NATURAL HAZARDS CENTER

# Research Counts

## Children and Disasters Special Collection

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For the online version of this *Research Counts* Special Collection on Children and Disasters, please visit:
**hazards.colorado.edu/news/research-counts/special-collection/children-and-disasters**


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# Introduction

# Introduction: Children Count in Disasters

**By Lori Peek, Amy Wolkin, Tracy N. Thomas, and Russ Paulsen**

More research on children and disasters has been published since 2010 than in the previous 70 years combined. However, this research does not always make it into the hands of those who need it most, including public health practitioners, emergency managers, policy makers, and other local, state, and federal officials.

This special collection of Research Counts—which was done in partnership between the Natural Hazards Center and the Centers for Disease Control and Prevention—aims to bring recent research on children and disasters to a wide audience. The broader vision for the series as a whole is to share actionable research insights about the human dimensions of hazards preparedness and mitigation as well as enduring lessons regarding disaster response and recovery.

## Why Children?

In 2017, children (ages 0-17 years) accounted for 23 percent of the estimated 323 million United States total population and in 2010, children aged 0-14 years accounted for just under 30 percent of the estimated 9 billion, globally.

Children require additional attention in order to lessen negative consequences during and following a disaster. Even so, children are all too often overlooked in disaster planning efforts. This can amplify their vulnerability when disaster strikes.

Consider just a few of the ways that children may be especially at risk in public health emergencies, natural hazard events, or technological accidents:

- Because children may not be able to communicate their symptoms or feelings, they can suffer serious emotional effects after disaster.
- Because children generally depend on adults for transportation and often spend most of their days away from home, they may be separated from their families for an extended time after disasters.
- Some very young children, and especially infants and toddlers, may need complete physical protection in a disaster.
- Because children breathe in more air for their size than adults and are lower to the ground, children may be more exposed to toxic or harmful materials.
- In 2016, 41 percent of children in the United States were living in low-income families classified as "poor" or "near poor." Often, those children experience other forms of social vulnerability related to race, age, household composition, and other factors (see Figure 1).

In spite of their potential vulnerabilities, children have strengths and substantial capacity to contribute to preparedness and resilience-building activities in their homes, schools, and communities. For this to happen, children must be included in meaningful ways in efforts and initiatives that impact their lives and future prospects.

## This Special Collection

This special collection includes original briefs from experts in public health and medicine, psychology, sociology, urban planning, and many other disciplines. These researchers have extensive experience studying children across the disaster lifecycle. They have written contributions meant to illuminate children's vulnerabilities and strengths and, importantly, to focus attention on how public health practitioners, emergency managers, and others can advance disaster planning and response efforts that consider children's specific needs in light of evidence-based recommendations.

Each contribution includes research insights regarding children in various hazards contexts as well as a specific callout box to underscore implications for public health practitioners, emergency managers, and other professionals. In addition, our team has prepared a list of tools and suggested further readings that are readily available and freely accessible online. Our hope is

that practitioners will be able to use these resources to support the integration of children's needs into disaster preparedness, response, recovery, and mitigation efforts.

Children are growing up in a nation and world affected by more frequent and intense disasters. It is critical that research is shared with practitioners to help reduce disaster risk and improve overall quality of life.

Research matters, and we want to help make it count.

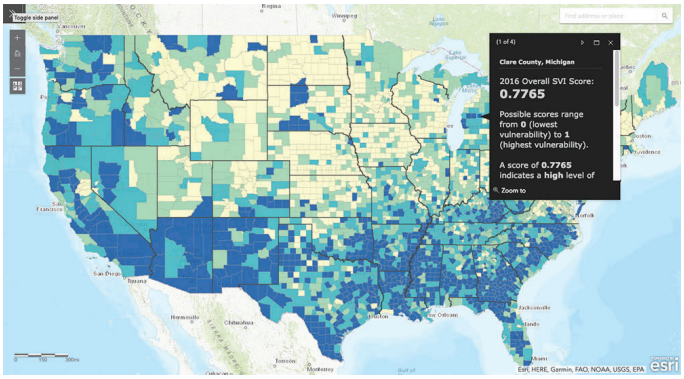



*Figure 1. The interactive map feature of the CDC Social Vulnerability Index helps users identifiy communities in need of disaster support using 15 U.S. Census variables. In this example, a search yielded the social vulnerability index score for Clare County, Michigan.*

## Suggested Tools

### Children in a Disaster Tools and Resources
**Centers for Disease Control and Prevention**
List of tools and resources that can be used by parents, caregivers, teachers, health professionals, and other adults to care for children in a disaster.

### CDC Social Vulnerability Index
**Agency for Toxic Substances and Disease Registry**
Interactive mapping tool that ranks U.S. Census tracts according to social vulnerability to hazards and disasters.

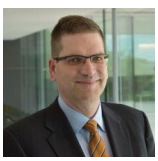
### Youth Preparedness Fact Sheet
**Federal Emergency Management Agency**
Fact sheet providing information on how youth can get involved in disaster preparedness initiatives.

## About the Authors

Lori Peek is director of the Natural Hazards Center and professor in the Department of Sociology at the University of Colorado Boulder. She is principal investigator of the National Science Foundation CONVERGE initiative and author of *Behind the Backlash: Muslim Americans after 9/11*, co-editor of *Displaced: Life in the Katrina Diaspora*, and co-author of *Children of Katrina*. She also is a contributing author to FEMA P-1000 *Safer, Stronger, Smarter: A Guide to Improving School Natural Hazard Safety*.

Amy Wolkin is the senior advisor for at-risk populations in the Center for Preparedness and Response at the Centers for Disease Control and Prevention (CDC). She focuses on improving the resilience of at-risk populations to public health emergencies. Since joining the CDC in 2002, she has led numerous national and international outbreak investigations and emergency responses. Her research includes at-risk populations, health impacts of extreme weather, and environmental epidemiology.

Tracy N. Thomas is a senior health scientist in the Center for Preparedness and Response (CPR) at the Centers for Disease Control and Prevention. Trained at the University of Alabama-Birmingham and Harvard T.H. Chan School of Public Health in Epidemiology, she has research experience in vaccine safety, immunization program delivery, and disaster preparedness. Her previous research efforts focused on the uptake of vaccines and effectiveness of immunization intervention strategies in Women, Infants, and Children settings. Since joining CPR, she has contributed to a broad range of initiatives, such as increasing resilience through household disaster preparedness and developing evaluation tools for assessing training effectiveness.



Russ Paulsen is a 26-year veteran of emergency management and nonprofit human services. Now the chief operating officer of UsAgainstAlzheimer's, Paulsen previously led the Hurricane Katrina long-term recovery effort for the American Red Cross, as well as the Red Cross disaster preparedness team that created the lifesaving Home Fire Campaign, the app MonsterGuard: Preparing for Emergencies, the Kindergarten through second grade-oriented Prepare with Pedro program, and a joint report with the Federal Emergency Management Agency entitled *Awareness to Action: Motivating the Public to Prepare*.

Peek, Lori, Amy Wolkin, Tracy N. Thomas, and Russ Paulsen. 2019. "Introduction: Children Count in Disasters." *Research Counts*, Special Collection on Children and Disasters. 3(SC1). https://hazards.colorado.edu/news/research-counts/special-collection/introduction-children-count-in-disasters

# Articles

Photo Credit: Dustie, 2011.

## Who Needs Help Most? Focusing Child Mental Health Resources After Disaster

**By Betty Lai, Annette La Greca, and Ann-Margaret Esnard**

### Implications for Public Health

Screen children to identify those experiencing elevated post-traumatic stress symptoms and then identify sources of social support and coping strategies.

Frightening flashbacks, recurring nightmares, the inability to focus at school—up to 70 percent of children who experience disasters will show post-traumatic stress symptoms such as these in the first three months. Left untreated, symptoms can become chronic in some children.

There are treatments to reduce post-traumatic stress symptoms, but many such measures are too resource intensive to offer to every affected child after a large-scale disaster. And studies consistently show that the majority of affected children may not need these resource-intensive treatments.

How can we know who needs intensive treatment and who will recover without it? How do we allocate resources so that we're providing the right level of care to match the needs of each child?

We reviewed eight rigorous studies that included more than 8,000 children between ages 3 and 18 and found some potential answers. Researchers examining adults have found four categories of reactions to disasters that would be considered typical: chronic (high levels of symptoms that stay high over time), recovery (symptoms that start high but decline over time), delayed (symptoms that start low but increase over time), and resilience (symptoms that start low and remain low over time).

With children, we found that there wasn't much evidence of delayed symptoms of post-traumatic stress. This was surprising because delayed symptoms have often been found in research with adults. In addition, most children were resilient and either never reported high levels of symptoms, or recovered over time from their initial distress.

A very small number of children across the studies reported chronic symptoms following disaster. Importantly, these children differed from those who recovered over time in that they were more likely to have low levels of social support, more negative coping skills, and more stressful ongoing life events.

What does this mean for helping children after disasters? It means that while early symptoms don't necessarily show the full picture of how a child will do over time, we don't need to worry too much that children who don't show symptoms early on will suddenly become symptomatic later. It is the children who report very high levels of distress in the first three months, and who also lack social support, have poor coping skills, or continue to experience stress, who are not likely to improve on their own.

Therefore, we need to screen children soon after a disaster to figure out which children report high levels of symptoms that interfere with their lives—as well as which children lack support and are having trouble coping with stress—since these children's symptoms can continue in the long-term.

To address these issues, schools and public health officials should screen children to identify those experiencing elevated post-traumatic stress symptoms and to determine sources of social support and coping strategies. Schools are an ideal site for conducting screenings, since most children attend school and schools have established relationships with children and families. Screenings should be conducted after children's basic needs have been met, an implementation team is convened, and resources for children experiencing distress have been identified.

The National Child Traumatic Stress Network developed guidelines for screening and assessment related to trauma and children's mental health. For children who report distress but don't need an intensive intervention, Annette La Greca and 7-Dippity Inc. have developed After the Storm, a guide to help children cope with the effects of disasters.

Although many children will bounce back after disasters, some will need more targeted help to cope with their feelings of distress. Working to identify those children early is an important step to helping them move beyond the impact of natural disaster and toward adjustment and healthy quality of life.

## Suggested Tools

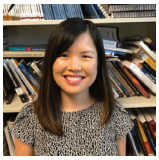
### After the Storm

**Annette La Greca, University of Miami; Scott Sevin and Elaine Sevin, 7-Dippity**
Guide to help children cope with the psychological effects of a hurricane.

### Trauma-Informed Mental Health Assessment

**National Child Traumatic Stress Network**
Guidelines for screening and assessment related to trauma and children's mental health.

## About the Authors

Betty Lai is the Buehler Sesquicentennial Assistant Professor at Boston College. Her work focuses on helping children prepare for, respond to, and adapt to stressors and adverse events. She has identified factors that place children at risk for negative outcomes and factors that help youth be more resilient. She and her colleagues are also examining how adverse events may impact schools. She is working to provide recommendations for how schools may prepare for such events and how they can support their communities.

Annette La Greca is a distinguished professor of psychology and pediatrics and director of clinical training at the University of Miami. Her research focuses on risk and resilience factors that predict youth reactions to stressors, including hurricanes and peer victimization. She developed interventions that can be administered in schools to prevent post-traumatic stress in children exposed to disasters, and to prevent anxiety and depression in adolescents who are targets of peer/cyber victimization.

Ann-Margaret Esnard is a distinguished university professor of public management and policy, and associate dean for research in the Andrew Young School of Policy Studies at Georgia State University. Her research delves into factors that cause people to be displaced from their communities, school recovery after disasters, long-term recovery, and community resilience. Her research is necessarily interdisciplinary and collaborative to tackle complex planning and policy problems.



Lai, Betty, Anette La Greca, and Ann-Margaret Esnard. 2019. "Who Needs Help Most? Focusing Child Mental Health Resources after Disaster." *Research Counts*, Special Collection on Children and Disasters. 3(SC2). https://hazards.colorado.edu/news/research-counts/special-collection/who-needs-help-most-focusing-child-mental-health-resources-after-disaster

# How Parent Mental Health Can Affect Children After Disaster

**By Betty Pfefferbaum and Carol S. North**

Even children who were not directly exposed to a disaster can experience post-traumatic stress, post-traumatic behavior changes, or a drop in grades. Our research found that having a parent who screened positive for a psychiatric disorder after a disaster was one of the biggest factors in predicting a child's post-disaster symptoms or a decline in school performance—even more significant than whether the child was exposed directly to the disaster.

### Implications for Public Health

Parental experience with and reactions to disasters should be considered when addressing children's responses to extreme events.

Our study of 266 children (and 160 of their parents) after three large disasters points to how crucial it is to consider the interplay between a parent's mental health and that of their child. The connection has implications for which children should be screened for additional services after a disaster, as well as how professionals can more broadly plan for and deliver mental health services after disaster.

## Implications for Disaster Mental Health Screening

Disaster mental health screening shouldn't be limited to children who were directly exposed to a disaster, but should also consider parents' disaster experiences and reactions, as well as the influence parents have on their child's reactions and recovery.

Adult survivors should be asked about any children for whom they are caregivers. Questions might explore:

- The child's disaster exposure and reactions
- The child's current symptoms and functioning
- The child's vulnerabilities such as previous trauma and pre-existing conditions
- The availability and quality of family and social support

Because of the relationship between a parent's reactions and their child's outcome, it is important to inquire about a range of problems rather than focus exclusively on post-traumatic stress symptoms. Parents may be unaware of important details of their child's experience and could underestimate their distress. Moreover, the parent's own experiences and reactions can influence the understanding of their child's reactions.

## Implications for Disaster Mental Health Service Design

Disaster mental health services should include the capacity to provide assessment, referral, and interventions for family members. Because families provide valuable support for children, addressing the disaster reactions of adult survivors can benefit children, even if the children are not the focus of intervention. Given the challenges of providing mental health services post disaster, practitioners should know that treating parent's disaster reactions, even without a direct focus on children's symptoms, could benefit children. Of course, this does not eliminate the need to intervene directly with symptomatic children when necessary.

Interventions for children can be delivered to children using individual, group (including school-based), and family approaches. Child interventions commonly include a parent component to provide information, address the parents' reactions, and offer guidance to help with children's needs.

## In Conclusion

Children rely on their parents for support after disasters, and children and parents react to similar stresses and to each other's reactions. Thus, the evaluation and support of disaster survivors and their children should consider the family context. Survivors should be asked about their children's disaster experiences, reactions, and recovery, and assessments of children should consider their parents' disaster exposure and reactions. By recognizing these interconnections, we can begin to help reduce the suffering that may follow disaster.

## Suggested Tools

### Helping Children Cope

**U.S. Department of Homeland Security**

Guidelines for parents to help children cope with disaster, including responses to frequently asked questions about coping at different developmental stages.

### Helping Children Cope with Disaster

**Federal Emergency Management Agency and American Red Cross**

Booklet that offers parents and caregivers suggestions on how to help children cope with the effects of disaster, as well as how to be prepared before a disaster strikes.

### Listen, Protect, and Connect: Psychological First for Children and Parents

**Federal Emergency Management Agency**

Guide designed for families, neighbors, co-workers and first responders to provide psychological first aid after a disaster.

### About the Authors

Betty Pfefferbaum is a George Lynn Cross Research Professor Emerita in the Department of Psychiatry and Behavioral Sciences in the College of Medicine at the University of Oklahoma Health Sciences Center in Oklahoma City, Oklahoma. She is internationally recognized as a leader in child disaster mental health research and its application to clinical and public health practice and disaster interventions.

Carol S. North serves as medical director of the Altshuler Center for Education & Research at Metrocare Services and holds the Nancy and Ray L. Hunt Chair in crisis psychiatry as a professor of psychiatry at the University of Texas Southwestern Medical Center in Dallas, Texas. She specializes in research in disaster mental health epidemiology, community mental health, and psychiatric nosology.



Pfefferbaum, Betty and Carol S. North. 2019. "How Parent Mental Health Can Affect Children After Disaster." *Research Counts*, Special Collection on Children and Disasters. 3(SC3). https://hazards.colorado.edu/news/research-counts/special-collection/how-parent-mental-health-can-affect-children-after-disaster

# Safe Spaces: Creating a Culture to Support Infant Feeding in Shelters

**By Sarah DeYoung**

### Implications for Public Health

Provide safe infant feeding in shelters and access to maternal, reproductive, and mental health care for families.

Disasters and emergency evacuations can pose feeding difficulties for the mothers of infants and young children, but these challenges can be mitigated—often with nothing more than awareness, some logistical thinking, and a little space.

Although many women choose to breastfeed their children, our research has found that caregivers often report significant challenges when attempting to continue to breastfeed after disaster evacuations. The issue appears to be global. For instance, mothers who fled the Fort McMurray Wildfire in Canada and mothers forced to relocate after the 2015 Gorkha earthquake in Nepal reported that issues such as stress and distribution of formula did not support breastfeeding.

