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Treating Traumatized Children after Hurricane Katrina: Project Fleur-de Lis™

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Abstract Project Fleur-de-lis™ (PFDL) was established to provide a tiered approach to triage and treat children experiencing trauma symptoms after Hurricane Katrina. PFDL provides school screening in schools in New Orleans and three tiers of evidence-based treatment (EBT) to disaster-exposed children utilizing a public health approach to meet the various needs of students referred to the program, some stemming from the disaster itself, some related to prior exposure to violence, and some relating to preexisting conditions and educational delays. The National Institute of Mental Health (NIMH) is funding a research project conducted in collaboration with PFDL, to examine two evidence-based practices for child PTSD in order to guide child treatment decisions after future disaster situations. This article describes the need for mental health services for children following disaster, the structure and purpose of PFDL, design of the NIMH project, two case descriptions of children treated within the project, and preliminary lessons learned.

Keywords Children · CBITS · Disaster · PTSD · TF-CBT · Violence

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Introduction

Emergency disaster responders focus on medical and other basic needs rather than children's psychological distress. This is a reasonable allocation of acute resources since the majority of children have transient signs of distress after disaster exposure. As structure, routine, and order return, many children are resilient, regaining their previous level of psychological functioning. However, a significant minority of children who are more vulnerable will have ongoing difficulties.

Recent studies have identified factors that increase children's risk for developing PTSD and related symptoms such as depression after disasters. Greater exposure to the disaster itself increases risk. Children with greater personal exposure to life threat or danger, those who witnessed others in life-threatening situations or whose family members' lives were in danger are at greater risk than children who did not experience or witness such things

(Pine and Cohen 2002). Similarly, having a family member die in the disaster is a risk for greater symptoms post-disaster. After the Asian tsunami, delayed evacuation was found to predict the development of PTSD in children 9 months later (Thienkrua et al. 2006). After the September 11th terrorist attacks and the Asian tsunami, children's peri-traumatic panic symptoms predicted later PTSD symptoms (Pfefferbaum et al. 2006; Thienkrua et al. 2006).

Factors unrelated to disaster exposure also predict risk and resilience. Demographic factors (female gender, younger age) (Pine and Cohen 2002) genetic vulnerabilities (Caspi et al. 2002), family variables (parental support and parental PTSD) (Pine and Cohen 2002), and existing mental health problems such as anxiety (La Greca et al. 1998) are all associated with symptom development in children after disaster exposure. Of particular note are the facts that children in disaster zones have often experienced previous traumas, and that these prior traumatic events may be identified by children as being more traumatic than the disaster itself. Children with past trauma histories of sexual abuse, domestic violence, traumatic deaths, or other serious traumas may experience a "retriggering" of previous PTSD symptoms upon exposure to a new trauma such as a disaster. These children may be at increased risk for manifesting PTSD symptoms post-disaster (Hoven et al. 2005; Pine and Cohen 2002). In addition, community-wide disasters may allow for new exposures to violence, during evacuation or amidst post-disaster crowding and difficult living conditions, and thus may exacerbate recovery. These exposures to violence can be considered "secondary" traumas, caused in part by the disaster but with a different meaning and a different context for children.

Given the long-term deleterious effects associated with PTSD in children who have PTSD symptoms, including the development of chronic PTSD (American Academy of Child & Adolescent Psychiatry in press), cognitive and educational impairments, relationship problems, significantly increased health care usage, substance abuse, suicide attempts, and completed suicide (La Greca et al. 1996), it is of critical medical and societal importance to identify affected children, and provide them with effective treatment for PTSD in order to prevent these negative outcomes. This article describes one approach to meeting the mental health needs of children following disaster, the 2005 Hurricanes Katrina and Rita. In this article, we describe Project Fleur de Lis™, a school-centered program addressing children's post-hurricane mental health needs, and a small research project launched 15 months after Hurricane Katrina struck. In this project, the importance of addressing children's exposure to past traumas along with exposure to disaster was apparent.

