

# Building Integrated Mental Health and Medical Programs for Vulnerable Populations Post-Disaster: Connecting Children and Families to a Medical Home

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**Keywords:** disaster; health care; Hurricane Katrina; mental health

#### Abbreviations:

ADHD = attention deficit hyperactivity disorder  
BRCHP = Baton Rouge Children's Health Project  
CHF = Children's Health Fund  
CSRU = Community Support and Resiliency Unit  
FEMA = [US] Federal Emergency Management Agency  
MMU = mobile medical unit

Received: 10 September 2007

Accepted: 18 October 2007

Revised: 18 December 2007

Web publication: 27 August 2008

#### Abstract

**Introduction:** Hurricane Katrina, a Category 3 hurricane, made landfall in August 2005. Approximately 1,500 deaths have been directly attributed to the hurricane, primarily in Louisiana and Mississippi. In New Orleans, Louisiana, most of the healthcare infrastructure was destroyed by flooding, and >200,000 residents became homeless. Many of these internally displaced persons received transitional housing in trailer parks ("villages") under the auspices of the [US] Federal Emergency Management Agency (FEMA).

**Problem:** The FEMA villages are isolated from residential communities, lack access to healthcare services, and have become unsafe environments. The trailers that house families have been found to be contaminated with formaldehyde.

**Methods:** The Children's Health Fund, in partnership with the Mailman School of Public Health at Columbia University, began a program ("Operation Assist") to provide health and mental health services within a medical home model. This program includes the Baton Rouge Children's Health Project (BRCHP), which consists of two mobile medical units (one medical and one mental health). Licensed professionals at the FEMA villages and other isolated communities provide care on these mobile units. Medical and psychiatric diagnoses from the BRCHP are summarized and case vignettes presented.

**Results:** Immediately after the hurricane, prescription medications were difficult to obtain. Complaints of headache, nosebleeds, and stomachache were observed at an unusually frequent degree for young children, and were potentially attributable to formaldehyde exposure. Dermatological conditions included eczema, impetigo, methicillin-resistant staphylococcus aureus (MRSA) abscesses, and tinea corporis and capitis. These were especially difficult to treat because of unhygienic conditions in the trailers and ongoing formaldehyde exposure. Signs of pediatric under-nutrition included anemia, failure to thrive, and obesity. Utilization of initial mental health services was low due to pressing survival needs and concern about stigma. Once the mental health service became trusted in the community, frequent diagnoses for school-age children included disruptive behavior disorders and learning problems, with underlying depression, anxiety, and stress disorders. Mood and anxiety disorders and substance abuse were prevalent among the adolescents and adults, including parents.

**Conclusions:** There is a critical and long-term need for medical and mental health services among affected populations following a disaster due to natural hazards. Most patients required both medical and mental health care, which underscores the value of co-locating these services.

Madrid PA, Sinclair H, Bankston AQ, Overholt S, Brito A, Domnitz R, Grant R: Building integrated mental health and medical programs for vulnerable populations post-disaster: Connecting children and families to a medical home. *Prehosp Disast Med* 2008;23(4):314-321.

## Introduction

This report describes the development and implementation of a program designed to meet the medical and mental health needs of children and families affected by Hurricanes Katrina and Rita. The Baton Rouge Children's Health Project (BRCHP) uses two mobile units to provide a medical home for the internally displaced persons relocated to Baton Rouge, Louisiana and the surrounding areas. The BRCHP's service delivery model assures that health care is comprehensive, continuous, culturally sensitive, and family centered.<sup>1</sup> This mobile health program is one of three that form part of "Operation Assist," a collaboration between The Children's Health Fund and the National Center for Disaster Preparedness at Columbia University. Initial clinical findings and recommendations for post-disaster service development and delivery are presented.

