Pediatric Round Table

Interventions for Children Exposed to Violence

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Table of Contents

Page

Participants vi

Preface ix

Introduction 1

Preventing and Treating Childhood Violence Worldwide:
A Collaborative Effort 3
Karin Gillespie, MBA and Alicia F. Lieberman, PhD

Section 1. Foundation: What Factors Influence Resilience in Children? 13

Abstracts 15

Recovery of Children and Adolescents After Exposure to Violence:
A Developmental Ecological Framework 17
Robert S. Pynoos, MD, MPH and Alan M. Steinberg, PhD

Understanding the Effects of Early Life Stress on Brain Development 45
Victor G. Carrión, MD

Violence in Infancy and Early Childhood:
Relationship-Based Treatment and Evaluation 65
Alicia F. Lieberman, PhD; Allison Briscoe-Smith, PhD; Chandra Ghosh Ippen, PhD; and Patricia Van Horn, PhD

Section 2. Models of Collaboration: The Mental Health and Legal Systems Working Together 85

Abstracts 87

Mental Health and Judicial Partnerships: Collaborating to Reduce
the Effects of Abuse on Children and Families 89
Joy D. Osofsky, PhD and Judge Cindy S. Lederman

Mental Health-Law Enforcement Collaborative Responses to
Children's Exposure to Violence 111
Steven Marans, PhD; Robert A. Murphy, PhD; Robert L. Casey, PhD; Steven J. Berkowitz, MD; and Miriam Berkman, JD, MSW

Section 3. Family or Community Violence: Exploring Prevention and Intervention for School-Age Children 135

Abstracts 137

Exposure to and Experience With Family Violence:
Issues for Intervention and Prevention 139
Richard J. Gelles, PhD

Table of Contents (continued)

Page

Ecological Treatment for Parent-to-Child Violence 155
Cynthia Cupit Swenson, PhD; Lisa Saldana, PhD; Cathy Dodds Joyner, MEd; and Scott W. Henggeler, PhD

School-Based Interventions for Children and Adolescents Exposed to Chronic Community Violence 187
Michele R. Cooley, MEd, PhD and Sharon F. Lambert, PhD

Section 4. Social and Economic Implications: Outcomes for Both the Individual Child and Society 209

Abstracts 211

The Second Mouse's Agenda: A Comprehensive Model for Preventing and Reducing Violence in the Lives of School-Age Children 213
Philip B. Uninsky, JD

Residential Mobility Interventions as Treatments for the Sequelae of Neighborhood Violence 237
Greg J. Duncan, PhD; Elizabeth Clark-Kauffman, PhD; and Emily K. Snell, PhD

Section 5. Natural and Man Made Disasters: Unique Interventions for Children in Violent Situations 271

Abstracts 273

Social and Economic Impact on Children Exposed to Violence in Cambodia, and a Model for Action 275
Sochua Mu Leiper, MSW

Child-Oriented Systemic Interventions in a Community Exposed to Disaster: The Tel Aviv Model 293
Nathaniel Laor, MD, PhD; Leo Wolmer, MA; Smadar Spirman, MA; and Ze´ev Wiener, MD

Mobilizing Trauma Resources for Children 311
William W. Harris, PhD; Frank W. Putnam, MD; and John A. Fairbank, PhD

Section 6. Summary 341

Speaking With One Voice and Collaborating on Behalf of Traumatized Children 343
Alicia F. Lieberman, PhD

Section 5: Natural and Man Made Disasters: Unique Interventions for Children in Violent Situations

Mobilizing Trauma Resources for Children

William W. Harris, PhD
Frank W. Putnam, MD
John A. Fairbank, PhD

Introduction

Childhood trauma is a major, worldwide public health problem. For many children, the unaddressed consequences of trauma will affect them adversely for their entire lives, affect the lives of those around them and ultimately affect the lives of their own children. The effects of childhood trauma can be pervasive, reducing school readiness and performance, diminishing cognitive abilities, causing or increasing substance abuse, and causing crippling mental disorders and costly physical health problems. Rapid identification of children who have been traumatized could lead to earlier interventions and thereby limit the negative sequelae for victims. Early interventions will reduce the enormous costs of trauma for both victims and society.

Incidence of Childhood Trauma

Children face a high risk of experiencing serious trauma: For example, more than 25% of the children in the Great Smoky Mountains Study (GSMS), a longitudinal trial of the mental health of children living in the western counties of North Carolina, experienced at least one traumatic event by the age of 16 years.[1] These traumatic experiences included the following:

- traumatic loss of a loved one
- exposure to life-threatening accidents, fires and natural disasters
- maltreatment by caregivers
- other forms of serious violence and victimization

A recent study of children in grades 4 through 12 in New York City (NYC, NY) found that 64% had experienced at least one significant traumatic event prior to the September 11, 2001, attack on the World Trade Centers.[2] Indeed, the number of children in the United States who have been the victims of serious interpersonal violence is shockingly high: In 1997, the National Survey of Adolescents in the United States, sponsored by the National Institute of Justice, reported that nearly 4 million adolescents ages 12 years to 17 years experienced a serious physical assault during their lifetime.[3] This nationally representative survey of American teenagers also found that 9 million youth had witnessed serious violence during their lifetime.