Project Fleur-de-lis™ (PFDL)

Hurricane Katrina was one of the worst natural disasters to ever impact the United States. On August 29, 2005 it made landfall, with subsequent flooding of New Orleans secondary to the breach of several levees and canals. There was a mandatory evacuation of the entire city plus the destruction of the living environment of over 500,000 people and the loss of over 1,000 lives. Although the majority of families escaped prior to the breach of the canals, thousands of the city's citizens, including the poor, elderly, and hundreds of children, had no means of evacuating and were forced to seek refuge in the attics or roofs of their homes or in two large emergency shelters (the Super Dome and the New Orleans Convention Center). These are the same families most likely to be exposed to previous traumas prior to the hurricanes (Stein et al. 2003a). Many had to wade through flood waters, experienced separation from family members, or viewed dead bodies during the journey to these shelters. Others had to be rescued from rooftops or make other precarious journeys to safety. Both emergency shelters lost electricity, leaving their inhabitants without air conditioning, working toilets, water or food during the days before they were rescued. There were a number of incidents of violence in the shelters, including reported sexual assaults. During the evacuation many children were separated from family members; by the time of the evacuation, many young children and elderly had become seriously ill and had to be hospitalized. Most families were subsequently evacuated to the Astrodome in Houston where more separations, waiting, uncertainty, and ethnic tensions occurred as predominantly African American children were temporarily integrated into a predominantly Latino community. Hurricane Rita struck the Gulf Coast on September 24th, delaying the reopening of New Orleans and causing further damage and displacement. Upon return to New Orleans, families were faced with life in FEMA trailers, and discovery that all of their possessions and homes were destroyed, and family members, friends, and pets had died or moved away and their schools had closed. Many children had relocated multiple times by the start of the 2006–2007 school year. Many were still living in FEMA trailers, under over-crowded conditions. Anecdotal reports gathered during Project Fleur-de-lis (PFDL) (described below) detail the high stress conditions and children being exposed to more adult behaviors (drinking, sexual activity, and violence) than would be the case if they were living in their own homes.

After the immediate disaster response, when "first responder" volunteers who had provided mental health care left the New Orleans area, the daunting task of providing intermediate and long-term trauma-informed

treatment to the thousands of children exposed to trauma before and after Hurricane Katrina was left to those mental health professionals who remained. PFDL was created by Mercy Family Center in the fall of 2005. It has been funded by a consortium of corporations, foundations, individual donations, and non-profit agencies over the last 3 years. PFDL was designed as an intermediate and long-term school-based mental health service model for children who have been exposed to traumatic events as a result of natural and man-made disasters. PFDL is a collaborative program linking local social service agencies, schools and nationally recognized researchers, program developers, and clinicians in a coordinated effort to provide state-of-the-art mental health services within schools in the greater New Orleans area. PFDL was designed to: (1) implement school-based intervention services to children exposed to trauma; (2) establish a mechanism for identification of and provision of services to children with mental health and psycho-educational needs beyond what can be addressed or identified in the school setting; (3) partner with national leaders to provide increased access to mental health care and effective trauma treatments for children in schools and the community; and (4) provide evidence that treatments for traumatized children can be effectively delivered in a three-tiered model of care utilizing school-based interventions, classroom-based interventions, and specialized community-based interventions in communities significantly impacted by natural or man-made disasters.

PFDL's "Stepped Trauma Pathway" was designed to address three major factors that impact mental health intervention post-disaster, including the time when a school-based intervention can be implemented after a community disaster, the number of children served, and the severity of post-trauma symptoms of identified children. PFDL's Stepped Trauma Pathway focuses on children who have been exposed to trauma through a combination of (1) direct exposure to Hurricane Katrina and its immediate destruction in the greater New Orleans area; (2) the persistent and pervasive secondary traumas endured by way of living in the greater New Orleans area, including violence exposure and; (3) complex trauma that many financially disadvantaged and ethnic minority children have experienced prior to Hurricane Katrina.