## Background

Early in the morning of 29 August 2005, Hurricane Katrina made landfall on the Louisiana/Mississippi border as a Category 3 hurricane. The storm surge caused the breach of New Orleans' protective levees, and 80% of the city was flooded.<sup>2</sup> More than 1,500 deaths have been attributed directly to Hurricane Katrina, and the resulting flooding and destruction caused the largest internal displacement of people in United States history. Following the storm, an estimated 1.3 million people had to leave their homes and communities. As of March 2007, >200,000 former New Orleans residents remained displaced. This scope of displacement and homelessness is similar to that seen in Indonesia two years after the tsunami and in Ethiopia due to the ongoing drought.<sup>3</sup>

In the New Orleans community most affected by Hurricane Katrina, the lower Ninth Ward, 36% of residents were poor prior to Hurricane Katrina.<sup>4</sup> Among the 50 states and the District of Columbia, Louisiana's poverty rate (19.4%) was the second highest, exceeded only by Mississippi's poverty rate (21.6%). The poverty rate in New Orleans was higher (28%). More than half of the poor New Orleans residents (54%) lacked independent transportation, which greatly limited their ability to evacuate the city when evacuation became necessary.<sup>5</sup> More than 70% of the city's housing units were damaged, with an estimated cost of \$14 billion.<sup>6</sup>

Virtually the city's entire healthcare system was damaged or destroyed by Hurricane Katrina. Charity Hospital, the area's only Level-1 Trauma Center, was flooded and all paper medical records were destroyed. By February 2006, there were 80% fewer hospital beds than prior to Hurricane Katrina. Additionally, as of March 2007, more than 18 months after Katrina, there were <50 psychiatric hospital beds in New Orleans. This represents 17% of pre-hurricane capacity.<sup>7</sup> Only 10% of the city's 200 psychiatrists continued to practice in New Orleans. About three-fourths of the city's other safety net clinics were no longer functioning, and those that had reopened, were operating with limited capacity.<sup>8-10</sup> Pharmacies were closed, making medications, including those for chronic conditions such as diabetes, asthma, and hypertension, difficult to obtain.<sup>11</sup> The critical

shortage of healthcare providers was exacerbated by the protracted housing shortage and delays in repairing residential infrastructure, making it difficult, if not impossible, for evacuated and displaced health professionals to return to New Orleans.<sup>12</sup>

The city of Baton Rouge absorbed the highest percentage of people displaced internally within the state of Louisiana.<sup>13</sup> The delay or inability of government agencies to address ongoing problems of displacement and isolation among evacuees in Baton Rouge and other transitional housing sites continues to extend the physical health and mental health impact of this disaster.<sup>3,14</sup> The slow and poorly managed response of federal, state, and local agencies has been well-documented and continues to be a significant factor undermining the area's recovery.<sup>15</sup> As a consequence, affected individuals consistently re-experience aspects of the initial trauma related to the disaster (continuing loss of possessions and basic necessities, separation from family and friends, isolation from community, and loss of control over one's living situation), and exacerbates the disaster's psychological impact.<sup>16</sup>

Findings of health and mental health surveys from evacuee children and families, some of which had been useful in anticipating service needs, are discussed. The process of developing programs to meet these extreme needs in Baton Rouge is reviewed.

## Impact of Hurricanes Katrina and Rita on Louisiana Evacuee Families

Several studies have presented demographic and health service needs of specific evacuee populations. Shortly after Hurricane Katrina, adults in a large congregate shelter in Houston, Texas were surveyed. More than 90% were African-American (compared to 67% for the New Orleans population), and approximately 60% had an annual income <US\$20,000.<sup>17</sup> Other shelter surveys have described the post-hurricane level of healthcare need among sheltered Katrina evacuees. In Oklahoma, where families with children were included in the survey, 63% of households had at least one missing household member. Fifty-six percent of the adults reported having at least one chronic health condition, and 14% reported having a pre-hurricane psychiatric illness that required medication. One child in five (21%) was reported to have a chronic health condition.<sup>18</sup> In Austin, Texas, 50% of the adults arrived in their shelter with an acute illness and 59% reported having a chronic health condition.<sup>19</sup>