While a precise figure of the number of children maltreated by caregivers each year does not exist, the number of children nationwide who have experienced abuse, neglect and/or exposure to domestic violence is estimated to exceed 3 million.[4-6] The Child Maltreatment Report (CMR) prepared by the National Child Abuse and Neglect Data System (under the auspices of the US Department of Health and Human Services' [USDHHS] National Center on Child Abuse and Neglect) aggregates child protection reports annually from all 50 states: In 2000, the CMR estimated that approximately 879,000 children were victims of child abuse and neglect[7] — a victimization rate of 12.2 per 1000 children. Among these victims, 63% suffered some form of neglect, 19% were physically abused and 10% were sexually abused. Many of these children suffered multiple forms of abuse and neglect, but, for reporting purposes, were included in only one category. General population surveys yield rates of child abuse and neglect that are 2 to 3 times higher than in official child abuse reports, and there is a significant overlap (estimated to be 30% to 60%) between families where there is child abuse and families that experience domestic violence.[8]

Consequences of Trauma

As a group, traumatized children manifest significantly higher rates of behavioral and emotional problems and academic failure than do nonabused children: Common problems include depression, anxiety, aggression, conduct disorder, sexualized behaviors, eating disorders, somatization and substance

abuse.[9] Although the relative contribution of abuse and neglect versus family environment and genetic factors to these psychopathologies has been debated, recent studies of children who are twins confirm a significant causal relationship between child abuse and major psychopathology.[10] These behavioral and emotional deficits predispose children to negative adolescent trajectories that include early drop-out from school, substance abuse and promiscuity, and they contribute significantly to adverse adult outcomes, such as depression, posttraumatic stress disorder (PTSD), substance abuse, poor medical health and low occupational attainment.[11] Among groups of twins where one twin has experienced child abuse and the other twin has not, the abused twins exhibit significantly higher rates of depression, attempted suicide, conduct disorder, alcohol dependence, nicotine dependence and sexual promiscuity.[9,12,13] Although the research base on emotional abuse, neglect and exposure to domestic violence is not as extensive as it is for child abuse, the findings are similar.[14]

Abused and neglected children also perform more poorly in school than do nonabused children.[15-18] Cognitive deficits — which are perhaps abuse related — may trigger the emergence of behavioral difficulties in some abused children[19,20]: For example, children who are having difficulties learning may act out or be inattentive. These behavioral problems may lead to rejection by peers and teachers, thereby decreasing opportunities for positive instruction, classroom participation and supportive feedback.[21,22] In fact, a longitudinal study of sexually abused girls by Trickett, McBride-Chang and Putnam found that teachers who were blinded to the abuse status of these children rated the maltreated girls as significantly less likeable than matched control girls who were not abused.[23]

Studies have also identified the significant effects of child abuse and neglect on IQ scores and language ability.[17-24] Children with maltreatment-related PTSD showed significant impairments on attention tasks, abstract reasoning and executive functioning when compared with matched healthy children.[25] A population-based sample of more than 1000 pairs of twins found that exposure to domestic violence accounted for approximately 4% of the variation in child IQ and was associated with an average decrease in IQ of 8 points.[26] This is comparable to the average decrease of 3 to 4 IQ points caused by significant exposure to lead.[27,28]

What Constitutes Trauma?

While children experience many types of trauma, the most common forms occur typically at the hands of their parents and/or caregivers.[29] Neglect and physical and sexual abuse are often found in combination with emotional abuse and exposure to domestic violence.[5] In addition, many neglected and/or abused children live in unstable, crime-ridden neighborhoods, and therefore are also exposed to violence in their schools and communities.[30]

Researchers seeking to understand the effects of trauma on child development often draw distinctions between "acute" (or single-incident) trauma and "chronic" (or repetitive) trauma, sometimes referred to as Type I trauma and Type II trauma, respectively. Single episodes of serious accidental trauma can cause significant problems for a child. However, in a stable and supportive caregiving environment, symptoms often resolve, so that the rate of serious long-term complications, such as PTSD, is relatively low.

Chronic trauma, which involves either sustained or repetitive traumatic experiences, occurs typically in an environment where there is minimal adult support or healthy caregiving. Children exposed to chronic trauma generally have significantly worse outcomes than do those children who are exposed to acute accidental traumas.[31] In addition, the ongoing failure of parents or caregivers to protect the child is experienced as betrayal and contributes further to the adversity of the experience. When trauma is inflicted on a child deliberately by a parent or caregiver, as is often the case in child abuse, the intentional quality of that experience exacerbates its severity.

