (OIG)
  Talisha Searcy

Office of the National Coordinator for Health Information Technology (ONC)
  Rachel Nelson

Substance Abuse and Mental Health Services Administration (SAMHSA)
  Nancy Kelly
  Terri Spear
X. Appendix D: Sample Pregnancy Passport (from the Department of Defense & Department of Veterans Administration)
## Labs

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<tr>
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<td>3 hr GTT*</td>
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**Other*”

## Ultrasound

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 Comments

## Optional Screening/Diagnostic Testing

### Aneuploidy/Anomaly Screening

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### Education

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<td>Tul/ETOH/Drug</td>
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<tr>
<td></td>
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### Psychosocial

| Depression Screen | Intake | 28w |
| SAFE Home Screen  | Intake | 24w  | 32w |

### Vaccinations/Immunizations

| Flu | Last Tetanus | RhoGam |

### Plans

- L&D Requests
- Feeding: Breast, Formula
- Circumcision: N/A, Yes, No, Undecided
- PP Birth Control

## Education

- Pregnancy Outcome
  - Date Pregnancy End
  - EGA Pregnancy End
  - Delivery

- Post Partum
  - FU NEEDS: Colpo, TDAP, MMR, 2 hr GTT Consults
  - Comments
XI. Appendix E: Infant Feeding During Disasters Infographic (from ACF’s OHSEPR)

Available online at http://www.acf.hhs.gov/programs/ohsepr/infant-feeding-during-disasters