These challenges can be rooted in more than one cause. Some mothers and volunteers mistakenly believe that breastmilk will dry up after a disaster or other high-stress events, or—in some cultural belief systems—that it might be cursed. Others think that if their own nutrition is compromised during the evacuation, it can adversely affect the nutrition of the breastmilk. Some have been separated from their support systems. And some simply need access to space and supplies (such as clean bottles) for safe feeding.

Caregivers who fed children formula also reported challenges in shelters after evacuation. For instance, in the Fort McMurray Wildfire study, respondents cited limited availability of nutritious food for toddlers, private space, and specific types of formula among the problems they faced when feeding.

Previous research suggests that pregnant women and postpartum mothers—and their partners—are at risk of developing depression and anxiety, and that stressful life events can increase that risk. Not surprisingly, research also points to increased prevalence of post-traumatic stress disorders after disasters.

A few simple steps, though, make it possible to avoid adding these symptoms to the public health burden after disasters—and to help the parents of infants and young children in the process. Some helpful measures include:

- Provide medical assessments of pregnant women, new mothers, infants, and toddlers as they arrive at shelters.
- Provide safe, quiet, and private space specifically for breastfeeding.
- Keep families together.
- Reassure caregivers that they can and should continue to breastfeed.
- For families that use infant formula, provide instructions, clean water, and space for sanitary preparation. Be prepared to supply those families with specific (e.g., milk-free or soy-free) formulas during protracted events.
- Ensure that pregnant women and lactating mothers have extra hydration. If possible, provide additional nutritious food as well.
- Provide space and supplies to bathe infants and children.
- Provide culturally appropriate complementary food for young children who have begun eating solid food.
- Plan for differences between cultures. Cultural practices may influence daily routines such as cooking, sleeping, and other activities.

- Screen for postpartum depression, anxiety, and PTSD among evacuees and families seeking shelter. Provide on-site services and concrete actions for follow-up care.

When public health practitioners and emergency managers work together to implement straightforward guidelines they can meet infant feeding needs in shelters. Access to maternal and reproductive health care should be a foundation in mass care after hazards and in crises scenarios.

## Suggested Tools

**Infant and Young Child Feeding in Emergencies**
**United Nations High Commissioner for Refugees**
Comprehensive manual on infant feeding in disasters and emergencies.

**Pregnant Women in Disasters and Emergencies: Health Information Guide**
**Disaster Information Management Resource Center**
Collection of articles related to pregnant women's health in disasters.

**Food Safety for Infants After a Disaster**
**Centers for Disease Control and Prevention**
Guidelines for safe infant feeding practices after a disaster.

### About the Author

Sarah DeYoung specializes in protective action decision-making in disasters and policy change after disasters. Her additional research areas include infant feeding in disasters, pet evacuation, refugee well-being, weather warnings, and disaster preparedness. DeYoung has a PhD from North Carolina State University in applied social and community psychology.

DeYoung, Sarah. 2019. "Safe Spaces: Creating a Culture to Support Infant Feeding in Shelters." *Research Counts*, Special Collection on Children and Disasters. 3(SC4). https://hazards.colorado.edu/news/research-counts/special-collection/safe-spaces-creating-a-culture-to-support-infant-feeding-in-shelters

# Evacuating Under Fire: Children with Special Healthcare Needs in Disaster

**By Laura M. Stough and Elizabeth McAdams Ducy**

## Implications for Public Health

Planning for children with special healthcare needs and their families can help mitigate the negative impact of disasters. Emergency kits and emergency plans are necessary for all families, and especially important for families of children with these needs.

As wildfires raged through California, Paul—a preschooler with asthma and developmental disabilities—was home from school recuperating from a recent illness. Later that night, however, the fires advanced and his mother had to make the decision to evacuate.

In the rush, she grabbed some needed items, such as his inhaler, but left other health-related equipment and supplies behind. Although Paul's mother had prepared to shelter-in-place in the event of an earthquake, she did not have a plan for evacuating quickly, nor for being away from home for an extended period of time. As it turned out, the family was displaced for almost two weeks and were forced to move to multiple temporary housing situations, including hotel rooms and friends' homes.

While displaced, Paul's mother faced challenges such as pureeing his food without a blender and improvising a makeshift air purifier. Unfortunately, though, Paul's health rapidly deteriorated and he required multiple doctor visits. Physicians determined that smoke from the fires was exacerbating his preexisting health issues and they admitted him to the hospital. Paul missed more than a month of school because of his prolonged hospital stay, which then led to a decline in his behavioral, academic, and communication skills.

Paul is part of a study we are currently conducting on the experiences of children with special health care needs (CSHCN) during the California wildfires. His plight highlights the many difficulties that families with children with disabilities face during evacuation and sheltering.

The U.S. Department of Health and Human Services defines CSHCN as "those who have or are at increased risk for a chronic physical, developmental, behavior, or emotional condition and who require health and related services of a type or amount beyond that required by children generally." It is estimated that nearly 20 percent of U.S. children under 18 have special health care needs such as asthma, cerebral palsy, anxiety, allergies, or epilepsy. Many CSHCN have difficulties with functions such as mobility, communication, or breathing that affect their daily activities.

Studies report that most CSHCN families are under prepared for disasters. These findings are concerning since these children often require special equipment, supplies, or medical care—access to which can be disrupted by environmental hazards or other emergencies. Research on CSHCN impacted by Hurricane Katrina found children not only experienced greater disruptions in medical care, but also sought care for new health problems more often and were more likely to develop secondary health problems than other children.

When rapid evacuation is required, as in Paul's case, preparedness for CSHCN is particularly critical. These children can require specialized medical care, as well as durable medical equipment that must be evacuated along with them. When items such as wheelchairs, communication boards, special foods and supplements, oxygen machines, and assistance animals are not arranged for, the health and daily functioning of CSHCN can be negatively affected. Packing and accounting for these supports can be daunting, both during rapid evacuations or even when families have a longer timeframe to evacuate, such as in advance of hurricanes.

Once evacuated, CSHCN families face another set of obstacles. Often, after reaching a public shelter, hotel, or other temporary housing, accommodations and structural needs for their children are not present. In addition, as families transition to different temporary living spaces—as they often forced to do multiple times during disasters—their needs are often overlooked by

voluntary agencies when they lose track of these families. As a result, CSHCN families experience stress in addressing their children's critical health and functional needs on their own, while simultaneously dealing with the many challenges of a temporary living situation. More collaboration among voluntary agencies, disability organizations, healthcare providers, and hospitals is essential to help these families get needed supplies, equipment, and support during emergencies.

Even when not required to evacuate, sheltering in place during hazards—during a tornado or an ice storm, for instance—brings its own challenges. While most preparedness guidance suggests storing three to five day's worth of food, water, and medicine, a severely impacted area can take longer to provide the specialized care and supplies that CSHCN require, suggesting that it might be particularly important for these families to prepare for even longer.

Steps are being taken to help CSHCN families become better prepared for environmental hazards—but there is still much more to be done. For instance, one intervention that proved highly successful involved healthcare providers distributing a disaster starter kit that included emergency health form to CSHCN families, which in turn promoted additional preparedness actions. Checklists for emergency kits can also be useful. There have also been public health interventions successful in increasing family preparedness by educating parents or incorporating preparedness into patient treatment plans. These types of interventions, however, are not yet widespread or regularly included into systems of care. Future interventions should translate and evaluate evidence-based practices to promote preparedness among CSHCN families.

Another promising technique is for teachers of students with disabilities to provide support to and communicate with families during disasters—but teachers are not typically trained to fulfill this role during emergencies. In addition, schools and childcare facilities do not consistently address the evacuation needs of CSHCN in disaster.

Another issue in play is that children with disabilities are often not included in emergency planning or training, which could increase their level of vulnerability when away from their parents. A case study of children with disabilities who experienced the 2010 Canterbury earthquakes found they had overall good understanding of potential hazards as well as actively participated in emergency preparedness. Although increased attention is being directed toward the disaster experiences of people with disabilities, evidenced-based interventions that include children with disabilities remain extremely limited.

Children are heavily reliant on family members and care providers to plan for evacuation- and children with disabilities or special health care needs are doubly so. Additional resources and response efforts that recognize the needs of CSHCN and their families, such as of Paul and his mother, can help mitigate the stress experienced by these families during evacuation and sheltering.

## Suggested Tools

**Emergency Information Form for Children with Special Healthcare Needs**
**American College of Emergency Physicians**
Patient-specific emergency information form for children with special healthcare needs.

**Emergency Kit Checklist for Families with Children and Youth with Special Healthcare Needs**
**Centers for Disease Control and Prevention**
Checklist of items to include in an emergency kit for families with children and youth with special healthcare needs.

**Getting To Outcomes Guide for Community Emergency Preparedness**
**RAND and University of California Los Angeles Center for Public Health and Disasters**
Comprehensive guide to implementing evidence-based public health interventions in emergency preparedness.

### About the Authors

Laura M. Stough is an associate professor of educational psychology at Texas A&M University and director of Project REDD. She serves as the assistant director at the Center on Disability and Development and is a faculty fellow at the Hazards Reduction and Recovery Center at Texas A&M University. Stough conducts research on the psychological and social impacts of disaster on people with disabilities and their families.

Elizabeth McAdams Ducy is a lecturer in special education at Sonoma State University. She completed her doctorate in educational psychology and was a trainee with the Center on Disability and Development at Texas A&M University. Her research has addressed loss and trauma in people with developmental disabilities. Most recently, Ducy explored the experience of families of children with disabilities impacted by the 2017 Northern California Wildfires.



Stough, Laura M. and Elizabeth McAdams Ducy. 2019. "Evacuating Under Fire: Children with Special Healthcare Needs in Disaster." *Research Counts*, Special Collection on Children and Disasters. 3(SC5). https://hazards.colorado.edu/news/research-counts/special-collection/evacuating-under-fire-children-with-special-healthcare-needs-in-disaster

Photo credit: Matt Jeppson

# Kids First: Children as Bellwethers of Recovery

**By David Abramson**

## Implications for Public Health

Reopening of schools after disaster restores routine and gives displaced families a reason to return. By prioritizing children's welfare after disasters, it is possible to accelerate everyone's recovery.

The night after a powerful 2011 tornado devastated Joplin, Missouri, C.J. Huff was having a hard time sleeping. Huff, superintendent of Joplin schools, was wedged on a folding cot in a makeshift emergency operations center in one of the few school buildings left unscathed by the storm. He'd been up for 44 hours straight and he had to meet with his executive team the next morning to plan for the upcoming academic year, which was just under three months away. Huff quickly scratched out a two-sentence agenda: "The Impossible Goal: School starts in 84 days. Let's get to work."

The storm had killed 162 people, including seven schoolchildren, and destroyed a third of the town's housing. Six of the town's ten school buildings—more than 600,000 square feet of educational space—were either demolished or badly damaged. Still, when Huff presented this wildly ambitious goal to his senior staff the following morning, they all gave their bleary-eyed assent.

Huff eventually had his maintenance crew salvage a scoreboard from the wreckage of a school stadium and converted it to a huge countdown clock that ticked off the days, hours, and minutes to the moment that school would open. Beneath the clock were the words, "The race is on."

Joplin's urgency to restore its schools wasn't merely an educational imperative; it was a conscious decision to place its children first. If the children were settled in to a normal routine the rest of the community could attend to the larger task of rebuilding the town. Everyone was invested in this particular goal. While it might not have been obvious at the time, when Joplin chose to prioritize rebuilding its child-serving institutions, it chose to accelerate the recovery of the entire community.

Several years ago, as my colleagues and I considered the plight of children and teenagers affected by Hurricane Katrina, we hypothesized that children are a bellwether of a community's recovery—if they've recovered, it is likely that many of the formal and informal systems in a community have recovered, as well. Conversely, if they have not recovered, it is because the community's systems are still disrupted.

Our reasoning was that children are the largest group who are wholly dependent on others for their welfare. Children are dependent on their parents and caregivers, who are in turn dependent on a long list of systems: housing systems, critical lifeline systems, health and human services systems, educational systems, and a variety of social support systems. It is as if children are the final domino in a long line, standing only when the others stand as well.

In the 1970s and 80s, psychologist Urie Bronfrenbrenner diverged from the then-common focus on the the family as the key predictor of a child's development, and instead looked at the impacts of various ecological systems in a child's life—parental employment, hospitals and day care systems, kinship and friendship networks, and of course, schools. We extended Bronfrenbrenner's argument to encompass that, if these systems are important for everyday childhood development and growth, then certainly their reconstruction—and the order in which it occurs—is critically important for recovery from a collective trauma.

Rebuild the schools, and children can return to a routine, particularly one that trains and promotes them to the next stage in their lives. Rebuild the schools, and displaced families will have a reason to return, parents can focus on reconstructing their lives, and one of the community's most important economic engines, its school district, is brought back to life. Our Katrina research and later work on the impacts of the 2010 Deepwater Horizon Oil Spill suggests that many of these extra-familial factors play a role in children's well-being, including the social disorder in a community (which exerts a negative influence on

children's mental health), as well as the number and type of civic and social institutions that re-open in the community (with "pro-social" institutions exerting a positive effect).

Joplin did open its schools on time that August, with a vacant shopping mall serving as the high school and many other temporary spaces filling in as classrooms. Displaced students were bussed from neighboring towns and emergency housing. This re-opening of the Joplin schools provided communal meaning and purpose to a traumatized population, and it allowed Joplin residents to exercise what scholar Fran Norris and colleagues referred to as networked adaptive capacities, using their collective social and economic capital to adapt to the widespread destruction by quickly rebuilding the schools.

More than that, however, was that Huff's instinctual understanding of the need to concentrate on the reconstruction of schools—its most critical child-serving institution—provided a clear goal for community recovery by prioritizing children's welfare. It is a lesson worth considering for any community confronted with a collective trauma—by putting children first, it may be possible to accelerate everyone's recovery.

## Suggested Tools

### Disaster Recovery Tracking Tool

**U.S. Department of Homeland Security Science and Technology Directorate and the Federal Emergency Management Agency**

A web-based resource that local government stakeholders and others can use to track the quality and progress of disaster recovery

### Children and Youth Task Force in Disasters: Guidelines for Development

**U.S. Department of Health and Human Services Administration for Children and Families**

Guidelines for considering children and youth's needs in disaster preparedness and response.

### About the Author

David Abramson is a clinical associate professor of social and behavioral sciences at the New York University College of Global Public Health and the director of the Population Impact, Recovery and Resilience (PiR2) research program. Abramson is currently directing a longitudinal Hurricane Katrina cohort study, partnering on a climate resilience project with a community housing agency in East Boston, and collaborating on the development of performance metrics for public health emergency preparedness.

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# Educational Continuity: The Role of Schools in Facilitating Disaster Recovery

**By Jennifer Tobin**

### Implications for Public Health

Because schools are integral to communities, it is important that districts work in partnership with public health, emergency management, and other community leaders to develop emergency operations and continuity plans.

Research shows that when adequately prepared, schools can and do buffer the negative impacts of disaster. My research examined how one Colorado school district kept more than 700 children together—rather than splitting them apart—when the 2013 Colorado Front Range Floods made their schools inaccessible.

Aside from family, schools are the primary source of social influence and protection in a child's life. Schools provide nutrition, transportation, physical and mental health care, opportunities for peer-to-peer and adult-to-child relationship building, curriculum-based education, and free childcare. School buildings are also one of the only places—outside of detention facilities and courtrooms—that children and youth are legally required to be in the United States. Given this, many people assume that schools can and will protect children during extreme events.

Yet, the reality is that safety of children is often threatened due to aging school buildings and a lack of resources. When disasters inevitably do strike—and students need school-based services more than ever—they are often interrupted or discontinued indefinitely.

Missed school days have been identified as a leading contributor to the vulnerability of children, families, and their communities. Children and youth who are displaced from school for extended periods because of disaster tend to have higher dropout rates, increased criminal activity and lower grades, and may suffer from other educational, physical, psychological, and behavioral problems. Therfore it is imperative that school districts create and practice both emergency operations and continuity of operations plans to limit the number of school days missed after a disaster.

In my work, I define educational continuity as a process in which leaders from schools, school districts, and the community work together to continue providing education and all other school-based services for students following a disaster. My research identified three major strategies employed by the St. Vrain Valley School District in Colorado that contributed to a successful educational continuity process for Lyons schools:

## Sufficient Capital and Capacity

The school district administrators dedicated time, money, and human capital to creating, practicing, and carrying out school emergency operations plans. It is critical for school districts—and the public funding mechanisms that support them—to invest in emergency management through financial resources and trained personnel. The success story from Lyons was made possible, in part, because of the highly educated staff, full-time emergency manager, and a fiscal budget that was available to respond immediately before any additional financial support arrived.

## Robust Planning

Current national guidance on school preparedness highlights how important it is for schools to plan for recovery by creating Continuity of Operations (COOP) plans. These documents should include multiple strategies for educational continuity if disaster strikes. Although COOP plans are currently recommended, they are not mandatory nor enforced across the nation.