How Does Trauma Affect Children?

Research has identified a set of critical developmental processes, both psychological and biological, that traumatic experiences affect.[32] These processes, often conceptualized as developmental threads, run the course of the child's development and set the pattern for adult life. They broadly shape individuals' capacity to self-regulate in the face of stress, their sense of self and their ability to relate to others. The age and gender of the child, the number and types of traumas, the duration of the experience(s), the presence or absence of supportive adults and other factors influence developmental outcomes in ways that are presently only partially understood.[33] However, it is well established that significant trauma disrupts normal development in ways that are

detrimental to many areas of adult functioning and often leads to costly emotional and physical problems that could be avoided or minimized by earlier intervention.[34]

The capacity for "emotional regulation" is one of the major casualties of significant early-life trauma. Traumatized individuals often suffer significant mood swings, anger, irritability and profound depression. Numerous studies have established that individuals who have a history of child abuse suffer from major depression at nearly 3 times the rate of nonabused individuals.[33] Serious problems with the modulation of mood and the regulation of anger can greatly complicate a child's ability to perform in school and to develop healthy peer relations — and may lead to situations that result in injury to self or others.[32] Similarly, the ability to regulate attention is often compromised in traumatized children. Problems with concentration, sometimes due to the symptoms of PTSD, such as hyperarousal or hypervigilance, may also impair school performance.[35]

The social development of the traumatized child is further compromised by significant problems with self-esteem and sense of identity. One of the most devastating effects of child abuse is that abused children often hate themselves and express these feelings through self-destructive behaviors. Indeed, studies have established that a history of child abuse increases suicide attempts by as much as 12-fold.[11,33] A process that runs parallel to the abused child's problems with self-esteem is his/her extreme difficulty in forming healthy social relationships with peers and partners. Disruptions in attachment — the fundamental parent/caregiver-child bond — are believed to be responsible for the difficulty in developing trusting, reciprocal relationships. Difficulties with modulation of anger and mood further compromise the ability to form healthy social relationships.

Lastly, research is finding that traumatic experiences, such as sexual abuse, can actually affect the development of the brain and impair important neuroendocrine systems.[36-43] The areas of the brain affected appear to be those associated with the regulation of emotion, as well as those affecting learning and memory.[36-38] Other brain regions associated with the control of impulses and reasoning, problem solving and judgment are also impaired and, therefore, have less influence on an individual's behavior.[36-38] Major hormonal systems, such as the hypothalamic-pituitary-adrenal axis, which plays a crucial biological role in buffering the physical effects of stress, are significantly

dysregulated in victims of childhood trauma.[39-43] In addition, the sympathetic nervous system — often referred to as the "fight-or-flight" system — has been found to be hyperactive in traumatized individuals, leading to increased arousal and hypervigilance.[42] This hyperactivity of the fight-or-flight system probably contributes to hyperarousal, poor concentration and increased irritability, all of which take a toll on school and social success.

Protective Factors and Resiliency

By studying children in various adverse situations, developmental psychologists have identified several "protective factors" that are associated with increased resistance to stress.[34] Protective factors are individual or environmental characteristics that predict or are correlated with positive outcomes for children.[34] The most important of these protective factors[34] include the following:

- intelligence
- the capacity for emotional regulation
- the presence of social supports provided by caring, competent adults
- a positive belief about oneself
- belief in the safety and fairness of the situation
- a motivation to act effectively on one's environment

Traumatic experiences, including child abuse and neglect, may seriously undermine these protective factors, even to the point of reducing IQ significantly, which may be the single most important protective factor.[26]

Even co-occurring multiple protective factors can be overwhelmed by significant levels of trauma. The Adverse Childhood Experiences (ACE) study, a decade-long collaboration between Dr. Robert Anda of the Centers for Disease Control and Prevention and Dr. Vincent Felitti of the Kaiser Permanente Department of Preventive Medicine, examined the cumulative effects of multiple adverse childhood experiences on physical and mental health.[11] Using a simple 0-to-6 scoring system, which counts the numbers and types of ACEs that occur before the age of 18 years, the study has

repeatedly found that ACEs are correlated positively with physical and psychological problems in children: As the number of ACEs increases, there is a graded increase in the number of physical and psychological problems.[11] Compared with subjects who have no ACEs, individuals who have 4 or more ACEs are at a significantly greater risk for a broad range of serious health problems. The ACE study provides clear evidence that multiple traumas and/or chronic trauma can overwhelm the psychological and physical well-being of all but the most resilient of children.