Treatment studies of childhood PTSD have grown in numbers and empirical rigor in the past decade. Several empirical reviews and treatment guidelines (e.g., American Academy of Child & Adolescent Psychiatry 1998; Chadwick Center for Children and Families 2004; Foa et al. 2008; SAMHSA Model Programs, www.modelprograms.gov,) have recognized Trauma Focused-Cognitive Behavioral Therapy (TF-CBT; Cohen et al. 2006a) as the treatment with the strongest evidence of efficacy in treating traumatized children, and have recognized Cognitive Behavioral Intervention for Trauma in Schools (CBITS; Jaycox 2003; Stein et al. 2003b) as a "promising" or "proven" school-based intervention. In addition, the Classroom-based Intervention (CBI ©; Macy et al. 2006) was being implemented in many schools in New Orleans by Save the Children, and is also a promising practice (Jaycox et al. 2008). Thus, these three interventions had been selected for use in PFDL based on their evidence-base: CBI offered as a universal intervention, CBITS as a selected intervention for those with lingering symptoms, and TF-CBT for children with PTSD who did not respond to the school-based interventions.

In response to constraints in school priorities, timing, and staffing issues, however, the full-stepped care model was not the norm. In the months following Hurricane Katrina, PFDL offered free multidisciplinary consultation to school-based mental health professionals and free psychological and psychiatric services to students identified as needing mental health care in excess of what could be provided in the school setting. During weekly "Classroom–Community Consultation"(C^3) meetings, children who were identified as being in need of psychological services in participating schools were discussed at weekly meetings attended by other participating school-based mental health professionals and the social workers, psychologists, and psychiatrists of Mercy Family Center, a non-profit community mental health center funded by the Sisters of Mercy Health System. Forty-five schools and 22,000 students were under the PFDL "umbrella of care" during this period. (PFDL model of care and free services continue to the present time with more schools being added on an ongoing basis.)

During the 2006–07 school year, 268 students were triaged within weekly C^3 meetings, 116 students were referred for psychoeducational testing, 114 students were referred for therapy, 20 students were referred for psychiatric services, and 18 were determined to be in no need of services. Of the 114 students referred for psychotherapy, 70 referrals (61%) were trauma related (half of these were related to Hurricane Katrina by way of either direct exposure or secondary loss such as damaged home, neighborhood, death of family member and pet).

The 70 referrals for trauma related events in the 2006–2007 school year were directly referred for individual, outpatient "third tier" services (TF-CBT) since "second tier" trauma focused groups were not up and running in the 45 participating schools as originally intended. Significant progress has been made in establishing a sustainable stepped-care model among the 65 participating schools during the current 2008–2009 school year by way of 13 PFDL schools now providing CBITS groups and TF-CBT interventions on their campuses. And although current trauma exposure for our PFDL student population receiving

interventions tend to be related to community/domestic violence and abuse/neglect, this stepped model is becoming established to address trauma related to future natural and manmade disasters.

The NIMH Project: Implementation of Two Interventions

In many disaster scenarios, detection of children in need of services is challenging, and few trained mental health providers are available to provide individual treatments to all symptomatic children. Thus, triaging children to the optimal level and intensity of care is essential, and PFDL, described above, provides a good model for how to do this. Although there are many examples of tiered programs in school settings (Smith et al. 2007), empirical data to provide information about how best to operationalize them are still lacking. Although data are being collected from children at pre- and post-treatment to assess clinical improvement, these data do not address the question as to which treatment was optimal for which children. The authors believed that an opportunity existed within the structure of PFDL to conduct such a study, whether funding could be obtained to "piggyback" this study onto the existing structure. However, a mechanism had to be found to obtain funding quickly enough to meet children's post-hurricane mental health needs during the 2006–2007 school year (one year after Hurricane Katrina occurred).