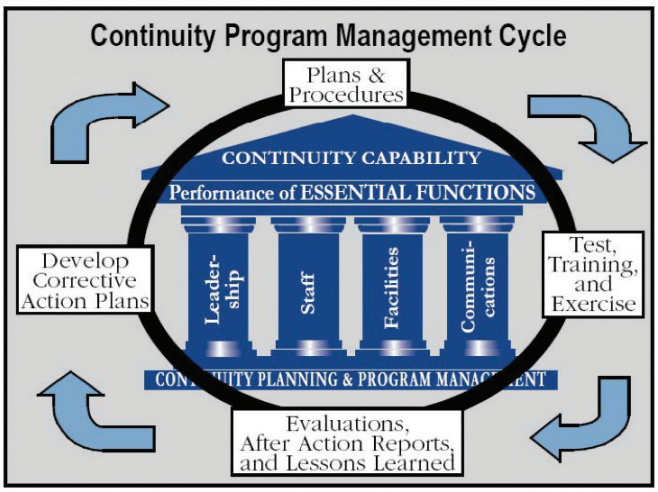


*Figure 1. The Federal Emergency Management Agency Continuity of Operations Program Management Cycle (FEMA 2018).*

## Strong Leadership and School Management

Four leadership and management practices were integral to the disaster response and educational continuity process in Lyons:

- Leading through distributed control
- Shared narrative focused on the dedication to students
- Well-established social bonds and community attachments
- Common values of trust, communication, and collaboration

Each of these focal areas did not operate in isolation, but rather built on one another and together created a context for success.

These findings are the result of data collected through an in-depth review of scholarly literature on school preparedness, school leadership and management, and children and disaster; interviews with 67 school administrators, community leaders, teachers, counselors, parents, and students; and the analysis of over 100 documents related to school safety and disaster.

It is critical that school districts draw from the most recent guidance on school preparedness to increase their capacity in disaster. There are many free resources available to help guide emergency managers, public health officials, and school representatives seeking to prepare for recovery through developing, updating, and practicing emergency operations and continuity of operations plans.

- *Presidential Policy Directive (PPD-8)*
- *Guide for Developing High-Quality School Emergency Operations Plans*
- *Safer, Stronger, Smarter: A Guide to Improving School Natural Hazard Safety*
- *Comprehensive School Safety*
- *Save the Children Disaster Report Card*
- *Continuity Resources and Technical Assistance*
- *Disaster Planning for Schools*

Although written plans are an important first step to emergency preparedness, they do not guarantee a successful response to and recovery from a disaster. For written plans to be successful, they need to be well-informed, practiced frequently, and shared widely with all those who may be impacted by an event—this includes children and families, school staff, emergency management personnel, public health professionals, and others. Plans need to be flexible and cover a wide range of hazards and emergencies that could potentially disrupt school district operations. And plans need to be updated regularly, which requires the commitment, time, labor, and monetary resources of school districts, many of which may struggle to balance emergency planning with higher priorities, such as classroom instruction time, teacher training, and academic achievement goals.

Despite the real inequities that exist in every society—and therefore permeate schools and student lives—my hope is that this research will encourage taxpayers and policymakers to invest in school systems so they can provide the response and longer-term recovery resources that disaster-affected students so desperately deserve. My research shows that it is possible to plan for better outcomes when you have the time, dedication, and financial support to do so. It is clear what the solutions are, it will just take the political will and equitable distribution of resources to achieve a more just recovery for students.

## Suggested Tools

**Guide for Developing High-Quality School Emergency Operations Plans**
**U.S. Department of Education**
Comprehensive guide to developing or revising existing school emergency operations plans.

**Safer, Stronger, Smarter: A Guide to Improving School Natural Hazard Safety**
**Federal Emergency Management Agency**
Comprehensive guide that provides up-to-date, authoritative information and guidance that schools can use to develop a comprehensive strategy for addressing natural hazards.

**Continuity Guidance Circular**
**Federal Emergency Management Agency**
Guidance on the integration of continuity concepts, a common foundation for understanding continuity, and the development of other tools and resources.

### About the Author

Jennifer Tobin is deputy administrator of the Natural Hazards Center, University of Colorado Boulder. Her dissertation focused on educational continuity following the 2013 Colorado Front Range Floods. Tobin administers the National Science Foundation (NSF)-funded Quick Response Grant Program, is engaged in the NSF CONVERGE initiative, is on the National Institute of Standards and Technology-funded Center for Risk-Based Community Resilience Planning research team, and is a working group member of FEMA P-1000 *Safer, Stronger, Smarter: A Guide to Improving School Natural Hazard Safety*.

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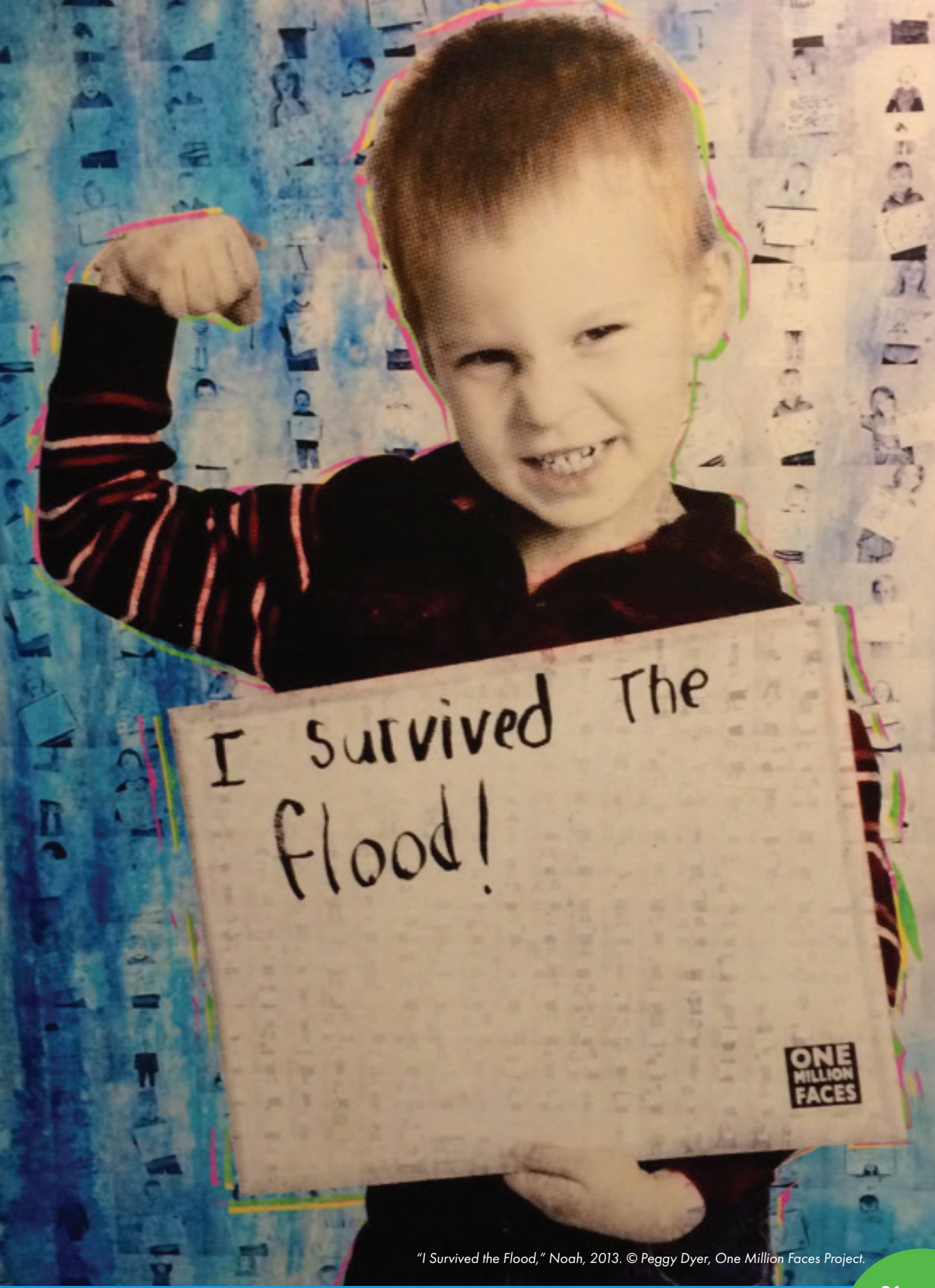


*"I Survived the Flood," Noah, 2013. © Peggy Dyer, One Million Faces Project.*

# Lessons Learned? Helping Students and School Personnel Recover from Disaster

**By Cassandra R. Davis, Sarah C. Fuller, Sarah R. Cannon, and Rex Long**

The primary mission of schools is to educate children—and this includes the obligation to instruct students before, during, and after a disaster. In the wake of a storm, schools must balance the need to educate students with the ability to provide them with recovery support. Schools that are able to provide academic and personal support to both students and teachers will be better equipped to quickly return to normal after a disaster.

### Implications for Public Health

School children and adult educators have many pressing needs in the aftermath of disaster. Mental health support and other resources should be targeted to students and school staff after disaster.

Hurricane Matthew came ashore on October 8, 2016 and generated massive flooding across a large area of eastern North Carolina. Data from the North Carolina Department of Public Instruction indicated that at least 600,000 students were impacted by the storm—that's 600,000 students at risk of experiencing the psychological issues and reduced academic achievement that research has shown can stem from children's exposure to hurricanes. We know that support from schools can lessen these issues, however, minimal research is available to guide educators on the types of support that work best.

In Spring 2018, we surveyed school and district personnel from 10 eastern North Carolina school districts that were severely affected by Hurricane Matthew. A total of 1,722 personnel representing 178 schools completed the survey. The fall after we conducted the survey, Hurricane Florence made landfall, impacting many of these same districts. These repeated disasters underscore the importance of understanding what support students and educators need during recovery.

The following summary of responses to three of our survey questions shed some light on what type of support was available after Hurricane Matthew, what educators found helpful, and what was missing during the recovery process.

## What support was provided to students and educators following Hurricane Matthew?

Participants perceived that a much wider array of support was available to students than to school and district personnel. Most indicated in the survey that their school was closed for approximately two weeks. It is therefore perhaps unsurprising that adjustments to the regular school calendar were the most frequently identified type of support provided to both students and personnel. Calendar adjustments typically took the form of missed school days that were either made up later in the year or "forgiven" by the state legislature. Other forms of support available to students and school personnel—as identified by the school and district personnel who completed the survey—are listed in Table 1.

| Support Provided | Perceived Support Available to Students (%) | Perceived Support Available to Personnel (%) |
|---|---|---|
| Adjustment to the school calendar | 86 | 74.8 |
| Personal supplies | 56.8 | 8.8 |
| School supplies | 56.1 | 8.4 |
| Emergency housing | 41.8 | 6.0 |
| Free meals | 35.5 | 6.0 |
| Referrals to agencies | 35.1 | 5.5 |
| Financial support | 34.5 | 4.5 |
| Transportation | 33.9 | 1.9 |
| Mental healthcare providers | 33.3 | 4.2 |

*Table 1. Types of support offered after Hurricane Matthew and the percentage of survey participants who identified such support as available to students or personnel.*

## Of the support identified, what was the most beneficial?

Among the types of support available, participants identified emergency and temporary housing as the most beneficial support for students. Adjusting the school calendar and providing free meals also ranked high as beneficial for students.

Participants also indicated that modifying the academic calendar was the most beneficial way to support school and district personnel, followed closely by school relocation and the launching of emergency response plans. See Table 2 for further information.

| Ranking by Level of Benefit | For Students | For School and District Personnel |
|---|---|---|
| 1 | Emergency/temporary housing | Adjustment to the school calendar |
| 2 | Adjustment to the school calendar | School relocation |
| 3 | Free meals | Emergency response plan |
| 4 | Personal supplies | Financial support |
| 5 | Emergency response plan | Emergency/temporary housing |

*Table 2. The top five items educators ranked as most beneficial for students and personnel.*

## What support was missing?

Finally, and as shown in Table 3, participants identified the types of support they felt were missing after the hurricane. The support most commonly identified as missing for both students and personnel included access to mental healthcare providers, financial support, and free meals.

| Rank by Missing Items | For Students | For School and District Personnel |
|---|---|---|
| 1 | Amended policies for student achievement | Financial support |
| 2 | Mental healthcare providers | Free meals |
| 3 | Medical healthcare providers | Personal supplies |
| 4 | Financial support | Mental healthcare providers |
| 5 | Free meals | School supplies |

*Table 3. The top five items commonly identified as missing for students and school personnel.*

## Conclusion

It is imperative for educators, policy makers, and interested stakeholders to assist schools recovering from reoccurring hurricanes. Although students receive a wide range of support after a disaster, educators facing the same impacts are often left to address their personal and professional needs alone. Further support from mental healthcare professionals could assist both students and educators to recover faster and return to school. Moreover, taking a systems approach to trauma-informed schools can help students, staff, administrators, and families recover more effectively from disasters.

Teachers spend so much time teaching lessons to others, it is important that we learn lessons from them after disasters.

## Suggested Tools

**Creating, Supporting, and Sustaining Trauma-Informed Schools: A System Framework**
**National Child Traumatic Stress Network**
Framework for creating a trauma-informed school environment that addresses the needs of students, staff, administrators, and families who could be at risk for experiencing the symptoms of traumatic stress.

### About the Authors

Cassandra R. Davis is a research assistant professor in the Department of Public Policy at the University of North Carolina at Chapel Hill. Davis continues to collaborate with schools on the best ways to recover from a natural disaster. Her current areas of interest include education policy, the impact of natural disaster on schools and communities, program evaluation, qualitative research methods, and social and historical context in education.

Sarah C. Fuller is a research assistant professor in the Department of Public Policy at the University of North Carolina at Chapel Hill. She has published research on the effect of natural disasters on educational outcomes using administrative and school-level data. Fuller has research interests in education policy, early childhood development, social stratification, and quantitative research methods.

Sarah R. Cannon is a research consultant based in Washington, D.C. with a PhD in public policy from Northwestern University. Cannon's research interests include school and community relationships and mixed-methods research. She also specializes in protocol development and conducting interviews with school-level personnel.

Rex Long is a research associate at Gibson Consulting Group and holds a master's in anthropology from Texas State University. In his work at Gibson, Long has supported the development of interview and focus group protocols and the collection of qualitative data. His research interests include using qualitative research methods to uncover impacts to vulnerable populations in the context of education.



Davis, Cassandra R., Sarah C. Fuller, Sarah R. Cannon, and Rex Long. 2019. "Lessons Learned? Helping Students and School Personnel Recover from Disaster" *Research Counts*, Special Collection on Children and Disasters. 3(SC8). https://hazards.colorado.edu/news/research-counts/special-collection/lessons-learned-helping-students-and-school-personnel-recover-from-disaster.

*@James Johnson, Houston, Texas, 2005.*

# On the Road to Routine: Disruption and Recovery After Hurricanes

**By Cassandra R. Davis, Sarah R. Cannon, Sarah C. Fuller, and Rex Long**

### Implications for Public Health

Disasters can destroy school buildings and disrupt routines for extended periods of time. Mental health services should be provided in schools in the immediate aftermath of disasters, as well as in the longer term.

Reopening schools is a crucial step for many communities recovering from a disaster. Even after schools are operating regularly, the disaster can continue to affect students and teachers. Returning to classroom routines can provide a sense of normalcy and support broader recovery efforts.

The U.S. mainland receives an average of 18 direct hurricane strikes per decade. These storms frequently affect the most vulnerable populations and fragile structures, including schools in low-resource, high-poverty, and rural communities. Understanding how schools have been disrupted after a hurricane and the steps taken to restore routines can help communities prepare for future storms.

We studied the extent to which Hurricane Matthew in 2016 and Hurricane Harvey in 2017 impacted operations and recovery process for schools, students, and educators in North Carolina and Texas. Specifically, we interviewed school and district personnel in 54 schools recovering from hurricane exposure across 20 school districts in both states. Overall, participants identified the following three themes as necessary components for establishing a routine:

## Acknowledge the Disruption

Educators stressed the need to assess the level of disruption and displacement the hurricane created for students and school personnel. Understanding the scale of the hurricane's disturbance allowed educators to create a routine that would ultimately assist the school in moving ahead.

After a hurricane, there are a range of personal disruptions in the lives of students and teachers. Throughout our interviews, participants described situations where the storm affected their homes, food, clothes, toiletries, and household pets. To allow educators to further address their own personal recovery needs, many schools adopted a flexible approach to personal leave after schools reopened.

Physical damage to school buildings and supplies was a fundamental disruption for schools. Participants described the disarray storms caused their schools, indicating the hurricane impacted campus buildings, classroom supplies, and food. In some instances, educators experienced a total loss of their building, requiring a shift in location to continue classes and a delay as administrators tried to develop a strategy for the recovery of educational facilities. Some relocations split up grade- or subject-level teams, while others forced multiple classes to share the same space. Teachers indicated that they appreciated support in sorting through donated supplies and setting up classrooms in these alternate locations.

Displaced students, relocated schools, and flooded roads disrupted transportation plans in both study locations. With flooded roads and debris-covered highways, the process of getting students to and from school became another form of disruption. In some cases, schools transported displaced students beyond the geographic borders of their district. Schools needed to track where students were residing in order to provide transportation to school. Establishing personal communication with families early after the storm helped schools stay current on student addresses and living situations.