Trauma as a Risk Factor

Generally, "risk" refers to an increased probability of negative outcomes occurring among members of a group who share one or more characteristics.[34] The factors that *predict* or are *correlated positively with* these negative outcomes — either in terms of symptoms or of a failure to achieve one's potential — are termed "risk factors." Risk factors can be genetic, individual or environmental, and they interact with protective factors in complex ways. Risk factors often co-occur, particularly in highly traumatizing environments. In combination, they are more predictive than they are in isolation. Studies of risk and resiliency in children include trials of broad and cumulative risks, trials of stressful life events and trials of acute trauma and chronic adversity.[10,11]

Studies have identified childhood trauma and adversity as major risk factors for many serious adult mental and physical health problems. Depression is at least 3 times more prevalent in victims of child abuse than it is in the general population.[33] Depression, one of the leading public health problems worldwide, is estimated to have cost the United States approximately $44 billion in lost worker productivity in 2003.[44] The ACE study found that children who have 4 or more ACEs have an increased risk of four- to 12-fold for alcoholism, drug abuse and suicide attempts, and two- to fourfold for smoking, poor general health, sexual promiscuity and sexually transmitted diseases.[11] These children were also more likely to be physically inactive and/or severely obese. Trauma, through its effect on health-risk behaviors, such as smoking and obesity, contributes to multiple health problems, including heart disease, cancer and liver disease.[11] Similar results have been obtained in several other studies, including trials of twins that controlled for genetic factors.[10,45,46]

Childhood trauma is not a risk factor that is confined merely to one generation: The children of victims of child abuse and neglect are at a significantly increased risk of being victimized themselves.[47,48] The cumulative costs of child abuse and neglect, particularly when aggregated across generations, far outweigh the costs of prevention and early intervention programs.[49]

Assessment and Evaluation Strategies and Issues

Systematic and large-scale public health screenings of children for the detection of trauma-related symptoms and behavioral problems offer critical opportunities and significant challenges. Public health screenings generally involve the administration of a test or a selective examination to individuals who are not overtly symptomatic for the purpose of classifying them with respect to a condition of interest. In some instances, the individual may be asymptomatic (eg, using a Pap smear to detect early cervical cancer), while in other instances, the individual may be symptomatic, but the underlying disorder has not been identified (eg, screening for depression). Generally, screening tests are not definitive, and further diagnostic evaluation is required for individuals who test positive. However, screening has played a critical role in public health for many years and, in many cases, has become a routine part of standard medical care.

Public health screening always involves a complicated trade-off among several issues that must be considered for each condition. A disorder is considered appropriate for screening if it meets all of the following criteria[50]:

- It must be serious.
- Early treatment must make a significant difference in outcome.
- The prevalence of the disorder must be sufficiently high among the population screened.
- The ultimate costs of the outcomes associated with the disorder must be high enough to offset the costs associated with screening, further evaluation and treatment.

Universal Versus Targeted Screening for Traumatized Children

Universal screening involves testing an entire population or as much of that population as can be reached readily. Universal screening of adults for hypertension can be justified because high blood pressure is a serious condition

resulting in significant mortality.[51] In addition, its prevalence is high: It has been estimated that up to 25% of all adults in the United States have some degree of hypertension.[52] Universal screening for phenylketonuria, a rare (one in 15,000 live births) congenital absence of a liver enzyme, is also justified because the resulting, irreversible, severe mental retardation can be prevented when detected by a simple, accurate, inexpensive, one-time test. However, when a condition is relatively rare, and/or the test to detect the condition is not entirely accurate or is very expensive, screening must be focused on a high-risk population in order to be feasible and justifiable.

Although the prevalence of trauma among children is high in the United States, it is not evenly distributed across the population. Certain groups of children have dramatically higher rates of trauma and/or exposure to violence and would benefit from early detection and intervention. The following are considered high-risk groups:

- children who are known to have been abused and/or neglected (most of whom receive little or no intervention for the trauma)[53]
- children in foster care; 70% to 80% of children are placed in foster care because their parents and/or caregivers have abused them or their siblings[54,55]
- children who witness domestic violence and/or the violent death of a parent, caregiver, sibling or friend[56]
- children who are victims of catastrophic accidents or mass casualty events, such as those associated with school violence, terrorism or natural disasters[57]
- children in the juvenile justice system[58]
- refugee children from countries that have had or are having major armed conflicts and/or civil disturbances[59]
- children who require psychiatric hospitalization for certain symptoms or behavioral problems (eg, suicide attempts and running away)

Because trauma presents in many different forms for children of different ages, genders and cultures, there is no simple, universal, highly accurate screening measure. Moreover, it is not feasible for many of the service systems now working with these children to definitively establish whether specific traumatic events have occurred. Therefore, screening approaches for

trauma should aim to identify children who have a constellation of risk factors, such as poverty, homelessness, multiple births during adolescence and other vulnerabilities and behavioral problems that are highly associated with traumatic antecedents: The latter include symptoms of PTSD (which vary with age[60]), sexualized behaviors, certain fears and aggressive behaviors.