Most federal funding mechanisms after disasters do not provide for actual treatment, but only for outreach and education. Other mechanisms for conducting research, such as RAPID (Rapid Assessment Post Impact of Disaster) grants, require applicants to go through an expedited review process which still might delay receipt of funding for many months, as do competitive grant supplements. An alternative was to obtain Administrative Supplements to existing federal grants, though these funds are very modest. Three of the authors were Principal Investigators on two existing grants from the National Institute of Mental Health (NIMH), which were aimed at evaluating the effectiveness of TF-CBT when delivered in a community setting, and an adaptation of CBITS for delivery by school personnel, respectively. We proposed to NIMH to develop joint Administrative Supplements which would aim to help inform efforts to triage children to needed levels of intervention after exposure to community trauma, while also being consistent with the goals of each of the parent grants, and received funding in the fall of 2006 to conduct a small research project.

This project focused on schools for the identification of students in need of mental health services, in three small parochial schools. We proposed to provide universal screening at these schools among children whose parents consented/children assented to participate. Through screening, we planned to identify children meeting minimal criteria for PTSD symptoms who were potentially "in need" of intervention. Early on in discussion with NIMH, we considered whether to screen for PTSD symptoms related to the hurricane only, or whether to identify children with PTSD symptoms related to any past trauma. Taking the public health viewpoint that following disaster, all of disaster victims' health needs, regardless of their source, must be met, we decided to assess PTSD related to any type of trauma. This broad approach is in line with the empirical studies of risk factors for PTSD, reviewed earlier in this article, as well. Thus, the screening would examine not only trauma symptoms but also trauma history, including both subjective and objective exposures to hurricane traumas (Thienkrua et al. 2006) and to past traumas and violence exposure. This broad and inclusive approach was validated by information gathered during the course of the interventions—both in terms of what the children identified as the "worst" trauma they had experienced, and in relation to our study with specific children within the interventions, as will be illustrated by two case presentations.

In order to capitalize on the small funding and still be able to inform triage efforts, the project was designed to randomize students to either CBITS or TF-CBT, and examine which factors successfully predicted positive response to which treatment.

CBITS was provided in the children's schools during regular school hours, while TF-CBT was provided at Mercy Family Center and required that a parent or other caretaking adult bring the child to therapy and actively participate in treatment. Data stemming from this project are forthcoming.

CBITS

CBITS is a 10-group session and 1–3 individual session intervention designed specifically for use in schools. It is the most thoroughly tested school program at present, having undergone two controlled trials (Kataoka et al. 2003; Stein et al. 2003b). CBITS has been successfully implemented with children as young as 4th grade students and as old as 12th grade students, with many different cultural groups (including Native Americans and African Americans as well as Hispanics), and with populations who have suffered multiple forms of trauma. Although most of the school projects have screened and identified children based on exposure to community violence, the students focus on whichever traumatic experience is most upsetting to them, and thus the groups themselves address diverse traumatic experiences.

TF-CBT

TF-CBT is a 12–16 session intervention that includes child and parent, and typically is delivered in a clinical setting. Until the last 5 years, the evidence for TF-CBT was based primarily on studies of sexually abused children, all demonstrating superior outcomes for those treated with TF-CBT (Cohen and Mannarino 1996, 1997, 1998; Cohen et al. 2005). More recent evidence indicates that TF-CBT is also effective for multiply traumatized children (Deblinger et al. 2006). TF-CBT has also been evaluated for traumatized children following a community-level disaster within the Child and Adolescent Trauma Treatment and Services (CATS) Project following the September 11, 2001 terrorist attacks on the World Trade Center (WTC) in New York City. This study involved more than 580 children (445 with significant PTSD symptoms) and 80 therapists at nine community sites coordinated by Columbia University. Children receiving TF-CBT experienced significantly greater reliable decrease in PTSD symptoms than children receiving community treatment as usual according to a regression discontinuity analysis (Hoagwood et al. 2006).

Importance of Prior Violence Exposure in the Lives of Participants

Early in each intervention, children discussed their trauma exposures and with the help of the therapist, picked the trauma that was bothering them the most currently. If no particular trauma stood out at present, they picked the one that bothered them the most when it happened. These traumas were then used to create trauma narratives within the interventions, vital components of both the CBITS and TF-CBT protocols.