A survey of Louisiana evacuee children and families six months post-Katrina found that 40% of the children had at least one diagnosed chronic medical condition that required medical management, and 19% of the children who required prescription medication had not received one. Nearly half of the children who had access to continuous healthcare services before the storm no longer had a usual source of care. Mental health problems were prominent among children of storm evacuees and displaced families: 44% of parents reported new emotional or behavioral problems affecting at least one of their children, and more than half of the mothers scored in the clinical range for a

depression or anxiety disorder on a standardized measure. Instability of government-provided shelter placements was an issue that undermined efforts to re-establish stability and normalcy. Families had been moved an average of 3.5 times during the first six months after the storm, a factor that prevented school enrollment or consistent school attendance for the children.<sup>20</sup>

In a follow-up study with the same cohort of sheltered families shortly before the two-year anniversary of Hurricane Katrina, 80% reported that their living situation was worse than it had been prior to the hurricane.<sup>21</sup> Investigators from Louisiana State University surveyed sheltered evacuee adults in Louisiana nearly two years after the hurricane and found that the over-representation of African-Americans continued (73% compared to 19% white and 8% other). More than half (55%) had lived  $\geq 5$  years in the residence that they had to evacuate. Since the hurricane, 56% had been placed  $\geq 3$  shelters; 9% had been in  $\geq 5$  shelters. Before Hurricane Katrina, 55% had full-time jobs and 15% part-time jobs. Most of those who had been unemployed were retired, disabled, or mothers caring for their children at home. After Hurricane Katrina, more than two-thirds were unemployed.<sup>22</sup>

In the study conducted by Louisiana State researchers, 50% of interviewees felt that their current living situation in the camps and trailers provided by federal agencies was not safe for their children. This undoubtedly reflects the continually deteriorating condition of the trailers as a shelter and the isolation of the camps and trailer parks from any established neighborhood or community service. Forty percent reported continuing difficulty obtaining basic necessities. Most striking in this survey are the findings from the administration of a standardized depression screening. The mean score was in the "major depressive disorder" range.<sup>22</sup>

### Post-Katrina Shelters: FEMA "Villages"

The surveys cited above were conducted with hurricane evacuees generally sheltered at large, transitional housing sites operated by the Federal Emergency Management Agency (FEMA). These FEMA "villages" are open fields generally filled with 200 to 216 square foot travel trailers, most of which are intended for use as recreational vehicles. Renaissance Village, the largest FEMA transitional housing site in Louisiana, houses approximately 1,600 Katrina evacuees (including about 600 children) just outside of the Baton Rouge city limits. Trailers are lined up in rows and separated by gravel roads. There are no addresses, only designations by row and number, such as "C-10" or "J-18." In addition to the use of the trailer, the federal government provides families with only water and sewer lines, and electricity. The families are responsible for providing everything else.<sup>23</sup> These trailers are considered "government-provided temporary or transitional housing". As such, the evacuee families housed at these sites meet the federal definition of "homeless". However, none of the benefits guaranteed to homeless families through the McKinney-Vento (Homeless Assistance) Act are routinely provided to the families housed in the FEMA villages.<sup>24</sup>

The FEMA villages are desolate places, usually far removed from public transportation, play areas, and any semblance of a neighborhood or community. Families and their children living in them generally do not feel safe. Crime, including drug dealing, theft, violence, and prostitution, have become ongoing problems.<sup>25</sup> The trailers may present unhealthy indoor environments. The Sierra Club found that 83% of trailers at these sites had levels of formaldehyde exceeding the minimal risk level for long-term exposure.<sup>26</sup> Formaldehyde is a carcinogen also associated with allergic and upper respiratory symptoms. In particular, it poses a higher health risk for children, especially those with pre-existing respiratory conditions such as asthma.<sup>27,28</sup>

### The Baton Rouge Children's Health Project

The BRCHP began as part of The Children's Health Fund ongoing service phase of "Operation Assist," a disaster response and preparedness program developed by The Children's Health Fund in collaboration with the National Center for Disaster Preparedness at Columbia University. The BRCHP was developed into a permanent program of The Children's Health Fund in partnership with the Louisiana State University Health Care System Department of Pediatrics in Baton Rouge. This partnership with a local medical facilitates patient access to subspecialty care when needed, and provides local operational support and guidance. In addition, the BRCHP networked with those community-based healthcare providers who remained in place, both for continuity of care for patients and to best integrate the program into the fabric of available health services.