In order to screen very young children, parents, guardians and/or other involved adults would need to participate in the screening process. Older children and adolescents could complete their own self-report measures. Positive screens would require a comprehensive follow-up evaluation conducted by a professional familiar with the manifestations of childhood trauma.

Assessing Screening Tools

The *validity* of a screening tool is measured by how well it does what it is supposed to do — which is to ascertain whether individuals are positive or negative for a particular disorder. The *effectiveness* of a tool is quantified by calculating the following 3 elements:

- sensitivity — the probability of testing positive if the disorder is truly present
- specificity — the probability of testing negative when the disease is truly absent
- positive and negative predictive value — positive predictive value is the probability that a person who tests positive actually has the disorder; negative predictive value is the probability that a person who tests negative is truly free of the disorder

While the ideal test is highly sensitive *and* highly specific, in practice there is a trade-off when developing a screening tool that involves systematically weighing the probability of having false-positives and false-negatives. Ultimately, the feasibility of a screening program depends on its acceptability, its cost-effectiveness and the "yield" of cases. The yield is often quantified by calculating the predictive values of the test. Before any screening program can be instituted on a large scale, it is necessary to establish these parameters for the given measure in the population being screened.

Candidate Screening Measures for Childhood Trauma

Much work remains to be done before the populations who are at high risk for trauma-related negative outcomes can be effectively screened. However, several childhood trauma measures have been developed that can serve as starting points for pilot screening programs[61,62]: One example is a simple screening measure reported on in *JAMA: the Journal of the American Medical Association* — the Screening Tool for Early Predictors of PTSD, which predicts PTSD in children who were seriously injured in accidents or burned in fires.[63] Using 12 questions — 4 directed at the child, 4 completed by the parent or caregiver and 4 answered with information gleaned from the child's medical record — it is possible to predict subsequent symptoms of PTSD with good accuracy. The sensitivity of the measure for predicting posttraumatic stress at 3 months postinjury was 0.88 for children and 0.96 for parents/caregivers, with negative predictive values of 0.95 for children and 0.99 for parents/caregivers.

Other trauma-focused behavioral measures, such as the Trauma Symptom Checklist-Child, are well along in their development and validation processes and could be widely deployed in the near future.[61] In addition, widely used general behavioral measures, such as the Child Behavioral Checklist (CBCL), could be calibrated as trauma screening measures based on analyses of samples collected previously from traumatized children[64]: For example, in the GSMS, Costello and colleagues successfully used items from the "Externalizing Problems Scale" of the CBCL to screen a general population of children living in western North Carolina.[65] Subsequently, the investigators conducted detailed interviews with all children who scored above a predetermined cutoff point — the top 25% of the CBCL scale's total scores.

The National Child Traumatic Stress Network (NCTSN), which is sponsored by the Substance Abuse and Mental Health Services Administration of the USDHHS, is comprised of more than 50 centers nationwide that provide treatment and services to traumatized children and their families. Located in 32 states and the District of Columbia (DC), the NCTSN is well-situated to undertake the validation of these and other measures across a wide range of age groups, service sectors, cultural settings and types of trauma, including exposures to mass casualty events.[66]

Ethical Issues in the Assessment of Traumatized Children

One of the major — but often unacknowledged — reasons that children are not actively screened for trauma is that all 50 states and DC already have mandatory reporting laws that require certain persons (who vary by state, but usually include physicians and teachers, and often include law enforcement personnel, social workers, child care providers and mental health professionals) to report any and all suspicions of child abuse or neglect to the proper authorities. There are legal repercussions if they knowingly fail to do so.[67] Unfortunately, rather than placing themselves in an awkward situation — where they must make formal reports of suspicions of child abuse — many professionals who fall under these mandated reporting requirements choose not to inquire about traumatic experiences, especially child abuse and neglect. In addition, researchers conducting surveys of mental health issues in children may deliberately choose not to inquire about trauma in order to avoid the obligation of mandatory reporting. Therefore, given the current environment, any widespread screening program intended to detect trauma in children must have an established and well-vetted protocol for handling suspicions of child abuse and neglect.

False-positive screens are yet another significant concern. Virtually all screening measures will misidentify some individuals as having a particular condition, when, in fact, they do not. Reporting a false-positive trauma screen to child welfare authorities could initiate a very stressful investigation and conceivably cause harm to the child and/or family. This risk must be balanced against the need to protect children from the further harm that could result if the proper report were not made for a case that is true-positive. One way to minimize such false-positive risks is to use multiple evaluation measures that are administered serially. Employing multiple evaluations tends to increase the specificity of the screen because a series of measures that prove positive is more likely to represent a true disorder. The threshold for mandated reporting can then be set at a much higher level than that which is based on a single screening measure.