## Adjust Teaching Strategies

School closures reduce instructional time for students. Many of the participants' schools were closed for two weeks or longer after the hurricane. Respondents stated that most of the days missed were not made up later in the school year but "forgiven" by state legislatures. Participants reported that they had to adjust the flow and delivery of their curriculum to accommodate missed class time and to respond to additional needs of students. This was further complicated by uncertainty about which state accountability standards would be enforced the following year. In general, the educators expressed the need for guidance about how to adapt their lessons to the compressed calendar.

Extended school closure can disrupt classroom routines to the point where it impedes students' ability to learn. Participants reported that to be the case, even in light of the fact that they were still establishing classroom routines when the hurricanes struck. Participants emphasized the need to establish conventions in the classroom to create an environment where students could learn.

## Provide Mental Health Support

Supporting the emotional well-being of students and school personnel was of vital importance to participants, who reported both groups experienced issues such as weather-related anxiety, depression, post-traumatic stress, exhaustion, and survivor's guilt after the hurricanes.

Participants acknowledged the quick response from mental health providers immediately after the storm. However, many felt mental health support was missing in the weeks and months following the disaster, as new stresses and strains began to emerge. In some isolated cases, principals addressed this to some degree by allowing unstructured periods to be used for educators and students to discuss the emotional impact of the storm and begin the healing process. Longer-term mental health support was rare and in some instances, non-existent.

## Conclusion

Throughout our interviews, participants emphasized the importance of schools returning to a typical routine in assisting with community recovery. After the storm, schools acknowledged the disruption of people's day-to-day lives and the need for them to be leaders in restoring operations. When schools are functioning, they provide a space to take care of students and the opportunity to support families.

For schools to be successful in their recovery efforts, they need support from community organizations, education agencies, and emergency managers. Schools that had previously existing relationships with these partners were positioned to communicate their needs during recovery. Establishing these relationships before disaster strikes can help schools, and their communities, return to routine after the hurricane.

## Suggested Tools

**Public Assistance Program and Educational Facilities Frequently Asked Questions**
**Federal Emergency Management Agency**
Comprehensive guide to developing or revising existing school emergency operations plans.

**Teacher Guidelines For Helping Students After A Hurricane**
**The National Child Traumatic Stress Network**
Guidelines for teachers for helping students after a hurricane event.

### About the Authors

Cassandra R. Davis is a research assistant professor in the Department of Public Policy at the University of North Carolina at Chapel Hill. Davis continues to collaborate with schools on the best ways to recover from a natural disaster. Her current areas of interest include education policy, the impact of natural disaster on schools and communities, program evaluation, qualitative research methods, and social and historical context in education.

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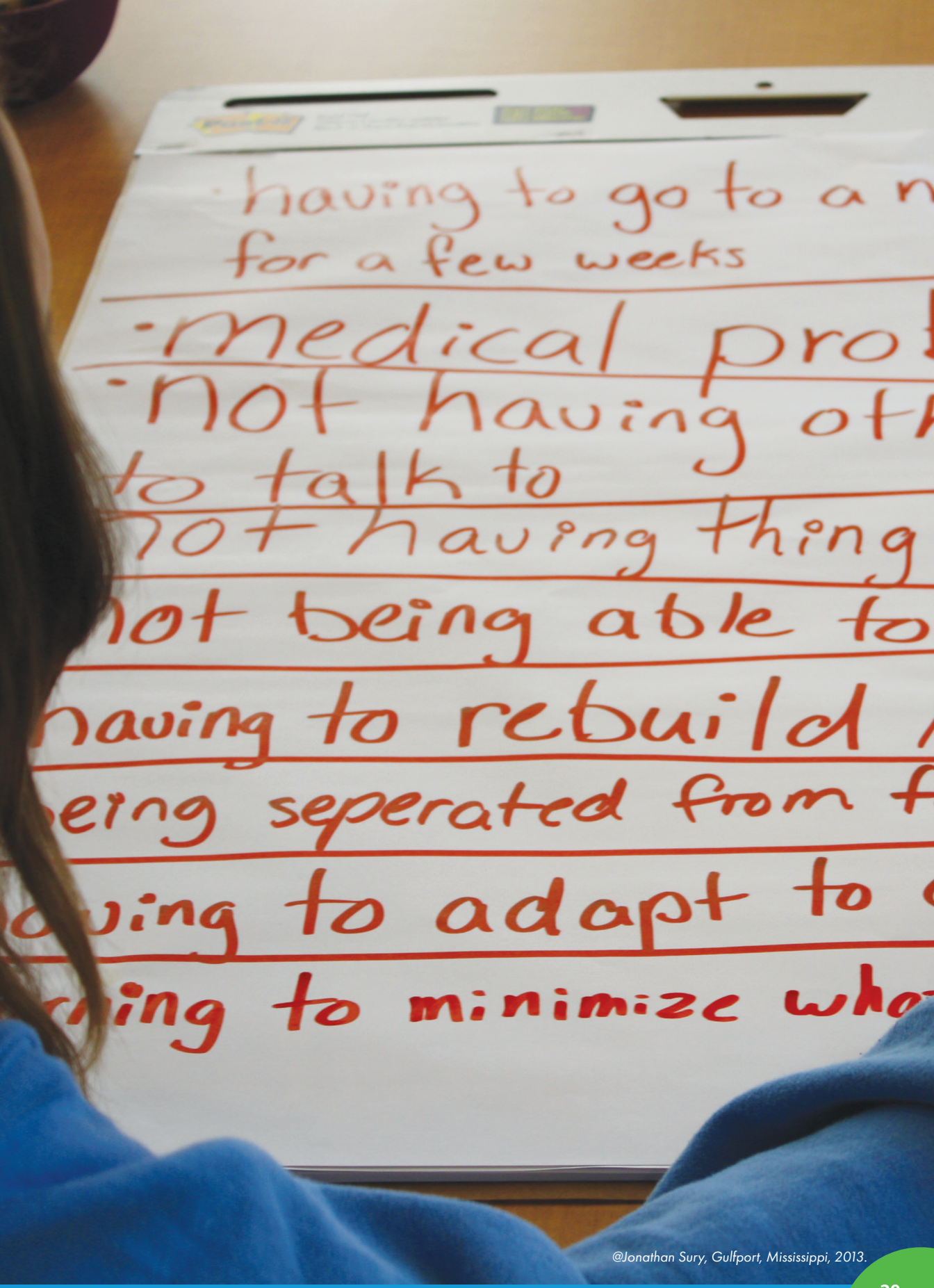
Davis, Cassandra R., Sarah R. Cannon, Sarah C. Fuller, and Rex Long. 2019. "On the Road to Routine: Disruption and Recovery After Hurricanes." *Research Counts*, Special Collection on Children and Disasters. 3(SC9). https://hazards.colorado.edu/news/research-counts/special-collection/on-the-road-to-routine-disruption-and-recovery-after-hurricanes




*@Jonathan Sury, Gulfport, Mississippi, 2013.*

*"What Katrina Looked Like," Alex, age 9. ©Lori Peek, 2007.*

# Supporting Children in All the Spheres of Their Lives: Lessons from Katrina

**By Alice Fothergill and Lori Peek**

Following Hurricane Katrina in 2005, we embarked on a seven-year study of the recovery experiences of children and youth from New Orleans. We believe the lessons from Katrina can help public health practitioners and emergency managers now. Indeed, what we learned from those young people, their families, and their teachers can be of use to those providing aid and assistance to the children affected by recent major disasters.

### Implications for Public Health

Help children recover from disaster by addressing the ongoing simultaneous needs in all spheres of their lives–including family, housing, school, friendship, extracurricular activities, and health and well-being.

In the spirit of assisting the most recent survivors, we offer six groups of recommendations that came out of our research. These are based around what we refer to as the "spheres" of a child's life. In each section, we highlight actionable recommendations for professionals and caregivers to help children after a disaster.

## Family

Children who have experienced a hurricane or other disaster need routines and predictability in their family life. They also need compassionate and age-appropriate coping support since they might also be dealing with other simultaneous crises, such as divorce or illness in their families. Children whose families have fewer resources are especially in need of these forms of support, information, and opportunities. Single parents—often mothers—also need additional support during displacement, such as trustworthy childcare services. Mounting research suggests that when parents are coping in healthy ways, it helps children to recover as well.

Children who are displaced also need clear, meaningful information about their extended family members. Ideally, they should have a chance to communicate with them and be reassured that their displaced family members are safe and that they will see them again. Having a reunification plan is especially important for families and communities.

## Housing

In temporary shelters, children need child-friendly spaces to rest, play, and study and adults should be present to protect and comfort them. Shelters also need to consider the feeding needs of infants and young children; the safety of girls, boys, and transgender children and youth; and privacy for all kids. Whenever possible, it is beneficial to offer outdoor spaces for children to play in both shelters and temporary housing sites, and community leaders should be cognizant of accessibility issues for children with disabilities.

As the recovery and rebuilding process begins, we recommend that housing assistance be a funding and policy priority, especially for low-income renters. Temporary housing should be carefully screened for the health and safety of children and youth, who are physically more susceptible to mold and toxins. Displaced residents—including children and youth—should have a voice in communicating and shaping post-disaster housing options.

## School

Schools should have a comprehensive strategy for natural hazards and a plan for other potential disasters to ensure an effective response when the unthinkable happens. After a disaster, affected children need to resume their education and get back to a predictable school routine as soon as possible, which means that planning for educational continuity is paramount.

Schools can offer optional peer-oriented and/or peer-led groups and should ensure that licensed professional counselors, social workers, and school therapists are available to help on-site. Training school staff to provide mental and behavioral health support to students and to recognize signs of distress is highly valuable. Lesson plans and assignments can be designed to engage students in projects relevant to their lives (such as risk mapping) and support them emotionally (such as with art therapy).

Children and youth need opportunities to help others, and schools can provide them with chances for projects such as service learning, fundraising, community action, or mentoring. Teachers may also be recovering from the disaster, and so short- and longer-term support for them is also important.

## Friendship

The importance of friends and peer groups during displacement is often overlooked and should be recognized and supported. Adults can support these important relationships and if possible help children locate and reconnect with their friends in the aftermath of disaster, as their friendships can help them feel connected and secure. Furthermore, adults should remember that missing crucial milestones, such as proms and class trips, can be upsetting for children, as these are events that they share with their closest friends and peers.

Helping children communicate with their old friends—via phone calls, visits, texts, or social media—can lessen fears and concerns about their friends' well-being. As children and youth find themselves in new, unfamiliar surroundings, they may also need help adjusting to new peer groups and making new friends, so matching them with classmates in their new schools through "buddy programs" can be helpful. We also found that the children of Katrina did many creative things to help other children, such as sharing poems or singing songs with friends, and this ultimately accelerated their own recovery.

## Extracurricular Activities

Children who are involved in sports, a religious institution, or organizations such as Scouts or 4-H Club can discover skills and strengths and develop social networks outside of family and school. In the aftermath of a disaster, children often lose access to such important extracurricular activities. As children either return to the disaster-affected neighborhood, or settle into a new place, they should have the opportunity to be involved in age-appropriate activities. To help facilitate that, they may need help with transportation, fees, and uniforms, among other things. Children and youth also benefit from being able to share their experiences through creative mediums, so providing them a space for writing, art, theater, and dance is recommended.

Children and youth can also get involved before disaster strikes and learn how to contribute effectively to emergency preparedness and response. There are many programs available such as the Pillowcase Project, Teen CERT, Ready Kids, and Prep Rally that are dedicated to engaging children of different ages in getting ready for disaster.

## Health and Well-Being

The emotional and physical health challenges, such as food insecurity and asthma during non-disaster times are a fundamental part of their recover. Health and well-being are not distributed equally—low-income children and children of color face more health challenges during non-disaster times, such as food insecurity and asthma, and have less access to affordable, high-quality health care. Additionally, factors like a child's age, hazard proximity, and exposure to disaster and other chronic threats can influence how a disaster impacts a child's health and well-being. Healthcare providers have a vital role to play in helping children before, during, and after disaster.

Children's physical and emotional health are interconnected, and they should receive care for both. Children need fresh air, exercise, and an environment free from environmental risks, such as spilled oil, sewage, asbestos, black mold, mildew, and contaminated soil. Their exposure to hazardous materials in the rebuilding process should be limited as much as possible. Since disaster effects are often enduring, children need access to long-term emotional assistance.

## All the Spheres of Children's Lives

Children, and especially the most socially disadvantaged children, may have simultaneous and ongoing needs in all spheres of their lives. As we watch the recovery from recent record-shattering disasters, we are reminded of how critical it is that attention be paid to the youngest survivors of disaster and that collectively we prioritize their needs.

*This article originally appeared in the Research Counts series on October 6, 2017. This is an updated version.*

## Suggested Tools

### Tips for Talking to Children and Youth After Traumatic Events
**Substance Abuse and Mental Health Services Administration**
Guide for parents and educators for talking to children and adolescents after a traumatic event.

### Post-Disaster Reunification of Children: A Nationwide Approach
**Federal Emergency Management Agency**
Guide for jurisdictions to enhance family reunification procedures as part of national preparedness efforts.

### Child Trauma Toolkit for Educators
**The National Child Traumatic Stress Network**
Provides guidance and information for school administrators, teachers, staff, and parents on working with traumatized children in the school system.

### Prep Rally
**Save the Children**
Save the Children tool kit that includes emergency preparedness games and activities for children in preschool, kindergarten, and elementary school.

### Pediatric Preparedness Resource Kit
**American Academy of Pediatrics**
Guidelines and information for facilitating collaboration and discussion between public health and pediatric leaders regarding pediatric emergency preparedness.

### Pediatric Disaster Preparedness and Response Topical Collection
**American Academy of Pediatrics**
Guide for health care providers who care for children in a disaster that includes information and best practices on a variety of topics, games, and activities.

## About the Authors

Alice Fothergill is professor of sociology at the University of Vermont. She is the author of *Heads Above Water: Gender, Class, and Family in the Grand Forks Flood*, co-editor of *Social Vulnerability to Disasters* (first and second editions), and co-author, with Lori Peek, of *Children of Katrina*.

Lori Peek is director of the Natural Hazards Center and professor in the Department of Sociology at the University of Colorado Boulder. She is principal investigator of the National Science Foundation CONVERGE initiative and author of *Behind the Backlash: Muslim Americans after 9/11*, co-editor of *Displaced: Life in the Katrina Diaspora*, and co-author of *Children of Katrina*. She also is a contributing author to FEMA P-1000 *Safer, Stronger, Smarter: A Guide to Improving School Natural Hazard Safety*.

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*"Something That Happened Because of Katrina," Chance, age 7. @Children of Katrina, 2015*

©Sgt. Rashawn Price, U.S. Army, 2012.

# Children, Distress, and Disaster: How Adults Can Help

**By Betty Lai and Ann-Margaret Esnard**

Hurricane Harvey highlights how quickly disasters can devastate whole communities. Children, however, need special attention because experiences of trauma and loss can be especially difficult for young survivors. Many young people have traumatic experiences during childhood. In the United States alone, a representative study of children ages 2-17 found that 14 percent reported having been exposed to a disaster. During and after disasters, children may experience scary events, such as needing to be evacuated from a flooded area. They may lose their possessions, and they may not be able to return to their homes.

### Implications for Public Health

Parents, caregivers, and teachers can take actions to help children cope with the disaster and minimize distress, including limiting media exposure, maintaining routines, and asking children how they're doing.

Social and behavioral scientists have firmly connected disaster exposure with clinically significant distress in children. This distress can include post-traumatic stress symptoms, depression, or anxiety. Post-traumatic stress symptoms could be flashbacks to the event, feeling upset or afraid at reminders of the event, avoiding interacting with friends, or having trouble with sleep. Depression could include experiencing intense sadness, crying, having difficulty engaging in school work, or feeling that nothing is fun or meaningful. Anxiety might include excessive worry, feeling afraid of many things, feeling sick to one's stomach, or worrying about future events.

## Do All Disaster-Exposed Children Report Distress?

Disasters are disruptive by their very nature. The good news is that many children are psychologically resilient after disasters. Recently, we reviewed eight studies of children's responses to disasters. Across those studies, between 37-79 percent of children were resilient and reported very few negative mental health symptoms. However, between 4 and 38 percent of children across the studies reported severe distress that did not go away over time. These severe distress symptoms sometimes stretched for two years beyond the disaster.

Children at highest risk for experiencing severe, chronic distress include those with histories that make them vulnerable. That could involve experiencing a past disaster, living in a violent community, or having a history of anxiety. The most vulnerable children are also those who experience multiple stressors during and after the disaster, such as having to be evacuated, witnessing destruction, or having to move multiple times. However, stressors that are not directly related to the disaster, such as a parent losing their job, matter as well. Research also shows that children who have severe distress initially after a disaster are more likely to report severe distress over time. As researchers, we are working to integrate findings across disasters so that we can be better prepared to quickly identify the most vulnerable children in future disasters.