The model of service delivery used by programs of the Children's Health Fund is a custom-designed, fully equipped, state-of-the-art mobile medical unit staffed with physicians, nurses, and mental health and social service professionals. The use of mobile medical units is an effective way to bridge access barriers by making comprehensive health care in a medical home model available at geographically isolated residential and community sites.

The BRCHP uses a Mobile Medical Unit (MMU) and a Community Support and Resiliency Unit (CSRU). Each unit is a 38-foot recreational vehicle (known colloquially as an RV) customized as a fully functioning pediatric clinic. The BRCHP's medical and mental health service delivery focuses primarily on the Renaissance Village FEMA site described previously. In addition, both mobile units were providing service on a regular scheduled basis to a battered woman's shelter, to Early Head Start and Head Start programs, and to schools that have absorbed a large number of displaced children.

The BRCHP MMU provides urgent and routine care to children and young adults from birth through 24 years of age. The decision to use 24 years as the upper limit for pediatric patients was intended to ensure access for young adults who, because of lack of health insurance, as well as other barriers, otherwise would not have access to care. Prenatal care was a frequently requested service, and has been incorporated into the service model. Mental health services are provided by the CSRU, customized with seating in the front to accommodate family or group therapy, as well as an area in the rear that can

be used for therapeutic play. Both mobile units are staffed by experienced, professionally licensed clinicians.

Co-location of pediatric and mental health providers is an evidence-based method to improve access to mental health services in a coordinated, integrated way. There are many advantages to co-location: (1) patients who come to the medical unit often are screened and referred for co-existing mental health problems or crisis intervention; (2) patients who are referred for mental health assessment by school officials and others often are referred to the medical unit for untreated medical conditions; and (3) clients who have a positive relationship with the medical unit's pediatrician are more likely to seek mental health services. Children taking psychotropic medications have more frequent access to a medical doctor in managing their medication. The integrative team approach encourages a larger, more holistic perspective in how problems are viewed by clinicians. Continuity of care is ensured as team members are available to communicate frequently regarding patient care.

Medical and mental health services initially focused on acute care needs and arranging for the management of chronic conditions, some of which were newly diagnosed. For other patients, access to care, including prescription medications, had been disrupted. Mental health needs changed over time. In addition to initial acute care needs, new problems emerged including domestic violence, substance abuse, depression, and school problems, both behavioral and academic. Many of these became chronic, and long-term care needs were anticipated.

### Medical Needs of the Children and Families

Initially after Hurricane Katrina, the predominant pediatric conditions were similar to those found in a routine pediatric practice, such as upper respiratory infections, ear infections, allergic rhinitis, and dermatological conditions. The treatment and management of children with chronic medical conditions such as asthma was challenging. Most children were under-medicated. For example, children with moderate or severe asthma commonly lacked controller medication due to expired prescriptions, being dropped from Medicaid enrollment, inability to afford medications, or having lost their Medicaid cards. These children frequently had symptoms consistent with previously undiagnosed and unaddressed allergic rhinitis and/or sinus irritation due to formaldehyde exposure. The BRCHP medical team has worked with families of these children to provide the most effective medications and management practices for prevention and control of chronic medical conditions.

The precise etiology of common pediatric acute conditions also has proven unusually difficult to identify and treat. For example, some caregivers report their children, including very young children, complain of daily headaches and/or chronic stomachaches. These symptoms are consistent with somatic indicators of post-traumatic stress reactions, but also could be manifestations of the well-documented elevated formaldehyde levels in the trailers provided by FEMA.