Trauma narratives were collected and categorized from 67 children participating in the research study who attended CBITS or TF-CBT treatment. Surprisingly, the majority of children did not create trauma narratives related to Hurricane Katrina. Thirty-one percent of the children in the research study created trauma narratives focused upon the grief associated with the death or incarceration of a loved one. Of interest is the fact that most of these deaths occurred before the storm or were unrelated to the storm itself. The second most common theme of the trauma narratives (25%) was direct exposure to the storm, or the immediate effects of their destroyed homes and communities. Next, 11% of children created trauma narratives related to their exposure to community violence, which was and continues to be an ongoing challenge in post-Katrina New Orleans. The remainder of trauma narratives focused upon accidents (9%), secondary trauma associated with the storm (7%), threat of death of a loved one (7%), domestic violence (4%), divorce (4%), and sexual abuse (2%). These findings, similar to those for children treated after September 11, 2001 (Hoagwood and the CATS Consortium in press), suggest that following disasters, many of the children who are likely to develop trauma symptoms are those who were already vulnerable due to having experienced previous traumas or deaths. This emphasizes the need for more community providers who are trained in evidence-based trauma treatments to serve these children, not only after disaster strikes, but in the pre-disaster period as well.

Case Descriptions

Note: Both of the following cases are representative composite case descriptions in order to protect confidentiality of children and families who participated in PFDL.

Two case descriptions illustrate the way in which both prior traumatic exposure and violence exposure secondary to the hurricanes were important factors in treatment.

CBITS Case: Adam

Adam was an 11 year-old African American male who was living in New Orleans East when Hurricane Katrina made landfall. Adam experienced the loss of many close family members before and after the storm. These losses included the death of his grandmother in 2003, great grandfather in 2004, great grandfather in 2005, and pet hamsters in April and May of 2006. His mother and father separated soon after the storm, and upon returning from Georgia, Adam reported having only short phone conversations with his father. Although Adam's home and neighborhood were destroyed, his school was located in a neighborhood of New Orleans that was less affected by the storm. As a result, he and his mother evacuated to Georgia for 6 months, and later returned to his pre-Katrina school for the 2006–2007 academic year. Adam's mother lost her steady job as a result of the storm, and was unemployed at the time that Adam began the CBITS group.

Adam could be described as being "book smart" with a keen desire to achieve in his school and be accepted into the Catholic high school of his choice. Adam's goals for the CBITS group, documented at the first group session included: feeling less nervous, feeling more happy, calming himself down when he felt upset, doing more things that he used to do, making better decisions, and to improve his math grade. Adam's baseline PTSD score was 17, which was significantly above the study's cut-off score of 12. His mother agreed to enter him in CBITS at school, stating that she was most concerned with his self-esteem,

social skills, low-frustration tolerance and his avoidance of public bathrooms. Adam had perfect attendance across the 10 weeks of CBITS groups.

Adam's trauma narrative, developed during two individual "breakout" sessions, was as follows:

> "You know I went to Georgia right? Yeah, well at my new school there were a bunch of guys who were giving me trouble over being from New Orleans, I was the only one at my school so I guess I stuck out or something. These guys were on the football team, most of them, they all hang out together. So one day I have to use the bathroom you see? And I'm doing what I need to do when I hear someone walk in the bathroom behind me. It was between classes so I was hurrying to get done what I needed to get done. Then I hear this dude call out to the hallway, I don't remember exactly what he said, just a bunch of names. I jumped and nearly wet on my pants. So I finished what I was doing and turned, just then I saw three dudes standing behind me. One of them had my book sack, and then one of the others pushed me back into the wall. It really hurt 'cause he pushed me back into the toilet on the wall. He started yelling at me, I don't remember what - but it wasn't good…four eyes…stuff like that, and these were black dudes…the other guy dumped the books out of my sack. Then the other dude grabbed me and threw me on the floor. It didn't hurt, but I got hit in the head with my book sack. Then one of them hit me in the face with something wet and nasty. Hit me in the face with a nasty wet paper towel with toilet water on it. Mashed it in my face, this is when my glasses came off so I couldn't see no more. They didn't break my glasses. They ran, and I got up and washed my face fast. Nasty smelly! I then got my books and papers in my book sack, found my glasses on the floor, and ran out - I was late for class and got sent to the office. I didn't want to tell the teacher what happened 'cause one of the dudes was in my class. Went to the office and I told the office lady what happened, and she went in and told the principal. I went in and told her all of this and she called my mom. My mom came and got me. I didn't go to school the next day, and my mom called the principal the next day to talk to her."