## How Can Parents and Teachers Help Children Be More Resilient to Disasters?

In light of the body of research regarding children's trauma and distress, it is important to focus on what can be done to assist young people after disaster.

- Provide information, but make sure it is appropriate for your child's age. Withholding information about a disaster is scary for children. Children may start to think you are keeping secrets and that things are even worse than they appear.

- Limit media exposure. Exposure to graphic images in the media is linked to distress in children. Limit news exposure of the event so that you are able to monitor the images and information children see.

• Ask your children how they are doing. Do not assume that they feel the same way you do. Children's reactions do not necessarily match their parents' reactions.

• Bed-time routines are important. Get children back into their routines as soon as possible. This helps children feel like life is returning to normal. Examples of this include returning to schools when they reopen or returning to a bed time routine.

• Stay connected. Feeling connected to friends and family helps children become more resilient after a disaster. Find ways to help children stay in touch, especially if you have moved to a new location.

• Practice and model coping skills. Show kids many different positive ways to handle stress. Talk to them about what you are doing, and give them opportunities to practice coping skills. For example, "I am feeling really stressed right now about the insurance paperwork. I am going to get a cup of tea. I can come back to this in a little while. Would you like to have a cup of tea with me?"

• Seek help. Disasters are stressful events for everyone, particularly those who have had to evacuate or who are displaced and in limbo. Seek help for yourself or your child if the stress is interfering with your life.

• Encourage your children to take action. Engage youth in disaster preparedness and response activities so they feel a sense of control. For example, children can help develop family communication plans or volunteer to help community or family members in safe environment.

*This article originally appeared in the Research Counts series on September 9, 2017. This is an updated version.*

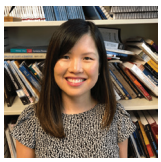
## Suggested Tools

**Tips for Talking to Children and Youth After Traumatic Events**
**Substance Abuse and Mental Health Services Administration**
Guide for parents and educators for talking to children and adolescents after a traumatic event.

**Helping Children Cope During and After a Disaster**
**Centers for Disease Control and Prevention**
Resource for parents and caregivers to help children cope after disaster and recognize symptoms of mental distress.

**Ready Wrigley Backpack Emergency Card**
**Centers for Disease Control and Prevention**
Emergency contact information card to keep in wallet and child's backpack.

### About the Authors



Betty Lai is the Buehler Sesquicentennial Assistant Professor at Boston College. Her work focuses on helping children prepare for, respond to, and adapt to stressors and adverse events. She has identified factors that place children at risk for negative outcomes and factors that help youth be more resilient. She and her colleagues are also examining how adverse events may impact schools. She is working to provide recommendations for how schools may prepare for such events and how they can support their communities.

Ann-Margaret Esnard is a distinguished university professor of public management and policy, and associate dean for research in the Andrew Young School of Policy Studies at Georgia State University. Her research delves into factors that cause people to be displaced from their communities, school recovery after disasters, long-term recovery, and community resilience. Her research is necessarily interdisciplinary and collaborative to tackle complex planning and policy problems.

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# Thriving After Disaster: A New Way to Think About Support Programs for Kids

**By Lisa Gibbs, Karen Block, Colin MacDougall, John Richardson, Alana Pirrone, and Louise Harms**

The unpredictability of disasters and emergencies can often leave young people adrift in the terror, loss, and ongoing disruption caused by such events. Research has shown this can have short- and long-term effects on their learning, mental health, and well-being. Thankfully, this research also underpins a framework for planning and reviewing post-disaster programs that support positive outcomes for children and youth.

## Implications for Public Health

There are many different ways to help children and teenagers process and recover from disasters. Recovery services should include all different stages of childhood and should restore a sense of safety and stability.

While research suggests that supportive environments can make a difference, evidence on how to create them is fragmented. It is difficult to conduct strong research in post-disaster environments, and those programs and interventions that have done so tend to address varying factors. This is hardly surprising given the complex interaction of influences on the lives of children and teenagers. It is perhaps, therefore, inevitable that programs to increase their resilience are diverse and difficult to compare.

We found it helpful to use a conceptual framework to make sense of the programs and evidence available (see Figure 1) and were struck by how relevant Ager and Strang's framework for understanding refugee integration was to the experiences of young people facing loss and disruption in the aftermath of a disaster—even though it was originally developed to define the core domains of integration for migrants and refugees resettling in a new country.

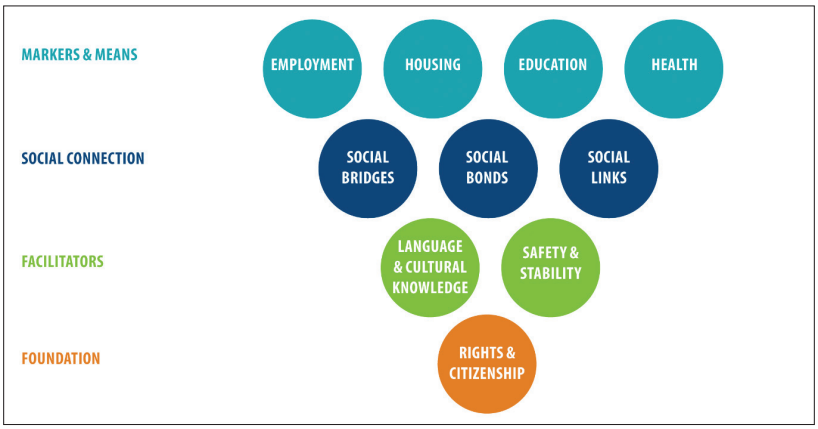


*Figure 1: Ager & Strang Conceptual Framework for Refugee Integration (reprinted with permission).*

We used the framework to examine recovery-funded programs offered to youth in the four years after wildfires struck Victoria, Australia, in 2009—commonly known as the Black Saturday Bushfires (see Figure 2).

We reviewed the websites of relevant government departments and recovery agencies, as well as publicly available records of initiatives that target children, young people up to the age of 18, or parents and teachers. Our work showed that most of the programs were delivered one to two years after the fires and tended to focus on high school students, with a moderate amount for elementary school students, and very few for preschoolers.

To test the usefulness of the framework, we reviewed the relevance of each of the domains to post-disaster recovery for children and teenagers:

Change in *employment* options after disaster can alter family circumstances by influencing parent employment and directly affect teenagers seeking casual employment or entering the workforce. Loss of housing, temporary *housing*, and separate living arrangements for families (to enable one of the parents to maintain an income) are all common post-disaster and are likely important influences on youth development and well-being. However, neither employment nor housing were central in the delivery of services for children and youth after Black Saturday.

The role of *education* in disaster recovery was clear. Our recent research showed reduced academic progress for elementary school children attending bushfire-affected schools in Victoria. A separate review of recovery services showed that although many addressed *education*, they weren't usually related to classroom activities but instead were out-of-school programs such as homework clubs and mobile libraries.

Physical injuries and ongoing mental *health* problems are key characteristics of post-disaster environments. Our review of children and youth services post-Black Saturday showed that the majority of services targeted health, predominantly consisting of individual mental *health* counseling.

The domains relating to social capital recognize the different relationships that are important in the lives of children and youth including the *social bonds* of family and close friends, the *social bridges* provided through wider social networks, and the *social links* with organizations that provide resources. *Social bridges* were strongly supported after Black Saturday, mainly through youth group activities.

Domains involving a sense of belonging and connection to *culture* are key to child and youth resilience. In a post-disaster context, we interpreted *language* as opportunities for creative expression to help children to process their emotional responses to the disaster experience. This was well-supported after Black Saturday with many youth art and music initiatives.

The loss of a sense of *safety and stability* was such a pervasive finding in our post-disaster research that we were pleased to see this domain in the framework. Unfortunately, very few of the recovery programs were specifically addressing *safety and stability*—a potentially critical oversight. There is developing evidence allowing children and youth to exercise their *rights and citizenship* by showing leadership and contributing to disaster recovery can have positive effects on their self-confidence, resilience, and independence. We were encouraged to see a relatively strong focus on opportunities for youth to demonstrate leadership and *citizenship* after Black Saturday. It is possible that these opportunities will contribute to a sense of safety and stability by increasing children's competence and confidence in their ability to live in a risk environment. However, these mainly involved older youth.

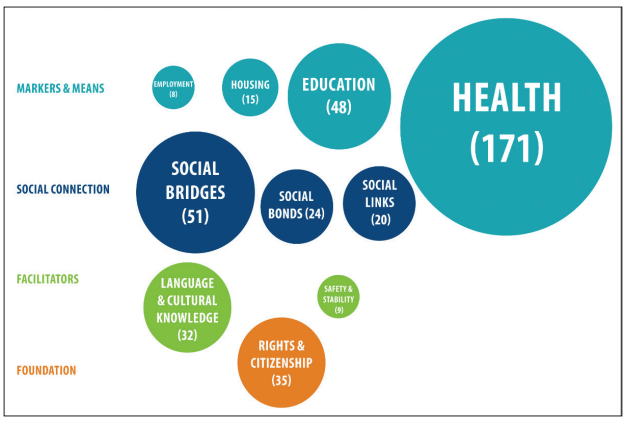


*Figure 2: Analysis of Post-Bushfire Recovery-Funded Services for Children and Teenagers Using the Ager & Strang Conceptual Framework (each circle is proportional to the number of programs—in parentheses—that address that domain).*

So what does this tell us? First, that there are many different ways we can help children and teenagers to process and recover from disaster experiences. The Ager and Strang Framework is a helpful guide to identifying key areas of influence that might otherwise be overlooked. Second, we need to consider and accommodate all of the different ages and stages of childhood and youth when planning recovery services and, in particular, we should make sure the youngest ones have opportunities to support their recovery. And finally, there needs to be a focus on restoring a sense of safety and stability. This may be supported by teaching young people how to live in risky environments and giving them opportunities to contribute to resilience and recovery initiatives for themselves and their community.

*We would like to acknowledge our co-authors of the original research article on which this piece is based—Elyse Baker (nee Snowdon), Hugh Colin Gallagher, Greg Ireton, David Forbes, and Elizabeth Waters.*

## Suggested Tools

**Community Trauma Toolkit**
**Emerging Minds**
Interactive toolkit of 166 different resources to support the social and emotional well-being of children who have experienced traumatic events.

### About the Authors

Lisa Gibbs is director of the Jack Brockhoff Child Health & Wellbeing Program at the University of Melbourne and academic lead for Community Resilience and Public Health within the Centre for Disaster Management and Public Safety.

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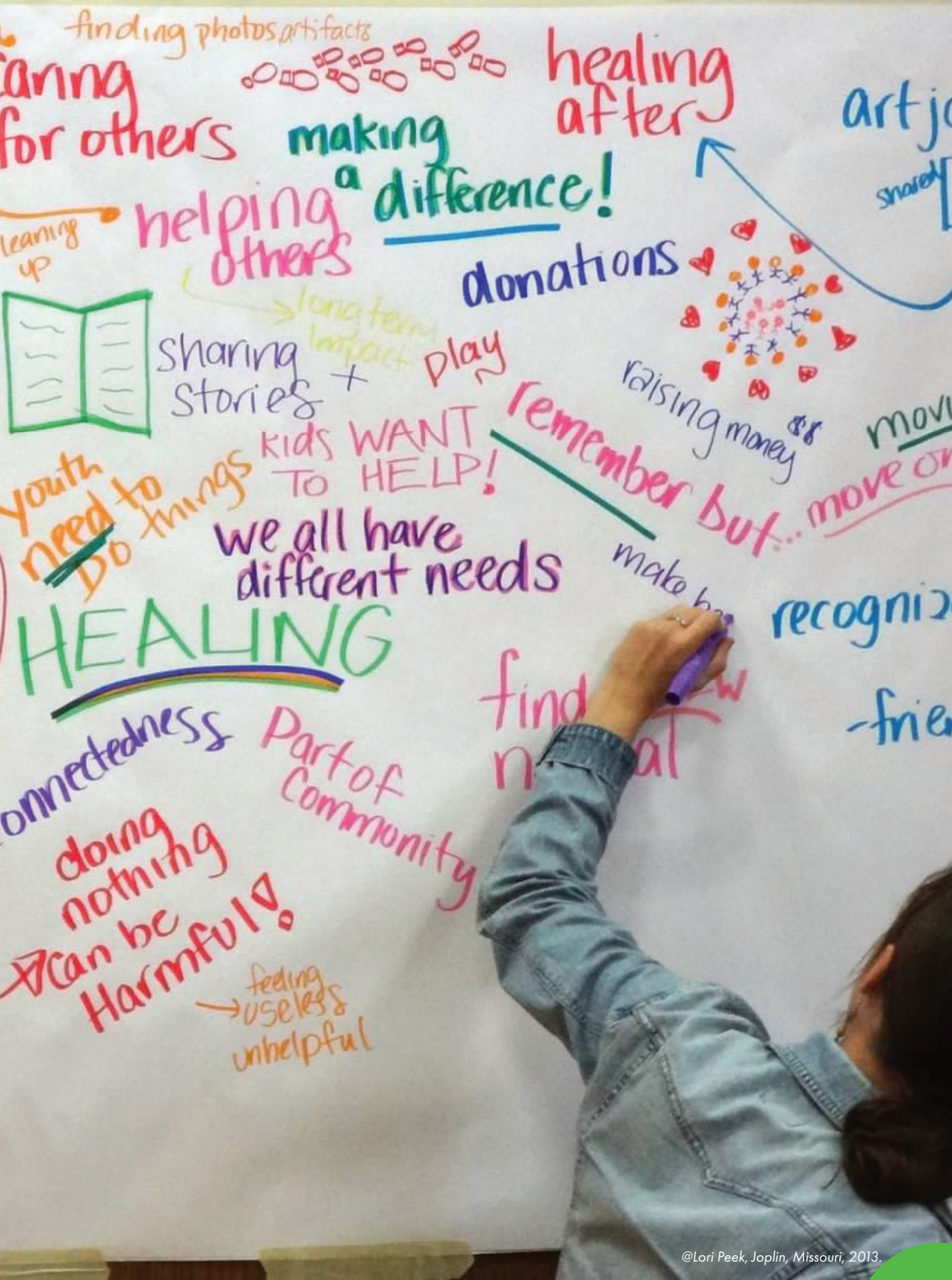


*@Lori Peek, Joplin, Missouri, 2013.*

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# New School: A Modern Approach to Disaster Risk Reduction and Resilience Education for Children

**By Briony Towers and Annette Gough**

### Implications for Public Health

When children have the chance to understand hazards and identify local vulnerabilities and capacities, they can play a central role in disaster risk reduction and resilience.

Children today are growing up in a world of ever-increasing disaster risks. Climate change, population growth, rapid urbanization, and growing social and economic inequality are all exposing greater numbers of people to damage and loss, and children are among the most vulnerable. However, children are also agents of change who have specific capacities to reduce disaster risk in their households, schools, and communities. A key mechanism for harnessing those capacities is school-based disaster risk reduction and resilience education (DRRRE).

Traditionally, school-based DRRRE has tended to adopt a transmission model of education, where a specific body of knowledge is transferred from adult to child. In this model, children are positioned as passive receivers of information as opposed to critical thinkers and problem solvers. This model also tends to be information driven rather than action oriented. Even when children are encouraged to take action, adults often prescribe the action and there are limited opportunities for children to creatively address other issues that might concern them.

Over the last several years, however, there has been noticeable shift away from the transmission model towards more holistic, place-based, participatory approaches that not only provide children with essential knowledge and skills, but also empower them to actively participate in DRR and resilience building activities. While the application of this approach is relatively new, there are three key components that are essential to its effective implementation.

**Understanding Local Hazards.** For children to view DRRRE as a meaningful activity relevant to their own lives, they first need to understand the hazards that could threaten their community. Increasing children's understanding of local hazards can be achieved with experiential learning activities that allow them to investigate how the natural and social characteristics of their area can create varying degrees of hazard exposure. This might involve going on transect walks with local hazard experts; looking at municipal hazard maps or engaging in participatory mapping activities; interviewing residents about past hazards and disasters; or exploring indigenous knowledge and perspectives. For children who have never experienced a hazard in their local area, these kinds of activities are essential because they may not recognize the personal relevance of DRRRE and that can prevent their purposeful engagement in the learning process.

**Identifying Vulnerabilities and Capacities.** It is well established that disasters are the result of hazards that impact communities that are vulnerable in some way. Still, vulnerability is often overlooked in school-based DRRRE. Instead, it should be included as a central concept because it highlights that disasters are not "natural" or inevitable, but a consequence of decision-making and human action (or inaction). Children can consider how certain groups of people might be overlooked in emergency management plans or how residents sometimes lack the knowledge and resources they need to adequately prepare for and respond to hazards. Equally important is the concept of capacity, which provides a lens through which children can identify the various strengths, attributes, and resources that can be deployed to reduce disaster risk and increase resilience. Having children conduct investigations to identify vulnerabilities and capacities can help reframe disasters as problems to be solved and position children as active participants in the problem-solving process.