On a cautionary note, it is generally considered unethical to screen for a medical or psychological disorder if there is no effective, evidence-based intervention known to treat the disorder. When such an intervention exists, a secondary concern is whether that intervention is truly available to and accessible by the population being screened. The creation of a systematic, large-scale screening program to identify traumatized children must proceed

in concert with deployment of evidence-based interventions that are readily accessible to the populations of children being screened. The NCTSN is perhaps the best-positioned organization to couple trauma screening across multiple systems serving children with effective therapeutic interventions in the same communities.

An Asset-Focused Public Health Approach to Childhood Trauma

Epidemiological evidence has shown that in the United States there are sufficiently large numbers of undiagnosed and/or untreated children who have been affected by trauma to warrant significant public concern — both for affected children and society at-large.[10,11] Indeed, we consider the situation to be a serious public health emergency that warrants the following actions in order to mobilize vital resources for these children and their families:

- *Accumulate and aggregate the various epidemiological studies pertaining to traumatized children.* While these studies often provide point-in-time counts of the number of teen pregnancies, reported cases of child abuse, incarcerated juveniles and/or the incidents of domestic violence involving children, they rarely acknowledge the frequent overlaps among these categories: That is, many of the children accounted for in one category also appear in several other categories.
- *Systematically identify, study and facilitate the development of relationships and partnerships among trauma service providers and agencies that have preexisting relationships with and responsibilities for these children and their families.* These partnerships will allow researchers and clinicians to identify and serve affected children in a more timely and effective manner.
- *Move beyond the boundaries of traditional trauma agencies and programs into the schools, juvenile detention facilities, substance abuse treatment programs for adolescents, shelters and other residential settings where traumatized children live, work and play — and establish a systematic program for screening, diagnosing and treating them.*
- *Assess the unmet needs for services and match those identified needs with the capacity to deliver the required services.* This process requires a clear-headed approach that identifies the available mental health assets and the entities that have the capacity to deliver these assets to the locations where needs exist. At this stage, it is likely that we will find a mismatch

between needs and assets. If this is the case, a separate analysis must be undertaken to determine how to address this situation. A critical part of the analysis will include understanding insurance program funding and training requirements for partner agencies and primary trauma paraprofessional service providers.

- *Identify, examine, experiment with, develop and implement best-practice strategies and protocols for reaching and helping as many of these affected children and families as possible.* This will require a long-term commitment by individuals in the trauma field working in partnership with policy makers, elected officials and their staffs.
- *Evaluate continuously all of the outlined efforts with regard to program quality, effectiveness and other outcomes.* Continuing to learn and being open to outcome research is important, but it is not necessary to wait for the "perfect" research answers to begin this challenge: As Voltaire noted, "the best is the enemy of the good."[68]
- *Convene a group of policy and political analysts to explore the opportunities for and the barriers to securing the necessary government supports for the actions described here.* Some policies can be affected by state and federal regulations. Other policies, particularly those concerning funding streams, will require legislative action.
- *Initiate a public education project to highlight child trauma as a significant public health emergency.* Policy analysts, elected officials and their staffs and the public at-large must be cognizant of child trauma and neglect, and the effects on these children of experiencing directly and being exposed to various traumatic events. They must understand that there are significant personal and societal consequences associated with the failure to acknowledge and address this public health emergency. Furthermore, it is imperative for them to understand that the timely diagnosis and provision of appropriate mental health services can make real and measurably positive differences in the lives of these children and their families, their developmental trajectories and, ultimately, for society.
- *Become more vigilant about identifying and acting upon opportunities to prevent childhood traumatic events from occurring in the first place.* Professionals in the trauma field have learned a great deal about preventing teen pregnancy, decreasing the incidence of chronic domestic violence,

intervening successfully — if rarely — in cases of alcohol and substance abuse and more. Any new frontal attack on this public health emergency will require an active, dynamic prevention component.

Adopting a 5-Pronged Model to Preventing and Treating Childhood Trauma

If the action plan in the preceding section seems overly ambitious or unrealistic, consider the recent experience with crime reduction in NYC. A transit police officer observed that some crime "posses" frequented certain places at specific times and acted in predictable ways to victimize the public. The transit police had not considered the mismatch between their law enforcement assets and the predictable times and locations of crimes. When their crime-fighting assets were mapped out and matched to the most probable crime locations and times, a dramatic reduction in crime ensued.[69]

We believe that a similar model of observation, analysis, experimentation, implementation and evaluation can be adopted by those in the field of trauma to address the public health emergency of childhood trauma. The idea of moving resources from where they are currently located to problem areas in order to be more efficient in the delivery of services to specific populations is not new. Indeed, over the last 15 years, professionals in the field of trauma have implemented this approach. Working in partnership with other professional fields, they have achieved some important successes, 4 examples of which follow.