Clinical concern emerged about the inadequacy of children's diets. Interventions provided by the BRCHP medical providers have included education to increase the

amount of iron in the child's diet and the provision of supplemental iron. For most of these families, there was a clear history of inadequate access to healthy food. Other signs of under-nutrition in this population were obesity and failure to thrive. In the FEMA villages, many reported that they were fearful of using the propane stoves available in the trailers. Some propane stoves had exploded, and some leaked propane into the trailer interiors when used. Assuming families wanted to use the stoves, the cost of propane (approximately US\$22 per container) potentially was prohibitive. Many families relied on microwavable or pre-prepared foods; however, distance from the shelter to the nearest food store was a potential barrier to obtaining more nutritious foods.

Propane also was required in the FEMA trailers to heat water for the showers and once heated, hot water only was available for a few minutes. Limited access to hot water, as well as overcrowding, has contributed to less than ideal hygiene. The BRCHP medical providers reported that these conditions are associated with frequent outbreaks of impetigo, methicillin-resistant staphylococcus aureus (MRSA), abscesses, and tinea corporis and capitis.

Most Louisiana Medicaid recipients are enrolled in the managed care program known as Community Care. As of December 2006, nearly one year and six months after Hurricane Katrina, 68% of Louisiana's Medicaid recipients were in Community Care.<sup>29</sup> Upon enrollment in the Community Care Medicaid Program, the family has 30 days to select a primary care provider or, if not selected, one is generated automatically. Then, the family is informed by mail of their assigned primary care provider. This process continues to be in place despite the disruption and dislocation of housing and unreliable receipt of mail in the FEMA villages. Neither families nor other community providers have been well-informed of the processes or requirements of enrolling with Medicaid and Community Care. Many families were dropped from Louisiana Medicaid when they were moved out-of-state immediately following Hurricane Katrina. Others were dropped when they did not follow new guidelines requiring annual recertification.

Issues around primary care provider designation routinely interrupted continuity of care and have been a barrier to receipt of pediatric sub-specialty care. When referrals to a specialist could be made, transportation has been a significant barrier to access. Transportation is included in federally mandated Medicaid benefits as an enabling service, but many families had reported to BRCHP staff that the Medicaid transportation available to them was unreliable. Patients had been told by the Medicaid Transport dispatch for the Baton Rouge area that efficient, non-emergency, medical transportation is "not guaranteed." One family, for example, had requested transportation 48 hours in advance, as required, but was not picked up for transport to the specialist on three consecutive attempts.

There are further limitations on the utility of this Medicaid transportation service. In many instances, Medicaid transport could not be used to cross Parish lines, rendering it useless to Katrina evacuee families who were referred to hospitals offering specialty care, since these

facilities often are located in parishes other than those in which FEMA trailer parks are sited. An additional problem with Medicaid transportation services in the Baton Rouge area is that they may not be used to access necessary non-medical services such as supplemental nutrition programs, Head Start or other preschool programs, prenatal support, and Social Security services.

### Mental Health Needs of Children and Families

The BRCHP mental health staff consists of a clinical social worker, two part-time, licensed psychologists, and a part-time psychiatrist. Initially, they helped families with immediate, concrete needs—food, water, shelter, etc. To the extent possible, they provided support for teachers, social workers, administrators, and nurses in the community, in order to facilitate a safe outlet in which to express their frustrations and sadness. The BRCHP mental health staff provided a series of trainings for school professionals. The trainings were intended to facilitate identification of children whose behavior indicated the potential need for psychological assessment and treatment.

Many children who presented to the MMU for medical care were referred to the mental health unit for assessment because of clear signs of psychological distress. The number of patients whose presenting problem was of a mental health nature increased steadily. Initially, residents of the FEMA trailer villages, even those with obvious mental health needs, were reluctant to seek mental health services partly because of concerns about stigma, and partly because of mistrust of a mental health service not yet integrated into the community. Over time, the number of patients requiring counseling for varying degrees of acute psychological distress increased. This change may not represent an increase in prevalence, but rather a clearer view of the extent of problems that had been obscured by resistance to this new mental health service. It also may reflect the fact that immediately following a disaster, people focus on meeting daily survival needs before they can address any mental health issues.