**Engaging in an Authentic Project.** When children understand their local hazards and have identified the vulnerabilities and capacities in their local context, they can take action to reduce risk by engaging in an authentic project. For instance, they might create workshops or games to educate others about disaster planning and preparedness; produce short films or books that showcase local knowledge or hazard management strategies; or present recommendations for child-centered disaster

management to local decision-makers. Regardless of the nature of the project, children should have a voice in its development and there should be sufficient time for them to reflect on, critique, and revise their work. Ideally, projects should find an audience beyond the classroom walls. Public exhibitions and presentations for families and the wider community provide valuable opportunities for intergenerational and peer-to-peer learning and promote children's status as genuine stakeholders in DRR and resilience.

The many benefits of place-based participatory DRRRE were clearly demonstrated in our in-depth qualitative evaluation of Survive and Thrive – a wildfire education program for 10 to 12-year-old children in southeastern Australia. The evaluation found that the program had delivered a range of valuable outcomes, including increased knowledge and awareness, increased household planning and preparedness, and increased child participation in a range of DRR and resilience activities at home and in the wider community. Furthermore, teachers reported that the program enabled them to cover large swaths of the curriculum in meaningful ways and local emergency managers asserted that the program constituted a legitimate and highly effective mode of community engagement.

While the shift towards more holistic, place-based participatory approaches to DRRRE is still in the early stages, there are a range of tools and resources that can assist educators and DRR practitioners to implement this approach in schools. For example, Save the Children UK has developed the Take Care Toolkit, which provides practical guidance for participatory DRR programming with primary school children and the New Zealand Red Cross has produced Kia Pakari, which aims to empower secondary school students to build resilience in their school communities.

With the increasing frequency and magnitude of hazards and disasters, the delivery of DRRRE that provides children with genuine opportunities to actively participate in DRR and resilience building activities is both necessary and urgent, particularly in high risk areas. Place-based participatory DRRRE not only grants children access to essential knowledge and information, it empowers them to voice their perspectives, educate others, and take meaningful action on the risks they face—to the benefit of the entire community.

## Suggested Tools

**Community Mapping through Transect Walks**
**Catalytic Communities**
Information and instructions for completing a transect map of communities.

**Child-Centred Disaster Risk Reduction Toolkit**
**Plan International**
Collection of written modules designed to help countries, groups, and organizations work with children to reduce disaster risk and increase community resilience.

**Take Care: A Tool Kit**
**Save the Children**
Guidelines for collaborating with children and including them in disaster preparedness and response efforts.

**Kia Pakari: Schools' Resilience Programme**
**New Zealand Red Cross**
Program for educators to build resilience in schools through inclusion of students.

### About the Authors

Briony Towers is a research fellow in the Centre for Urban Research at RMIT University in Australia. Her research is focused on child participation in disaster risk reduction. Her PhD dissertation presented a socio-cultural theory of children's knowledge of wildfire hazards in Southeastern Australia. She currently leads a national project on disaster risk reduction and resilience education for the Australian Bushfire and Natural Hazards Cooperative Research Centre.

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# Teens in a Toxic Environment: Lessons from the 2010 Deepwater Horizon Oil Spill

**By Brandi Gilbert**

### Implications for Public Health

Toxic spills may disrupt young people's lives in many different ways. Youth should be engaged in the disaster recovery process.

When the 2010 BP Deepwater Horizon Oil Spill closed beaches along the U.S. Gulf Coast, one teen in Bayou la Batre, Alabama, described the closures—which disrupted residents' deep cultural ties to the water—as a profound loss, saying "it took part of your life out." This degradation of such a treasured recreation outlet is just one of the many ways that an environmental disaster can impact teens. Even in the face of the largest marine oil spill in history, though, the perspectives of youth were commonly overlooked as adults tried to protect young people and address their own concerns about the economic, health, and environmental impacts of the disaster.

These perspectives were significant, as was evidenced in the in-depth interviews that I conducted with young people between the ages of 12 and 17 in coastal Alabama after the spill. These conversations showed how this environmental disaster took a toll on youth, and shed light on ways to bolster future recovery efforts.

## Disruptions to Family and Peer Connections

The Deepwater Horizon Oil Spill disrupted longstanding cultural ties to the water and social ties between youth and their families—which were often rooted in boating, fishing, and swimming on the Gulf. For many youth, Gulf-centered recreation was at the crux of family time and part of their earliest memories, long-standing family traditions, and everyday routines. For some interviewees, the closing of the waters marked a loss of autonomy and freedom, because they couldn't spend time independently boating and fishing with peers. Some young people expressed that the closure of the Gulf waters elicited feelings of lonesomeness, sadness, and anger. Many were especially discouraged because for months there was no certainty about when the Gulf would reopen and they could return to these pastimes. As one 16-year-old said: "We didn't go fishing or swimming last summer. I've never seen the beaches closed down before. Not fishing at all last summer was kind of a lonesome feeling."

## Toxic Contamination

Even when the Gulf did reopen months after the spill, youth struggled to reconcile water safety issues with their desire to return to these cherished recreational activities. Given the lack of information and clear messaging, some young people developed strategies that made them feel safe, such as the study participant who swam at the local beach but not in deeper waters, believing that this would prevent exposure to toxins. Similarly, another teen noted that he did not keep the fish he caught when he began fishing again after the spill. However, after not witnessing any negative health consequences for those who were eating locally caught fish, he eventually decided that it was safe for him to eat his catch as well. These examples point to the need to provide youth with scientifically based, age-appropriate information to guide decision making.

## Economic Impacts

As one teen said, "being out on the water is not only our loves, but our careers…we depend on the water." Other teens shared how the disaster was having a detrimental economic impact on their families and communities, because many in the Bayou work in industries such as commercial seafood and shipbuilding, which rely on a healthy Gulf. These findings align with other work that shows that the long-term effects of toxic contamination and associated economic impacts can cause increased psychosocial stress among adults and their families.

After the Deepwater Horizon Oil Spill, youth used three common strategies to try to help buffer economic the impacts for their families: (1) taking on increased household chores while parents worked extra hours or took a second job; (2) seeking employment to help with family finances; and (3) translating BP claim paperwork from English to Vietnamese or Spanish to help the family collect compensation.

## Ways to Support Youth Following Environmental Disasters

Key ways to support youth in the face of environmental disasters and enhance their agency in the recovery process include better understanding their distinct needs, openly communicating about concerns around economic impacts, and facilitating learning opportunities at school.

## Recognize Youth Have Distinctive Needs

Community members and social service and mental health providers need to understand the ways in which environmental or toxic disasters can directly impact youth well-being by creating a shift in how they interact with their family members, peers, community members, and the surrounding physical environment. For instance, environmental contamination can prohibit youth from engaging in activities that were at the core of their everyday lives, as was evidenced by the narratives in my study.

## Openly Address Youth Concerns in the Household

Parents and caregivers should make an effort to talk openly with youth about disaster-related issues and uncertainties—especially associated with health issues and economic uncertainty—to help them make sense of the disaster and its potential implications. These conversations can also lessen teen's concerns about how their families will respond to financial hardships. Even when families have relatively few disaster-related disruptions, when parents actively open the lines of communication it can help ease any distress or uneasiness that might arise.

## Make Space at School for Youth to Engage about Environmental Disasters

In addition to parents, teachers play a key role in communicating about environmental disaster recovery. Teachers can use environmental disasters as teachable moments to educate youth about hazardous threats, which can inform their decision making. For instance, science and environmental studies classes can help young people learn to interpret accuracy and validity of scientific data to understand the impacts of environmental disasters. Teachers also need to consider, however, that some youth find school to be an escape from the disaster-related conflicts in their home, so a balance needs to be struck, as well.

Given the disruptions that environmental disaster can cause in communities, these strategies can help youth better make sense of and recover from environmental disasters. Ultimately, deliberate youth engagement around environmental disasters will also help make communities more resilient by bolstering support systems where youth can actively tackle issues that concern them.

## Suggested Tools

**Children in Disasters and Emergencies: Health Information Guide**
**Disaster Information Management Research Center**
Collection of articles related to children's health in disasters.

### About the Author

Brandi Gilbert is a research associate in the Metropolitan Housing and Communities Policy Center at the Urban Institute, where her research primarily focuses on disaster resilience. In the aftermath of the 2010 BP oil spill, she led a study on the impacts of the disaster on youth in Gulf Coast communities that focused on youth whose parents worked in seafood and shipbuilding industries. Her core research interest is in understanding the unique needs and capacities of youth in disaster preparedness, response, and recovery.

Gilbert, Brandi. 2019. "Teens in a Toxic Environment: Lessons from the 2010 Deepwater Horizon Oil Spill." *Research Counts*, Special Collection on Children and Disasters. 3(SC14). https://hazards.colorado.edu/news/research-counts/special-collection/teens-in-a-toxic-environment-lessons-from-the-2010-deepwater-horizon-oil-spill

Photo Credit: Zixia, 2018.

# Kid Power: Involving Youth in Building Community Disaster Resilience

**By Betty Pfefferbaum**

## Implications for Public Health

Youth involvement in readiness and response improves resilience. Approaches that enlist and engage children in age-appropriate disaster risk reduction activities should be part of preparedness actions.

Many people know that disasters can profoundly affect children. What is less known is the impact that youth can have in building disaster resilience. Youth are a major part of any community and, as such, they endure many of the same disaster repercussions that others experience. Rather than being held powerless, youth can and should contribute to community readiness, response, recovery, and resilience.

While youth vulnerability to disasters is well established, their involvement in readiness and response has received relatively little attention, even though youth who are informed and engaged are better able to protect themselves and others during a disaster. Those involved in disaster planning likely realize that children have special needs in such events, but they should be encouraged to see youth as potential resources that are there to help. The benefits of engaging youth before, during, and after disaster not only strengthen the community, but also have advantages for children and their families.

Youth develop through involvement with others and they need opportunities to participate in age-appropriate activities that are meaningful. Meaningful participation is best fostered through experiential, rather than abstract, learning. Resilience-building activities that allow youth to practice principles and techniques and take part in problem solving are preferable. Such activities might include creating identification cards with local contact information, preparing plans to help ensure pets are protected during a disaster, and participating in local disaster drills. Because community resilience requires deliberate collective action, youth activities should promote purposeful collaboration such as using teams, establishing measurable goals and objectives, and identifying benchmarks to assess progress. The more involved youth are in designing activities and in establishing and measuring goals and objectives, the more likely they are to assume a degree of ownership in the process. This promotes a sense of belonging, commitment, and a feeling of accomplishment and empowerment.

Adult involvement in resilience-building activities for young people is necessary to the extent that youth benefit from direction and validation as they explore new undertakings. Adults can transmit values, history, and social expectations; serve as a resource for information; and help children connect to community leaders and networks that allow them to achieve their goals. Adults can also be influential role models for communication, trust, sharing, and critical thinking. Ideally, adult interaction with these youth efforts will help build relationships that recognize the strengths and needs of one another and that consider and appreciate alternative views.

Beneficial outcomes for both youth and their communities depend, in large part, on the activities they are encouraged to participate in and on the guidance of supportive adults. Youth must be cognitively and socially ready to participate in resilience activities and adults must provide the resources and support youth need to be successful. Tasks and projects consistent with developmental and socio-cultural expectations can foster enthusiasm as youth confront new challenges and acquire new skills. For example, even young children can contribute to the creation of family communication plans and they can help develop and deliver safety messages.

The viability of youth engagement in building community resilience—and the potential benefits associated with it—are theoretically grounded in literature on child development, youth programming, and resilience. Evidence can be found in descriptions and evaluations of a variety of youth programs and in youth contributions to social movements.
Tools have been developed to improve community resilience by enlisting community member participation in preparedness. The Communities Advancing Resilience Toolkit (CART) offers a path to building community resilience by encouraging team

members to share information, skills, and resources; communicate; and learn from the experience of working together. CART teams conduct assessments, create community narratives, engage in problem-solving, identify goals and actions, and implement and evaluate selected actions.

While it was initially developed for use with adult groups, CART can be easily adapted for youth. Early field testing has suggested such adaptations can be successful—for instance, the CART Assessment Survey provides an entry point for youth engagement and skill building for youth groups interested in learning about their community. Youth can be involved as a sample to be surveyed and/or they can do the surveying. They can also learn about their community and community resilience by analyzing and interpreting survey findings. The survey instrument addresses five domains of particular importance in community resilience:

- Connection and Caring (illustrated by qualities such as relatedness, shared values, participation, support systems, and equity)
- Resources
- Information and Communication
- Disaster Management (including prevention and mitigation, preparedness, response, and recovery)
- Transformative Potential (expressed through critical reflection, strategic planning, skill building, and collective action)

Even though, and because, they are particularly vulnerable to disasters, youth should be engaged in readiness and response. Not only do youth and their communities benefit from enhanced community resilience, youth can benefit developmentally from participation in disaster mitigation, preparedness, and response activities. Communities have a responsibility— as well as vital reasons—to involve them.

## Suggested Tools

**Youth Preparedness Catalog**
**Federal Emergency Management Agency**
Catalog published by FEMA of youth disaster preparedness programs, curricula, resources, and activities.

**Community Advancing Resilience Toolkit**
**Terrorism and Disaster Center at the University of Oklahoma Health Sciences Center**
Toolkit outlining resilience-building process and providing support tools that can be used for youth engagement and skill building.

### About the Author

Betty Pfefferbaum is a George Lynn Cross Research Professor Emerita in the Department of Psychiatry and Behavioral Sciences in the College of Medicine at the University of Oklahoma Health Sciences Center in Oklahoma City, Oklahoma. She is internationally recognized as a leader in child disaster mental health research and its application to clinical and public health practice and disaster interventions.

Pfefferbaum, Betty. 2019. "Kid Power: Involving Youth in Building Community Disaster Resilience." *Research Counts*, Special Collection on Children and Disasters. 3(SC15). https://hazards.colorado.edu/news/research-counts/special-collection/kid-power-involving-youth-in-building-community-disaster-resilience

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# The 4P Framework: A Principled Approach for Engaging Youth in Risk Reduction and Resilience

**By The ResiliencebyDesign Research Innovation Lab**

## Implications for Public Health

Community and societal resilience is enhanced by the active involvement of youth in disaster risk reduction and recovery. Approaches that empower youth and support equitable youth-adult partnerships should be part of preparedness planning.

Young people can be disproportionately affected by disasters for many reasons. Their developmental stage, their reliance on adults, and their exclusion from many decision-making processes all join together to leave them on the sidelines when disaster strikes.

This one-dimensional understanding of youth perpetuates a mistaken view that children are just a population in need of protection with little to contribute. That view diminishes their potential as knowledgeable, engaged citizens able to meaningfully contribute to their own recovery and to that of their families and communities.

There is, however, a growing global movement of youth and adult allies who believe that stronger youth engagement and voice will contribute to individual, social, economic, and environmental resilience. This turn towards youth empowerment is visible in actions being guided by youth-led and youth-friendly organizations. On their own, or working alongside supportive adult allies, youth are leading and promoting opportunities for them to engage in and lead disaster risk reduction, recovery, resilience, and climate action initiatives. Examples include peer-to-peer wellness and resilience initiatives; youth advisory committees that inform emergency management and recovery task forces; youth-led climate actions and disaster risk reduction strategies; and advocating for youth-informed policies and practices.

Although these efforts represent an important step forward, greater collaborations are necessary between youth and non-traditional stakeholders to collectively achieve the goals for resilience and sustainability set forth in the 2015-2030 Sendai Framework for Disaster Risk Reduction and other global agreements, such as the UN Sustainable Development Goals.

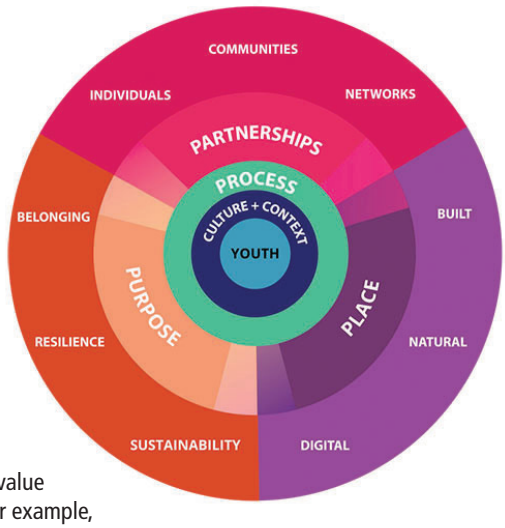
This need for impactful and equitable youth-adult partnerships is what compelled the ResiliencebyDesign Research Lab to conceptualize a youth-informed framework for youth engagement. The *4P Framework for Youth Engagement*—also called the 4P Framework—outlines an approach to disaster risk reduction and resilience based on an appreciation of the specific concerns, perspectives, and ideas of children, as well as a commitment to listening to them and taking action. It draws from multiple participatory and creative action research projects with young people. It forms the basis of a principled approach to working with youth and will be accompanied later by a guide that offers practical strategies for applying these principles in collaborative actions to reduce disaster and climate-related risks.

At its core, the 4P framework promotes leveraging youth creativity, insight, and expertise while also contributing to the development of knowledge, skills, and agency. The 4P Framework includes four distinct principles: **Process, Partnerships, Place,** and **Purpose**.