Legal Partners Aid Underprivileged Parents — Boston, Massachusetts

In 1989, Boston City Hospital pediatrician Dr. Barry Zuckerman and his colleagues noticed an alarming increase in the number of women delivering babies who had crack cocaine in their systems. Historically, the standard procedure to address this problem had been to refer the mothers to a substance abuse counseling program. Unfortunately, "referring out" became a self-fulfilling prophecy: These mothers rarely succeeded in getting the substance abuse services they needed so desperately, although they did manage to bring their newborns to the Boston City Hospital Pediatric Primary Care Clinic for care.

Noticing this, Dr. Zuckerman formed a partnership with a local substance abuse program. He brought counselors directly on-site at the Pediatric Primary Care Clinic to serve the mothers in this familiar setting. His reasoning was clear: Mothers loved and cared about the health of their babies. Obviously, these mothers had a vested interest in bringing their babies into the clinic for care. On-site substance abuse counselors used the pediatric visit as an opportunity to provide critically needed substance abuse counseling to the mothers.

Noting the success of this effort, Dr. Zuckerman and his colleagues subsequently formed additional partnerships, bringing more services into the pediatric setting, including early literacy training for mothers and early childhood education (eg, the successful national program, "Reach Out and Read," which currently serves more than 1.5 million children at 1800 pediatric sites nationally).[70] They also brought public interest lawyers into the hospital's Primary Care Clinic to help underprivileged new mothers and fathers assure their access to food, safety, housing, health care, mental health care, social services and other goods and services that they were legally entitled to receive. This model of situating lawyers where they can serve clients directly is being replicated in several locations around the country (B. Zuckerman, MD, personal communication). Dr. Zuckerman and colleagues also introduced "Healthy Steps" into the Primary Care Clinic. "Healthy Steps" is a program that includes an on-site child development specialist who, as part of the pediatric team, provides information and support for parents to promote their children's development. In each of these cases, professionals from other fields were brought to the pediatric site where the current and future clients — children and their families — had either a preexisting or a potential relationship.

Community Policing Model — New Haven, Connecticut

In the early 1990s, Dr. Steven Marans, a psychoanalyst, and his colleagues at the Yale (University) Child Study Center (YCSC) created the Child Development-Community Policing (CD-CP) program in partnership with the New Haven (Conn) Department of Police Service (NHDPS). (Read more about the CD-CP in Dr. Marans' chapter in this publication.) The CD-CP came into existence after the NHDPS had already implemented a model of

community policing that assigned officers to permanent neighborhood beats and emphasized the development of close, problem-solving relationships with the citizens of these communities. Because of the high rates of community violence that were fueled by the explosion in the crack-cocaine drug market, then Chief of Police Nick Pastore also wanted to focus on ways officers might be of greater help to children and families affected by the violence around them — in their homes, schools and neighborhoods. For help, he turned to Dr. Donald Cohen, MD, former director of the YCSC, as well as to Dr. Marans and other colleagues at the YCSC. Former Chief Pastore recounted the following experience that demonstrated the opportunity and the great need for help in addressing these issues:

> The NHDPS was called to a crime scene where a woman had been stabbed to death. As he was leaving the scene, Chief Pastore noticed several young children who had witnessed the woman's murder. He recognized that ignoring these children — leaving them alone and unaided in dealing with their traumatic experience — was unacceptable. He also realized that his police officers alone could not help the many children and families caught up in the scenes of violence that the police responded to on a daily basis. Fortunately, Chief Pastore found ready, potential partners at the YCSC, where Dr. Cohen and his colleagues recognized the limits of their clinic-based approaches to identifying and providing help to the many psychological casualties of violent trauma.

The CD-CP now trains police officers in principles of child development, human functioning and trauma as they apply to policing strategies and responses. Simultaneously, the program trains clinicians in policing practices as they apply to acute and follow-up trauma interventions (that are community- and clinic-based) as well as in forensic work and crisis consultation. Clinicians at YCSC are on-call 24/7 to respond immediately — on the scene to police calls for domestic violence and other crises that involve children and families. The CD-CP conducts weekly case conferences that include senior police personnel and YCSC clinicians, as well as other partners from the schools, child protective services and the juvenile courts. During these conferences, participants discuss and develop coordinated strategies for responding to current cases of domestic violence that involve children. The CD-CP program has now been replicated in 14 communities nationwide, and a pilot program designed to develop a similar effort with fire departments is in its initial stages.[71,72]

Court and Child Trauma Project Work Hand in Hand — San Francisco, California

Dr. Alicia Lieberman, a developmental clinical psychologist, directs the Child Trauma Research Project at the University of California at San Francisco. This project works in partnership with the San Francisco Unified Family Court. When domestic violence crimes are brought to the attention of the court, young children who have witnessed and/or experienced violence are referred to Dr. Lieberman's program. Dr. Lieberman and her colleagues subsequently develop a trauma treatment program for the mother and child. (See Dr. Lieberman's chapter in this publication.)