A frequent presenting problem from parents seeking mental health services was help with new-onset emotional and behavioral problems in their children. The most frequent presenting problems for school-age children were a disruptive behavioral disorder and academic under-achievement. As treatment progressed, BRCHP providers found that these symptoms frequently were related to underlying depression, anxiety disorders, and post-traumatic stress disorder. Among adolescents and adults, the BRCHP mental health staff reported frequent diagnoses of mood and anxiety disorders.

Parents increasingly reported feeling overwhelmed, hopeless, anxious, and depressed. One of the most significant consequences of the hurricane and its aftermath on children, their parents, and the professionals caring for them, has been the impact of separation, relocation, and uncertainty about the future. Many children were confused and unclear as to what was going on. They had been taken from place to place without explanation, sometimes separated from their families. At least initially, they were not able to count on any reliable caregiver, which, as expected,

severely compromised their sense of trust and comfort. For adults, the protracted loss of extended family and community undermined their typical support system and exacerbated their depression and sense of isolation.

On mental health assessment, the children coming for care from Renaissance Village presented with varying levels of exposure to trauma following Hurricane Katrina. Some children had a previously diagnosed mental disorder for which they had not received treatment. Those who had been in treatment experienced a disruption of care following their displacement. The impact of the disaster on child mental health had been, in part, attributable to the prior limited availability of mental health services. This has led to extended periods of time during which children did not receive necessary evaluations and interventions. In addition, nearly every child in this population reported at least one loss, through death or displacement, of an extended family member. Often, children reported that at least one relative's whereabouts still were unknown. Some children reported witnessing the death of a loved one during the disaster. The most immediate impacts of these losses were the associated symptoms of shock and grief.

The range of mental health and case management services provided through the BRCHP CSRU also included:

1. Outreach to help people become aware of the service and to improve adherence with appointments;
2. Individual interventions, including play therapy and other non-verbal methods of expression, storytelling, and art therapy;
3. Relaxation training and guided imagery to teach coping strategies by utilizing a client's strengths and natural resiliency;
4. Group interventions to allow participants to share experiences with their peers and reduce isolation;
5. Family Interventions including education about disaster preparedness, consultation regarding behavior management in the home, linkages with other services, and referrals to another clinician on the mental health team for more intensive support;
6. Service delivery in non-traditional settings, such as enrichment camps for displaced children;
7. Pharmacotherapy to enhance the management of moderate-severe symptoms, most commonly severe hyperactivity, anxiety, and depression;
8. School- and community-based activities; and
9. Collaboration, coordination, collateral visits, and case management.

Utilization of mental health services increased as federally funded services, under the auspices of FEMA, lost funding and became unavailable. This process began about one year after the hurricane, despite clear signs of continued and possibly increasing mental health needs in the affected communities and particularly within the FEMA villages. Within six months of these services closing, there was a sharp increase in requests for mental health services from the BRCHP mobile units by adults.

There were numerous reports by parents to mental health providers of child sexual abuse perpetrated by neighbors in the FEMA villages. Relocation to FEMA villages

entails parents' loss of control over the environment in which they will raise their children. Parents also have expressed a pervasive sense of lawlessness in the FEMA villages. This is in large part due to jurisdictional disputes about which law enforcement entity should respond to problems. The FEMA officials have limited ability to intervene in criminal behavior of any type and the local police are reluctant to get involved in crime occurring within the FEMA-controlled village. This hands-off policy from law enforcement, also shared by child protection agencies, leaves parents feeling unprotected. Parents have reported reluctance to let their children go outside to play. There is a valid concern that their children may become prey to sexual predators.