The **Process** principle recognizes that the how of actions is as important as the what. Processes can significantly impact outcomes and can be transformative in and of themselves. This principle encourages youth and their adult partners to co-create and leverage youth-informed and—where possible—youth-led actions in disaster risk reduction and recovery that build their sense of belonging and resilience. This principle encourages youth and adult partners to identify opportunities to stimulate and strengthen youth agency and engagement in ways that acknowledge and respond to power dynamics, social stigmas, inequities, and opportunities.

The **Partnerships** principle promotes endeavors that proactively identify and include diverse youth communities in collaborative, respectful, and mutually beneficial relationships. It focuses attention on the value of youth-adult partnerships in which youth and adults share power, making decisions together and co-designing processes and actions. It emphasizes

the need for such partnerships to engage individuals, communities, and networks across multiple sectors and varied interests. Actions flowing from this principle promote advancement of collaborations shaped by youth-identified outcomes (e.g., more youth friendly spaces or employment opportunities). The goal of such partnerships should include the generation of new opportunities that are inclusive of diverse youth sub-groups, and that provide youth opportunities to explore and act upon their own ideas in culturally responsive and reflexive ways.




The **Place** principle promotes actions that respect and respond to the connection youth have to place. In this context, place includes the built, natural, and online or virtual spaces and environments that youth inhabit and identify as important. This principle further encourages examining issues of accessibility and relevance when it comes to prioritizing the protection and or rebuilding of places, whether physical or virtual. Inherent is a recognition that youth may rely on and value places not necessarily or commonly identified by adults as important (for example, a local mini-market that serves as a hang-out or a park where kids meet and connect without adult oversight). Flowing from this principle is an understanding that place attachment is an important part of young people renegotiating their identities and their sense of safety in the face of the disruption caused by disasters and climate change.

The **Purpose** principle promotes policies and activities that recognize that a sense of purpose is as much a driver for youth as it is for adults. Purpose helps build a sense of belonging and agency, and purpose shifts in response to different developmental needs and stages. This principle encourages consideration, therefore, of youth engagement that moves beyond merely participating in activities to being engaged in defining and shaping activities they identify as meaningful, beneficial, and relevant to their lives. This could include activities that combine exploration and creativity, developing employment-related skills, or reducing risks by taking part in local decision making. Purpose and resilience flow from engagement that is sustainable, holistic (integrating environmental, social, and economic factors), and that supports the capacity of youth to foresee, confront, withstand, and recover from disruptions and loss.

Applying the principles of Process, Partnerships, Place, and Purpose is about encouraging youth resilience in the context of change and loss. Having a sense of agency and influence over the decisions that affect their lives leads not only to youth feeling included and valued, but also provides support for them as they develop a sense of their own capacity as leaders and innovators. Active involvement in shaping the direction of their communities contributes to youth resilience.

Taking risks, identifying opportunities that provide hope, and creatively generating ideas that support adaptation can be transformative for youth and their communities. Practicing leadership and innovation buoys youth development while also contributing to a shared potential for a resilient future. Community and societal resilience is only achievable only when all people—including youth—are involved as active citizens and leaders.

## Suggested Tools

### 4P Framework for Youth Engagement

**ResiliencebyDesign Research Innovation Lab**

Guide to develop youth-adult partnerships for disaster risk reduction, recovery, and climate action.

### About the Author


RESILIENCE BY DESIGN Research Lab

The ResiliencebyDesign Research Innovation Lab at Royal Roads University in Victoria, Canada—led by Robin S. Cox—is a collaborative team of faculty, students, and youth committed to applied, participatory, and creative action research. We believe in the potential of youth as resilience leaders and change makers. Our research focuses on improving local, national, and international policies and practices for risk reduction, disaster recovery, climate adaptation, and low-carbon resilience. Our approach to research features visual storytelling as a method of moving hearts and minds; capacity building as a tool for youth empowerment and engagement; and creative process as means for seeding new ideas and social change.



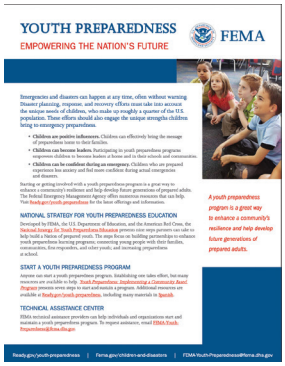
The ResiliencebyDesign Research Innovation Lab (RbD). 2019. "The 4P Framework: A Principled Approach for Engaging Youth in Risk Reduction and Resilience." *Research Counts*, Special Collection on Children and Disasters. 3(SC16). https://hazards.colorado.edu/news/research-counts/special-collection/the-4p-framework-a-principled-approach-for-engaging-youth-in-risk-reduction-and-resilience

# Tool Index

# Tool Index

## Introduction: Children Count in Disasters

| | |
|---|---|
| **Tool** | CDC Social Vulnerability Index |
| **Brief Description** | Interactive mapping tool that ranks U.S. census tracts according to social vulnerability to hazards and disasters. |
| **Web Link** | https://svi.cdc.gov/ |




| | |
|---|---|
| **Tool** | Youth Preparedness Fact Sheet |
| **Brief Description** | Fact sheet providing information on how youth can get involved in disaster preparedness initiatives. |
| **Web Link** | https://www.fema.gov/media-library-data/1480971205120-e250ebf542d7c1aa40e6d6188798e41f/Youth_Resources_One_Pager_20160706_508.pdf |

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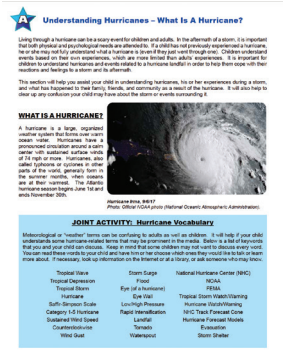
| **Tool** | Children in a Disaster Tools and Resources |
| **Brief Description** | List of tools and resources that can be used by parents, caregivers, teachers, health professionals, and other adults to care for children in a disaster. |
| **Web Link** | https://www.cdc.gov/childrenindisasters/tools-and-resources.html |

## Who Needs Help Most? Focusing Child Mental Health Resources After Disaster



Understanding Hurricanes – What Is A Hurricane?

Living through a hurricane can be a scary event for children and adults. In the aftermath of a storm, it is important that both physical and psychological needs are attended to. If a child has not previously experienced a hurricane, he or she may not fully understand what a hurricane is (even if they just went through one). Children understand events based on their own experiences, which are more limited than adults' experiences. It is important for children to understand hurricanes and events related to a hurricane landfall in order to help them cope with their reactions and feelings to a storm and its aftermath.

This section will help you assist your child in understanding hurricanes, his or her experiences during a storm, and what has happened to their family, friends, and community as a result of the hurricane. It will also help to clear up any confusion your child may have about the storm or events surrounding it.

WHAT IS A HURRICANE?

A hurricane is a large, organized weather system that forms over warm ocean water. Hurricanes have a pronounced circulation around a calm center and winds of 74 mph or more. Hurricanes, also called typhoons or cyclones in other parts of the world, generally form in the summer months, when oceans are at their warmest. The Atlantic hurricane season begins June 1st and ends November 30th.

Hurricane Irma, 9/6/17
Photo: Official NOAA photo (National Oceanic Atmospheric Administration).

JOINT ACTIVITY: Hurricane Vocabulary

Meteorological or "weather" terms can be confusing to adults as well as children. It will help if your child understands some hurricane-related terms that may be prominent in the media. Below is a list of keywords that you and your child can discuss. Keep in mind that some children may not want to discuss every word. You can read these words to your child and have him or her choose which ones they would like to talk or learn more about. If necessary, look up information on the Internet or at a library, or ask someone who may know.

| | | |
|---|---|---|
| Tropical Wave | Storm Surge | National Hurricane Center (NHC) |
| Tropical Depression | Flood | NOAA |
| Tropical Storm | Eye (of a hurricane) | FEMA |
| Hurricane | Eye Wall | Tropical Storm Watch/Warning |
| Saffir-Simpson Scale | Low/High Pressure | Hurricane Watch/Warning |
| Category 1-5 Hurricane | Rapid Intensification | NHC Track Forecast Cone |
| Sustained Wind Speed | Landfall | Hurricane Forecast Models |
| Counterclockwise | Tornado | Evacuation |
| Wind Gust | Waterspout | Storm Shelter |

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|---|---|
| **Tool** | After the Storm |
| **Brief Description** | Guide to help children cope with the psychological effects of a hurricane. |
| **Web Link** | http://www.7-dippity.com/other/op_storm.html |

TRAUMA-INFORMED MENTAL HEALTH ASSESSMENT

What Is a Trauma-Informed Mental Health Assessment and Why Is It Important?

Engaging Families in the Assessment Process

Providing Feedback

| | |
|---|---|
| **Tool** | Trauma-Informed Mental Health Assessment |
| **Brief Description** | Guidelines developed by the National Child Traumatic Stress Network for screening and assessment related to trauma and children's mental health. |
| **Web Link** | https://www.nctsn.org/treatments-and-practices/screening-and-assessments/trauma-informed-mental-health-assessment |

## How Parent Mental Health Can Affect Children After Disaster

*Helping Children Cope*

Disasters can leave children and teens feeling frightened, confused and insecure. And kids' responses can be quite varied. It's important to not only recognize these reactions, but also help children cope with their emotions.

You are their biggest influence.
When you can manage your own feelings you can make disasters less traumatic for your kids.
- **Encourage dialogue.** Listen to your kids. Ask them about their feelings. Validate their concerns.
- **Answer questions.** Give just the amount of information you feel your child needs. Clarify misunderstandings about risk and danger.
- **Be calm, be reassuring.** Discuss concrete plans for safety. Have children and teens contribute to the family's recovery plan.
- **Shut off the TV!** News coverage of disasters creates confusion and anxiety. Repeated images may lead younger kids to believe the event is recurring. If your children do watch TV or use the Internet, be with them to talk and answer questions.
- **Find support.** Whether you turn to friends, family, community organizations or faith-based institutions, building support networks can help you cope, which will in turn help your children cope.

For many kids, reactions to disasters are brief. But some children can be at risk for more enduring psychological distress. Three risk factors for this longer-lasting response are:

- **Direct exposure to the disaster** such as being evacuated, observing injuries of others, or experiencing injury
- **Loss/grief** relating to the death or serious injury of family or friends
- **On-going stress** from secondary effects, such as temporary housing, loss of social networks, loss of personal property, or parent's unemployment

PARENT TALK

Responding to an emergency is one thing ... what's the best way to respond to your child during or after a disaster?

Resources

Listen, Protect and Connect: a Psychological First Aid Series for parents and children, teachers, and families and neighbors.

Frequently Asked Questions

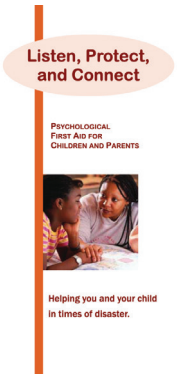
**Select an age group on the left to read parents' questions, and see how child psychologists would respond based on each developmental stage.**

Ages 0-2

Q. My baby used to sleep through the night just fine. But ever since I lost power for three days after last month's hurricane, she's been up constantly. Why?

| | |
|---|---|
| **Tool** | Helping Children Cope |
| **Brief Description** | Guidelines for parents to help children cope with disaster, including responses to frequently asked questions about coping at different developmental stages. |
| **Web Link** | https://www.ready.gov/kids/parents/coping |

| | |
|---|---|
| **Tool** | Helping Children Cope with Disaster |
| **Brief Description** | Booklet that offers parents, caregivers, and other adults suggestions on how to help children cope with the effects of disaster, as well as how to be prepared before a disaster strikes. |
| **Web Link** | https://www.fema.gov/pdf/library/children.pdf |

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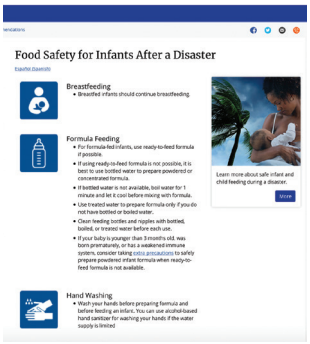
|---|---|
| **Tool** | Listen, Protect, and Connect: Psychological First Aid for Children and Parents |
| **Brief Description** | Guide designed for families, neighbors, co-workers and first responders to provide psychological first aid after a disaster. |
| **Web Link** | https://www.fema.gov/media-library-data/1499091995177-9ff6b07a88db5d422062efa4fdca9cfe/pfa_parents_and_children.pdf |

## Safe Spaces: Creating a Culture to Support Infant Feeding in Shelters

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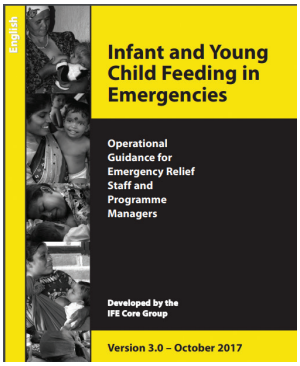
|---|---|
| **Tool** | Food Safety for Infants After a Disaster |
| **Brief Description** | Guidelines for safe practices feeding infants after a disaster . |
| **Web Link** | https://www.cdc.gov/breastfeeding/recommendations/food-safety-for-infants-after-a-disaster.html |

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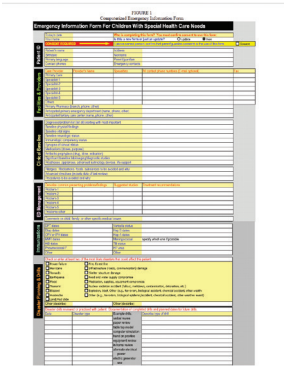
|---|---|
| **Tool** | Infant and Young Child Feeding in Emergencies |
| **Brief Description** | Comprehensive manual on infant feeding in disasters and emergencies. |
| **Web Link** | https://www.unhcr.org/45f6cd022.pdf |

| | |
|---|---|
| **Tool** | Pregnant Women in Disasters and Emergencies: Health Information Guide |
| **Brief Description** | Collection of articles related to pregnant women's health in disasters. |
| **Web Link** | https://disasterinfo.nlm.nih.gov/pregnant-women |

## Evacuating Under Fire: Children with Special Healthcare Needs in Disaster

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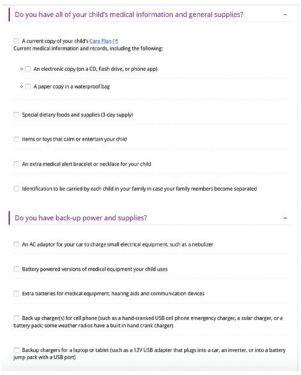
|---|---|
| **Tool** | Emergency Information Form for Children with Special Health Care Needs |
| **Brief Description** | Patient-specific emergency information form for children with special healthcare needs, offered by American Academy of Pediatrics and American College of Emergency Physicians. |
| **Web Link** | https://www.acep.org/by-medical-focus/pediatrics/medical-forms/emergency-information-form-for-children-with-special-health-care-needs/ |

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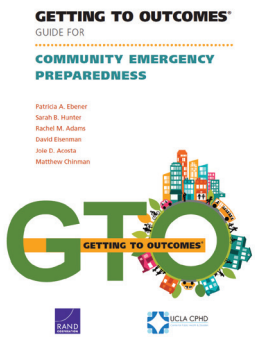
| **Tool** | Emergency Kit Checklist for Families with Children and Youth with Special Healthcare Needs |
| **Brief Description** | Checklist of items to include in an emergency kit for families with children and youth with special healthcare needs. |
| **Web Link** | https://www.cdc.gov/childrenindisasters/checklists/special-healthcare-needs.html |

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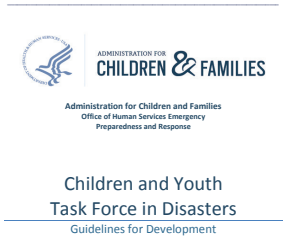
|---|---|
| **Tool** | Getting To Outcomes Guide for Community Emergency Preparedness |
| **Brief Description** | Comprehensive guide to implementing evidence-based public health interventions in emergency preparedness. |
| **Web Link** | https://www.rand.org/pubs/tools/TL259.html |

## Kids First: Children as Bellwethers of Recovery

| | |
|---|---|
| **Tool** | Disaster Recovery Tracking Tool |
| **Brief Description** | A web-based resource that local government stakeholders and others can use to track the quality and progress of disaster recovery. |
| **Web Link** | http://www.trackyourrecovery.org/ |

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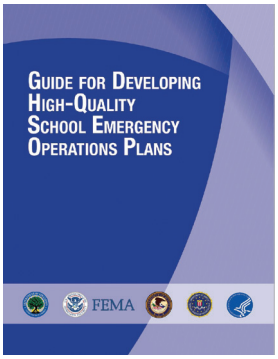
|---|---|
| **Tool** | Children and Youth Task Force in Disasters: Guidelines for Development |
| **Brief Description** | Guidelines for considering children and youth's needs in disaster preparedness and response. |
| **Web Link** | https://www.acf.hhs.gov/sites/default/files/ohsepr/childrens_task_force_development_web_0.pdf |