Toward the end of therapy, Adam was able to face his "demons" in the school bathroom and begin using them again, albeit never between classes when the bathroom was busy with other students. Adam during the last session of CBITS (graduation), stated that he had learned to problem solve his social situations without getting "out-of-control," he appeared to the CBITS therapists to possess more self-confidence and had created closer friendships with both the boys and girls in his group. His mid-year PTSD score was measured to be only 1, which remained stable through his post-treatment evaluation where his PTSD score was measured to also be a 1.

TF-CBT Case: Mandy

Mandy was an 8-year-old Caucasian girl who lived with her mother in Metairie prior to Hurricane Katrina. Mandy's parents had a long history of domestic violence, leading to eventual divorce. Mandy's maternal grandfather had died the year before Hurricane Katrina and Mandy was devastated by this loss since she and mother had lived with maternal grandparents following the divorce and she had been very close to her grandfather. Mandy had visits with her father every other weekend. She was visiting with father when the hurricane hit and father refused to allow mother to take Mandy to evacuate. As a result, Mandy waded through flood waters with father to the Super Dome and was eventually evacuated to Houston. She was separated from mother for 2 weeks. Grandmother's home was destroyed and the family is still living in a FEMA trailer. She scored 22 on the PTSD scale and had full PTSD on the diagnostic interview. Her mother agreed to participate in her TF-CBT treatment, saying that she was concerned about Mandy's nightmares, fears of storms, clinginess to mother, and irritability.

Mandy identified Hurricane Katrina as her worst trauma. However Mandy's narrative, developed during individual sessions, suggests that her current PTSD symptoms may have represented a retriggering of past symptoms, and that they were related in part to the feared traumatic loss of mother and violence from father:

> My name is Mandy. I am 8 years old. I go to school at ___. Now I live in a trailer with my mother, my mother's boyfriend, my brother and my grandmother. I like to sing in the choir and play with my friends. I used to go to a different school and live in a different place.
>
> When I was little I lived with my mom and my dad. They used to always fight. My dad would call my mom bad names. Sometimes he would hit her. It would make me feel bad. It made me think they didn't love each other. One time my dad hit my mom so hard she fell down and hit her head on the floor. She was bleeding, her face was covered with blood. I was afraid. I cried. I was sick inside. I thought she would die and I wouldn't have a mom. My dad told me shut up and call 911. I called and said hurry please hurry my mom is bleeding please Jesus hurry. They come and brought her to the hospital in the ambulance. My dad said she tripped and fell down the

steps. I was scared. I thought my mom would die and I was afraid of something happening to my dad. Why did this happen? Grandma came and sat and prayed with us. My dad said everything would be okay. I prayed to Jesus for my mom to come back to me. The doctor came and said that she would be okay. I cried and cried and said, Thank you dear Jesus.

I thought after that things would be ok. But it just kept getting worse at my house. One day my mom said we are going to leave. I thought what will Dad do, where will we live, I felt scared and confused but also relieved. No more fighting. No more worrying about my mom getting hurt. So we moved to another place, where my grandma lived. Then I started to visit my dad on the weekends. I really missed him in a way so I wanted to visit but the visiting didn't always go good. One visit my mom called. She wanted to come get me. She said there was a big storm coming. It was August 2005. She said we had to leave New Orleans and she wanted to come get me and take me with her. My dad said it was his weekend with me and she couldn't get me. I felt scared. I was thinking that I wanted my mom and grandma. My body felt shaky. I heard on TV that everyone was supposed to leave. I asked my dad when we were leaving and he said we're not going anywhere. I was afraid to say anything but he could tell I wanted to because he called me a scared-y cat. He said everyone who left was a bad name that I can't say. My mom called again and he called her the B-word and hung up on her. I felt all alone. I prayed to myself that I could change his mind. After a long time water started coming into the floors. My dad got pretty mad. I thought he was mad at me. The water was up to my ankles and then to my legs. Finally my dad said we should go. We went to the Super Dome. We walked through the water. It smelled bad. I saw bodies and one time I fell down and the dirty water got all over me. I was afraid. I thought I would never see my mother again. My father yelled at me to come on and not be a baby.