Shortly after Hurricane Katrina, the Baton Rouge sheriff's office requested a list of FEMA shelter residents to check whether any known sex offenders were included. The FEMA refused to turn over such lists, citing privacy issues.<sup>30</sup> It has been estimated that the whereabouts of as many as 2,000 registered sex offenders were unknown after Hurricane Katrina.<sup>31</sup> In a report issued nearly two years after Hurricane Katrina by the Department of Homeland Security Office of the Inspector General, FEMA reiterated its general refusal to share information about shelter residents with law enforcement entities, citing the Privacy Act of 1974.<sup>32</sup>

Teenagers experienced the stress of losing their primary peer groups. In weekly support groups at Renaissance Village, they reminisced about favorite meeting places in their New Orleans neighborhoods and friends from whom they were separated. They also reported experiencing stigma from their new community as they tried to integrate into new schools and frequent territorial battles with youth from Baton Rouge. They expressed anxiety about their family possibly being evicted from the FEMA village and about whether they ever will be able to return to their former communities.

Substance abuse seems to have increased over time among the Renaissance Village residents. Teenagers and adults frequently used marijuana and crack cocaine; some, including many parents, began to use alcohol to excess. The BRCHP mental health staff has interpreted this, in many cases, as an effort at self-medication for mood and anxiety disorders as well as an attempt to cope with stress. Some of the adult patients seen through the BRCHP mental health unit were relapsing into alcoholism due to the stress created by the hurricane-related trauma and ongoing displacement.

It has been especially important to include learning assessments for children and adolescents receiving mental health services because those identified as possibly needing special education often faced a lengthy delay being evaluated through the school system. There were not enough psychologists working for the Baton Rouge area schools systems for timely processing of these referrals.

### Case Vignettes

In each of the following cases, patient initials have been used and demographics have been changed to preserve privacy and confidentiality.

1. JK is a school-age, obese male from New Orleans who had been receiving treatment for attention

deficit hyperactivity disorder (ADHD) by a child psychiatrist pre-Hurricane Katrina. His father had a history of incarceration and his mother gave him to his paternal grandparents. JK and his grandparents relocated to Renaissance Village in Baton Rouge after the hurricane and flooding. The grandparents had a number of unaddressed medical and mental health needs, such as diabetes (grandmother), pain and disability from a recent accident and surgery (grandfather), depression, anxiety, and poor oral health, including dental abscesses. Staff from the BRCHP arranged, among other things, for the grandparents to receive emergency dental care at a local primary care clinic site. After two weeks, the grandparents had reduced anxiety and were able to focus more of their energy on the needs of JK. They have since returned to New Orleans and have reconnected with their now re-established medical and mental health providers.

2. AB is a 12-year-old African-American male whose description of a drawing he made typifies the feelings of many children we have encountered:

*"The purple is for the people who stayed in the storm, the red is for the people in my family who died in the storm, green (the predominant color) is for all the white people who are making money off of us, and yellow is for the people of New Orleans who are only getting a little bit of money."*

He was living in a FEMA trailer park when he made this statement.

3. RS, a father who had evacuated through chest-deep water with his two young sons, asked for help with his youngest child. For their safety, he had put the children on objects floating in the water, pushing them ahead of him to keep them from being separated until they reached dry land. After a while, the father realized that the youngest child was floating atop a dead body. The child was diagnosed with post-traumatic stress disorder.
4. MN, an elementary school boy, presented with multiple medical and social issues. Psychological evaluation revealed borderline intellectual functioning and confirmed ADHD. Evaluation and recommendations were presented to his school, but unfortunately, he was expelled before a special education evaluation was completed. Medical issues included moderate-to-severe asthma, allergic rhinitis, atopic dermatitis, and tinea capitis. MN suffers from physical and medical neglect and the medical and mental health providers advocated on his behalf with children's services and the truancy office. MN's father recently was killed in a violent incident. His mother, whose parenting skills were limited before that loss, has had increasing difficulty with tasks of daily living. An open-door policy was maintained for MN, and he often has walk-in therapy sessions. His older siblings were asked to get him medical care. After an incident that almost led to the family's expulsion from the FEMA trailer village, MN's mother agreed to work

with the on-site child and adolescent psychiatrist. MN's teenage brother, LN, aged 16 years, had participated in the Transitioning Teens group. When recently questioned by the pediatrician regarding conflicts at his high school between Baton Rouge and New Orleans students, LN reported "we're straight now—there's no problem."