## Educational Continuity: The Role of Schools in Facilitating Disaster Recovery

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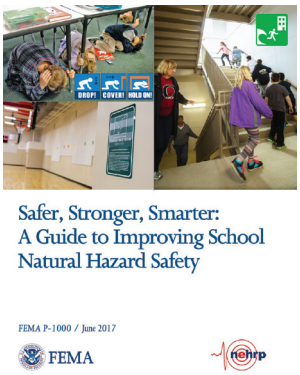
|---|---|
| **Tool** | Guide for Developing High-Quality School Emergency Operations Plans |
| **Brief Description** | Comprehensive guide to developing or revising existing school Emergency Operations Plans. |
| **Web Link** | https://rems.ed.gov/docs/rems_k-12_guide_508.pdf |

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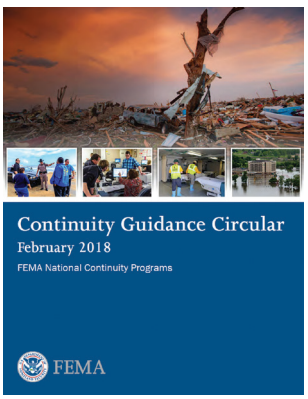
|---|---|
| **Tool** | Safer, Stronger, Smarter: A Guide to Improving School Natural Hazard Safety |
| **Brief Description** | Comprehensive guide that provides up-to-date, authoritative information and guidance that schools can use to develop a comprehensive strategy for addressing natural hazards. |
| **Web Link** | https://www.fema.gov/media-library-data/1503660451124-33b33bb90d4a6fe62c89e6de2b11dd78/FEMA_p1000_Aug2017_508.pdf |

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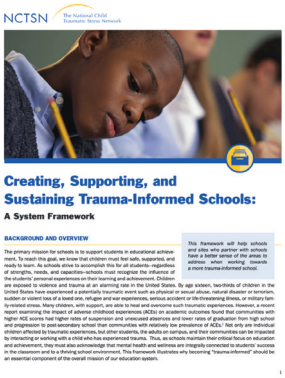
|---|---|
| **Tool** | Continuity Guidance Circular |
| **Brief Description** | FEMA's Continuity Guidance Circular provides guidance on the integration of continuity concepts, provides a common foundation for understanding continuity, and guides the development of other tools and resources. |
| **Web Link** | https://www.fema.gov/media-library-data/1520878493235-1b9685b2d01d811abfd23da960d45e4f/ContinuityGuidanceCircularMarch2018.pdf |

## Lessons Learned? Helping Students and School Personnel Recover from Disaster


NCTSN The National Child Traumatic Stress Network

Creating, Supporting, and Sustaining Trauma-Informed Schools:

A System Framework

BACKGROUND AND OVERVIEW

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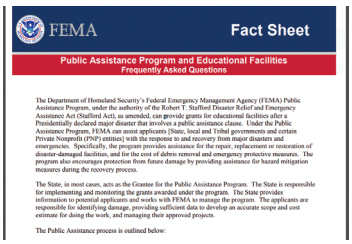
|---|---|
| **Tool** | Creating, Supporting, and Sustaining Trauma-Informed Schools: A System Framework |
| **Brief Description** | Framework for creating a trauma-informed school environment that addresses the needs of all students, staff, administrators, and families who might be at risk for experiencing the symptoms of traumatic stress. |
| **Web Link** | https://www.nctsn.org/resources/creating-supporting-and-sustaining-trauma-informed-schools-system-framework |

## On the Road to Routine: Disruption and Recovery After Hurricanes


FEMA Fact Sheet

Public Assistance Program and Educational Facilities
Frequently Asked Questions

The Department of Homeland Security's Federal Emergency Management Agency (FEMA) Public Assistance Program, under the authority of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended, can provide grants for educational facilities after a Presidentially declared major disaster that involves a public assistance clause. Under the Public Assistance Program, FEMA can assist applicants (State, local and Tribal governments and certain Private Nonprofit (PNP) entities) with the response to and recovery from major disasters and emergencies. Specifically, the program provides assistance for the repair, replacement or restoration of disaster-damaged facilities, and for the cost of debris removal and emergency protective measures. The program also encourages protection from future damage by providing assistance for hazard mitigation measures during the recovery process.

The State, in most cases, acts as the Grantee for the Public Assistance Program. The State is responsible for implementing and monitoring the grants awarded under the program. The State provides information to potential applicants and works with FEMA to manage the program. The applicants are responsible for identifying damage, providing sufficient data to develop an accurate scope and cost estimate for doing the work, and managing their approved projects.

The Public Assistance process is outlined below:

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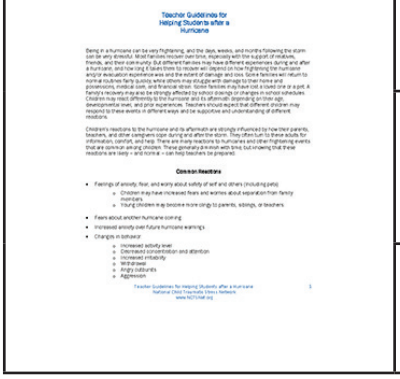
| **Tool** | Public Assistance Program and Educational Facilities Frequently Asked Questions |
| **Brief Description** | Provides answers to frequently asked questions regarding the Public Assistance Program. |
| **Web Link** | https://www.fema.gov/pdf/about/educational_facilities_factsheet.pdf |


Teacher Guidelines for Helping Students after a Hurricane

Being in a hurricane can be very frightening, and the days, weeks, and months following the storm can be very stressful. Most families recover over time, especially with the support of relatives, friends, and their community. But different families may have different experiences during and after a hurricane. The way a child reacts to a hurricane depends on many factors, such as the child's developmental stage, previous experiences and the extent of damage and loss. Some families will return to normal routines fairly quickly while others may struggle with damage to their home and possessions, medical care, and financial strain. Some families may have lost a loved one or a pet. A family's recovery may also be strongly affected by school closings or changes in school schedules. Children may react differently to the hurricane and its aftermath depending on their age, developmental level, and prior experiences. Teachers should expect that different children may respond to these events in different ways and be supportive and understanding of different reactions.

Children's reactions to the hurricane and its aftermath are strongly influenced by how their parents, teachers, and other caregivers cope during and after the storm. They often turn to these adults for information, comfort, and help. There are many reactions to hurricanes and other frightening events that are common among children. These generally diminish with time, but knowing that these reactions are likely – and normal – can help teachers be prepared.

Common Reactions

- Feelings of anxiety, fear, and worry about safety of self and others (including pets)
  - Children may have increased fears and worries about separation from family members.
  - Young children may become more clingy to parents, siblings, or teachers.
- Fears about another hurricane coming
- Increased anxiety over future hurricane warnings
- Changes in behavior
  - Increased activity level
  - Decreased concentration and attention
  - Increased irritability
  - Withdrawal
  - Angry outbursts
  - Aggression

Teacher Guidelines for Helping Students after a Hurricane
National Child Traumatic Stress Network
www.NCTSNet.org

| | |
|---|---|
| **Tool** | Teacher Guidelines For Helping Students After A Hurricane |
| **Brief Description** | Guidelines for teachers for helping students after a hurricane event. |
| **Web Link** | https://www.nctsn.org/resources/teacher-guidelines-helping-students-after-hurricane |

## Supporting Children in All the Spheres of Their Lives: Lessons from Katrina

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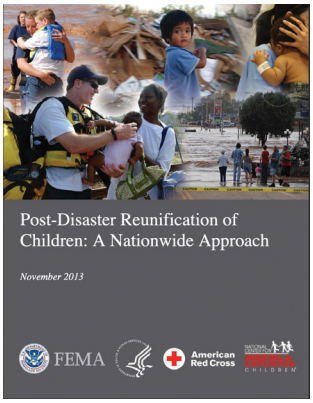
| **Tool** | Tips for Talking to Children and Youth After Traumatic Events |
| **Brief Description** | Guide for parents and educators for talking to children and adolescents after a traumatic event. |
| **Web Link** | https://www.samhsa.gov/sites/default/files/tips-talking-to-children-after-traumatic-event.pdf |

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|---|---|
| **Tool** | Post-Disaster Reunification of Children: A Nationwide Approach |
| **Brief Description** | Guide for jurisdictions to enhance family reunification procedures as part of national preparedness efforts. |
| **Web Link** | https://www.fema.gov/media-library-data/1384376663394-eef4a1b4269de14faff40390e4e2f2d3/Post_Disaster_Reunification_of_Children_-_A_Nationwide_Approach.pdf |

| | |
|---|---|
| **Tool** | Child Trauma Toolkit for Educators |
| **Brief Description** | Provides guidance and information for school administrators, teachers, staff, and parents on working with traumatized children in the school system. |
| **Web Link** | https://www.nctsn.org/resources/child-trauma-toolkit-educators |

## Supporting Children in All the Spheres of Their Lives: Lessons from Katrina

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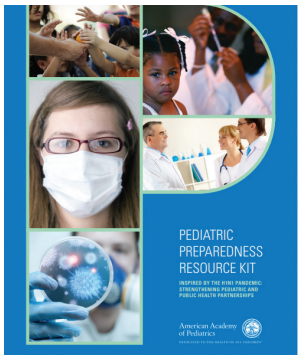
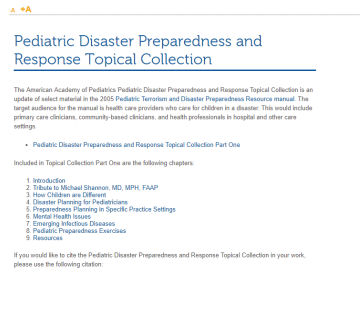
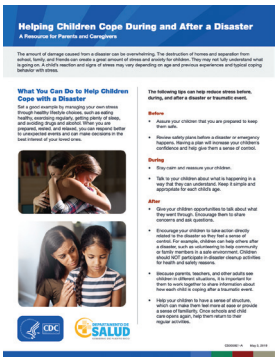
|---|---|---|
| | **Tool** | Prep Rally |
| | **Brief Description** | Save the Children toolkit that includes emergency preparedness games and activities for children in preschool, kindergarten, and elementary school. |
| | **Web Link** | https://www.savethechildren.org/us/what-we-do/us-programs/disaster-relief-in-america/family-emergency-preparedness-plan/making-disaster-preparedness-fun#kit |
|  | **Tool** | Pediatric Preparedness Resource Kit |
| | **Brief Description** | Guidelines and information for facilitating collaboration and discussion between public health and pediatric leaders regarding pediatric emergency preparedness. |
| | **Web Link** | https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Children-and-Disasters/Documents/PedPreparednessKit.pdf |
|  | **Tool** | Pediatric Disaster Preparedness and Response Topical Collection |
| | **Brief Description** | Guide for health care providers who care for children in a disaster that includes information and best-practices on a variety of topics, games, and activities. |
| | **Web Link** | https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Children-and-Disasters/Pages/Pediatric-Terrorism-And-Disaster-Preparedness-Resource.aspx |

## Children, Distress, and Disaster: How Adults Can Help

*Tips for Talking to Children and Youth After Traumatic Events*

**A Guide for Parents and Educators**

| | |
|---|---|
| **Tool** | Tips for Talking to Children and Youth After Traumatic Events |
| **Brief Description** | Guide for parents and educators for talking to children and adolescents after a traumatic event. |
| **Web Link** | https://www.samhsa.gov/sites/default/files/tips-talking-to-children-after-traumatic-event.pdf |


**Helping Children Cope During and After a Disaster**

**A Resource for Parents and Caregivers**

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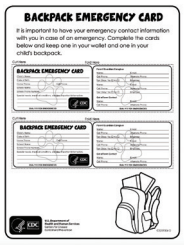
|---|---|
| **Tool** | Helping Children Cope During and After a Disaster |
| **Brief Description** | Resource for parents and caregivers to help children cope after disaster and recognize symptoms of mental distress. |
| **Web Link** | https://www.cdc.gov/childrenindisasters/pdf/children-coping-factsheet-508.pdf |


**BACKPACK EMERGENCY CARD**

It is important to have your emergency contact information with you in case of an emergency. Complete the cards below and keep one in your wallet and one in your child's backpack.

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|---|---|
| **Tool** | Ready Wrigley Backpack Emergency Card |
| **Brief Description** | Emergency contact information card to keep in wallet and child's backpack. |
| **Web Link** | https://www.cdc.gov/cpr/readywrigley/documents/backpack_emergency_card.pdf |

| Thriving After Disaster: A New Way to Think About Support Programs for Kids | | |
|---|---|---|
| | **Tool** | Community Trauma Toolkit |
| | **Brief Description** | Interactive toolkit of 166 different resources to support the social and emotional well-being of children who have experienced traumatic events. |
| | **Web Link** | https://emergingminds.com.au/resources/toolkits/community-trauma-toolkit/ |

## New School: A Modern Approach to Disaster Risk Reduction and Resilience Education for Children

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|---|---|
| **Tool** | Community Mapping through Transect Walks |
| **Brief Description** | Information and instructions for completing a transect map of communities. |
| **Web Link** | https://catcomm.org/transect-walk/ |

| | |
|---|---|
| **Tool** | Child-Centered Disaster Risk Reduction Toolkit |
| **Brief Description** | Collection of written modules designed to help countries, groups, and organizations work with children to reduce disaster risk and increase community resilience. |
| **Web Link** | http://www.childreninachangingclimate.org/uploads/6/3/1/1/63116409/child-centred_drr_toolkit.pdf |

| | |
|---|---|
| **Tool** | Take Care: A Toolkit |
| **Brief Description** | Guidelines for collaborating with children and including them in disaster preparedness and response efforts |
| **Web Link** | https://www.savethechildren.org.uk/content/dam/gb/reports/child-protection/take-care-toolkit.pdf |

| | |
|---|---|
| **Tool** | Kia Pakari: Schools' Resilience Programme |
| **Brief Description** | Program for educators to build resilience in schools through inclusion of students. |
| **Web Link** | https://www.redcross.org.nz/what-we-do/in-new-zealand/education-programmes/kia-pakari-schools-resilience-programme/ |

## Teens in a Toxic Environment: Lessons from the 2010 Deepwater Horizon Oil Spill

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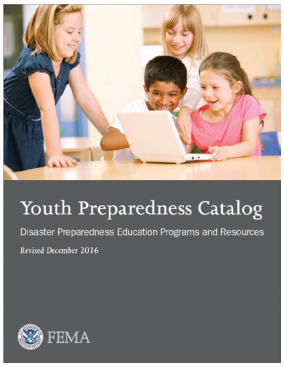
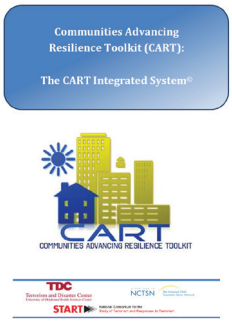
|---|---|
| **Tool** | Children in Disasters and Emergencies: Health Information Guide |
| **Brief Description** | Collection of articles related to children's health in disasters |
| **Web Link** | https://disasterinfo.nlm.nih.gov/children |

## Kid Power: Involving Youth in Building Community Disaster Resilience

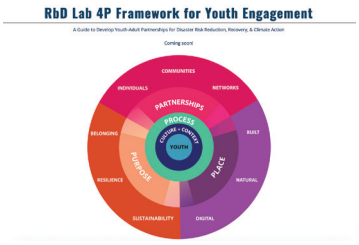



| | |
|---|---|
| **Tool** | Youth Preparedness Catalog |
| **Brief Description** | Catalog of youth disaster preparedness programs, curricula, resources, and activities. |
| **Web Link** | https://www.fema.gov/media-library-data/1480715641545-7dc27a024e1e1ffdfc4985f42dceb6e1/Youth_Preparedness_Catalog_v11_REVISED_508.pdf |




| | |
|---|---|
| **Tool** | Community Advancing Resilience Toolkit |
| **Brief Description** | Toolkit outlining resilience-building processes and providing support tools that can be used for youth engagement and skill building. |
| **Web Link** | https://www.oumedicine.com/docs/ad-psychiatry-workfiles/cart_online-final_042012.pdf?sfvrsn=2 |

## The 4P Framework: A Principled Approach for Engaging Youth in Risk Reduction and Resilience

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|---|---|
| **Tool** | ResiliencebyDesign Research Innovation Lab |
| **Brief Description** | Guide to develop youth-adult partnerships for disaster risk reduction, recovery, and climate action. |
| **Web Link** | http://resiliencebydesign.com/4pframework/ |

# Further Readings

# Further Readings

## Introduction: Children Count in Disasters

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## Thriving After Disaster: A New Way to Think About Support Programs for Kids


*Figure 1 sourced from:*
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Finally, we appreciate you reading this Special Collection. Children make up nearly 25 percent of the U.S. population, and they are 100 percent of our future. Thank you for taking this research and making it count.

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If you have questions about *Research Counts*, please contact Jolie Breeden at jolie.breeden@colorado.edu or Lori Peek at lori.peek@colorado.edu.

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