The Super Dome was the scariest part of all. There was no food there and the toilets was all broke and everything smelled terrible. It was so hot I felt sick. My dad kept yelling and I was afraid of what he might do. At night I heard people scream and cry. There was one nice lady next to me who reminded me of my grandma. She told me everything would work out ok. I heard her singing a song one time that I knew from choir. I asked my dad if I could sing with her for a minute and he said it was ok. I listened to her sing and it made me feel safer.

Finally the buses came and took us to Texas. I didn't know where my mother was or how I would ever find her. It took two weeks for us to find my mom and grandma and brother. When I finally saw my mom I never wanted to let her go, never ever ever ever again.

Now I am back in New Orleans with my mom and grandma. I have learned a lot of things from going through the storm and my family's problems. This is what I would tell other kids. Domestic violence is hurting people in the home. It hurts everyone in your family. Don't do it. If you're living with domestic violence it's not your fault. You're only a kid and you can't change grown ups. Try to get to a safe place. Call 911 if you can. Have a safety plan for disasters, it's better to be safe than sorry. Go to therapy, it will help you if you are scared. If you have a mom who loves you, you are the luckiest kid in the world.

At the end of therapy, Mandy and her mother reported that her symptoms were much improved. Her nightmares had ceased, and she was better able to tolerate separations from mother and her visits to her father. Her therapist tried to arrange a joint meeting with father as part of therapy, but this did not occur. However, Mandy felt more confident that she would be able to put a safety plan into place (calling 911, going to a neighbor's house, etc.) if this was ever needed during her visits to his house. At post-treatment, her PTSD score was 2, and she and her mother each only reported one symptom on the diagnostic interview.

Lessons Learned

Our study in this project, both in PFDL and in the NIMH research study, offer several lessons that may be useful for future work in children's mental health following disaster.

First, the challenge of obtaining funding for mental health intervention is large. Most federal funding mechanisms after disasters only provide for outreach and education, rather than treatment. For example, Crisis Counseling Programs (CCP) funded through the Substance Abuse and Mental Health Services Administration (SAMHSA) do not permit "office-based therapy" or "psychiatric treatment" http://mentalhealth.samhsa.gov/cmhs/EmergencyServices/ccp_pg01.asp. Federal and state financial assistance in providing trauma-informed treatment and services in the New Orleans area was limited due to the restrictions placed upon post-disaster mental health services by Sect. 416 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 100–707). The Crisis Counseling Training and Assistance Program, funded by the Federal Emergency Management Agency (FEMA) under the authority of the Robert T. Stafford Disaster Relief and Emergency Assistance Act required that crisis

counselors functioning in a post-disaster community (1) provide services to disaster survivors who are assumed to have a high level of functioning; (2) provide services that do not require continuity of care; (3) empower disaster victims to advocate for services needed; and (4) have short-term relationships with disaster victims. Our experiences in working with children show, however, that their mental health needs are complex, and require substantial investment in treatment.