5. SM is a 5-year-old female who initially was treated at the Mobile Medical Unit for chronic ear pain, middle ear effusion, and allergic rhinitis. CM, her 4-year-old brother, was evaluated at the MMU after being discharged from the hospital following a suspected intentional poisoning by another trailer village resident. During the course of their respective evaluations, it was discovered that their mother, JM, had been suffering from extreme anxiety, depression, insomnia, and neuropathic pain after having survived multiple stab wounds inflicted by her husband, the father of the children. JM expressed guilt and self-blame for not being able to access appropriate mental health services for her husband post-Katrina, and for pressing charges that had resulted in his incarceration. The medical and mental health team worked together to address her needs. Because she expressed that her primary concern was the safety and well-being of her children, emphasis was placed on the importance of self-care. JM reported improved sleep at night after just her first session. Subsequent sessions occurred inside her temporary housing, a trailer, where she was living with her boyfriend and children, because of continued threats from the youth that previously had been suspected in having poisoned CM. JM and her boyfriend were linked with other medical and mental health services in the community who interfaced on their behalf with law enforcement, FEMA security, and others.
6. On the second anniversary of Hurricane Katrina, OP, a 23-year-old mother, brought her 10-month-old infant to the Community Support and Resiliency Unit (CSRU), requesting to see a pediatrician for a minor medical problem. The driver noted the mother's degree of agitation and arranged for an emergency session with the Clinical Social Worker (CSW). She reported that the previous day, a voice had told her to threaten someone at Renaissance Village with a knife. OP currently was concerned that if the voices got any worse, she might hurt her baby. Another of her children with chronic medical problems, she said, had died during Hurricane Katrina. OP was assessed to have had a full-blown psychotic episode, with command hallucinations. The CSW contacted the staff psychiatrist who wrote an emergency medical order and had OP hospitalized that same day. While the anniversary of the hurricane was a trigger event in this psychotic episode,

the day also marked the first day that OP's husband, who had continued his pre-hurricane job in New Orleans, had to stop commuting back to that city and began a job in Baton Rouge. The cost of gas was prohibitive. Having to abandon hope of restoring prior ties with New Orleans because of financial pressures has become common two years after Hurricane Katrina.

The realization that they may not be able to go back home and restore the life they had previously led is a contributing factor to the continuation of post-disaster mental health problems for the affected populations.

### Conclusions

The development of mental health programs during and following a disaster requires a commitment to provide services over time. The initial phase is likely to be marked by under-utilization of mental health services for several reasons: (1) there is a priority to meet concrete survival needs before dealing with stress, mood, and anxiety reactions; (2) resistance to requesting mental health services, including concern about stigma, remains strong; and (3) it is necessary to establish one's presence as a reliable and trustworthy service provider in the community before expecting that people will come forward to discuss their most personal needs and concerns.

To the extent possible, co-locating mental health services with medical services is an effective way to facilitate mental health utilization. Seeking medical care may be perceived as a more acceptable point of entry for mental health services. Many patients have medical and mental health problems that must be addressed, and co-location allows for fewer visits and better adherence with appointments. Also, it is likely that following a disaster, healthcare relationships will have been disrupted, and medical services will be needed independent of any mental health concerns.

The services described generally are useful for isolated and underserved patient populations without access to health care. This includes not only post-disaster populations, but also rural, migrant, homeless, linguistic, and cultural minority, and underserved inner city populations. Barriers to care may include poor transportation, health professional shortages, and lack of adequate health insurance. This model of using mobile units to deliver medical and mental health services has proven effective to bridge barriers to access for these diverse populations during the past 20 years throughout The Children's Health Fund (CHF) National Network, which now comprises 21 programs in 14 states and the District of Columbia.

The Baton Rouge Children's Health Project was developed as a response to the hurricane-related disaster affecting several Louisiana communities. It has become a part of the healthcare infrastructure of these communities, and, like all other CHF projects, will remain in place as long as the need exists.

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