In particular, the existing mental health infrastructure was disrupted, lowering the baseline level of care being offered. For instance, although nearly half the population was expected to return within a year of the hurricanes, six of New Orleans' nine hospitals remain closed and only 22 of 196 psychiatrists are still practicing in the area (Weisler et al. 2006). Similarly, the Louisiana Psychological Association reported that 36% of its members were displaced following the storm (Souter 2006), with many psychologists either leaving the area or losing their positions (Munsey 2006). In addition, it has been difficult to recruit mental health professionals to the New Orleans area, especially those who are child-focused, and willing to commit for long-term service to the community. This recruiting challenge has been eased significantly over the past year by the increased utilization of the National Health Service Corps, U.S. Department of Health and Human Services, which offers educational loan repayment for qualified and committed clinicians who offer the New Orleans community a long-term commitment.

PFDL was created and has been sustained through the generous donations and support of several public, private, and non-profits organizations over the past three-and-a-half years. During the first year following Hurricane Katrina, it was extremely challenging to gather financial support for PFDL, a new and "inexperienced" disaster response program. But it was PFDL's core features of evidence-based practices, researcher–clinician collaboration, electronic record keeping, and the utilization of the knowledge and expertise of the school-based counselors that initially garnered short-term financial support for the program. The long-term financial support of PFDL can be attributed to the multitude of successful clinical outcomes that have provided students with prompt and appropriate mental health interventions and services.

Obtaining funding to evaluate aspects of this study proved similarly challenging, though we were able to leverage existing grants and obtain supplements that made some field work possible. Still, the funding was very modest, allowing only a small field trial.

Second, as demonstrated by the case studies and the traumas chosen by students as the most bothersome, we can see that the trauma of the disaster is just one part of the problem. Disasters offer an important window of opportunity to address both disaster-related PTSD and PTSD related to other events; and disasters may most traumatize those children who are already vulnerable due to previous traumatic experiences. The fact that Hurricane Katrina was not the most common trauma described in children's narratives is consistent with findings from other disaster studies (Hoagwood and the CATS Consortium in press). This has important implications for planning in the post-disaster period. Short-term, disaster-focused interventions are not enough—rather, sustained, trauma-focused approaches within a public health framework are needed. However, current funding mechanisms for post-disaster mental health do not match this need.

Third, following disaster, schools offer a possible venue for identifying children in need of intervention. While few schools have screened students for PTSD symptoms following community disasters (Cohen et al. 2006), a very rapid school-based screening occurred in 19 middle and high schools within 6 weeks after the Oklahoma City bombing. In contrast, a representative sample was not screened until 6 months after the September 11th terrorist attacks and universal screening did not occur in New York City schools after this disaster despite significant resource allocation for mental health services (Pfefferbaum et al. 2006). An examination of schools' responses to the mental health needs of children displaced by Hurricanes Katrina and Rita demonstrated that few schools or school districts implemented routine screening, but rather relied on their usual referral process for mental health care, in addition to conducting outreach and educational activities for displaced students (Jaycox et al. 2007). School districts that did screen detected a high level of need, but among those that did not, some did not perceive any need in their students. In the study described here, we used two different ways to identify children—using referrals from schools in PFDL, and using a universal screening questionnaire in the research study. Both means of identification proved feasible, but turned up children with varying needs, including issues around educational delay, severe mental illness and comorbidities, as well as disaster-related stress reactions. Thus, a system that screens children must be ready to handle a wide array of problems.

Summary

PFDL could be a prototype for providing stepped-care mental health screening and treatment for large numbers of significantly affected children after a community-wide disaster, although empirical data are still needed to back up its components. This stepped care approach makes inherent sense in post-disaster communities that are significantly lacking in the ability to provide adequate intermediate and

long-term mental health care because it creates timely access to appropriate levels of mental health care, with a relatively small amount of professional resources. It is a comprehensive approach to identifying, triaging, and providing needed care to children, regardless of the reasons for their mental health needs, and attentive to finding the appropriate level of care for each. Our study demonstrated clear need for service among students exposed to this disaster, and attention to the varying mental health needs, moving beyond the singular focus on disaster-related symptoms, will be important in future disasters. Our research project will shed some light on how interventions can work post disaster, but we already know a good deal about how to help children who face trauma, and must find new ways to roll out such programs in the weeks, months, and years to affected communities. This includes finding ways to fund such efforts so that sustained and effective programs can be implemented.

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