Violence Intervention Program — Miami/Dade County, Florida

The Violence Intervention Program for Children and Families, a program that is similar to the project headed by Dr. Lieberman, is directed by Dr. Joy Osofsky, a professor of pediatrics and psychiatry at the Louisiana State University Health Sciences Center (LSUHSC), working in collaboration with Judge Cindy Lederman, Administrative Judge of the 11th Circuit Juvenile Court in Miami/Dade County, Florida. The seed for this program was planted when Dr. Osofsky and Judge Lederman served on the National Research Council Committee, which evaluated family violence intervention programs. Both ventured to learn about the other's expertise: Dr. Osofsky initiated consultations with Judge Lederman on domestic violence cases, and Judge Lederman became a Fellow of the National Center for Infants, Toddlers and Families. Today, when children and families involved in cases of domestic violence and/or trauma appear before Judge Lederman, she calls upon the trauma professionals at the LSUHSC — her partners — to assist in the disposition of the cases. (See Dr. Osofsky's and Judge Lederman's chapter in this publication.)

These programs are examples of trauma professionals forming partnerships with other organizations and disciplines to bring additional perspectives, resources and services to at-risk children and their families. Not coincidentally, each of these programs has a current relationship with the NCTSN. Several other members of the NCTSN are also involved in a variety of partnerships that are tangential to, but not directly involved in, the field of

trauma. The NCTSN is in an excellent position to serve as a unifying entity for professionals and caregivers to facilitate the extended reach of services to traumatized children and families wherever they are located.

There are other examples of successful child trauma service programs that have been located in the same settings as the clients served, including Head Start and other early childhood programs administered by the USDHHS and the individual 50 states and DC. In many of these programs, trauma professionals train other adults — such as teachers, peer counselors and/or caregivers who encounter traumatized families and children — on-site.

Partnering to Reach At-Risk Populations

The practice of establishing programs in the same settings where the population of those who need services are situated has been referred to as "co-location," "one-stop shopping" and "wraparound service programs." Providing comprehensive services at a single site underpins the organizational structures of programs such as Head Start and Early Head Start.

However, all such programs have not been implemented successfully: For example, collocating pregnancy health programs and mental health programs in schools has often been blocked because some individuals have objected to the distribution of birth control (including condoms) and the provision of abortion counseling. In addition, when service providers undertook efforts to join data banks from police departments and/or welfare agencies with departments of children and youth services, they were stymied by technological difficulties as well as by client privacy issues.

We acknowledge these difficulties and are not suggesting that mobilizing trauma resources for children is a simple task. But we emphasize that past experiences and current activities show that it is possible for trauma professionals and trauma programs to undertake these partnerships successfully. Public health approaches to screening and assessing the extent of trauma in specific populations have been undertaken with success in Hawaii[73] and in NYC following the terrorist attacks of September 11, 2001.[2] Efforts are currently underway elsewhere to expand and broaden these diagnostic approaches: For example, over the last few years, Manhattan (NYC) Community Board 7 has used a Geographic Information System to create a comprehensive map of

services in their neighborhood (which includes more than 200,000 residents of the West Side of NYC's Central Park), overlaying governmental, nonprofit and business functions (D. Harris, member of Manhattan Community Board 7 and President of the Children's Research and Education Institute, personal communication). Mapping poverty and other risk factors by census tracts is a commonly accepted practice. Preparing dynamic maps of where children are throughout the day, week and year by age and caregiving institution has also been suggested.[74]

Collaborative efforts underway in Israel among the country's defense forces, Department of Mental Health and several other agencies present promising models of developing relationships and partnerships among agencies and clinicians to mobilize and deliver trauma resources to needy populations on a real-time basis. We have much to learn from our Israeli colleagues who are addressing mental health preparedness in the face of ongoing war and terrorism. (See Dr. Laor's chapter in this publication.)

Legislating and Funding Mental Health Parity

While there is a deep frustration today regarding the accessibility and availability of mental health/trauma services for many traumatized children and their families, the US Congress has promised to again consider enacting a Mental Health Parity law. If enacted, this law would establish, among other things, important new regulations that would require enhanced access to services for these traumatized children and their families.

Historically, the US Congress has been organized according to strict, separate jurisdictional powers, such that funding decisions are made across many different committees and subcommittees. This fragmented approach results in several different committees addressing problems faced by *some* children, at *some* times, in *some* places — as if children had separate parts and were not whole people living in a context of family and community. The challenge for policy makers working in this fractured jurisdictional environment is prodigious.

Nevertheless, the fractured reality of many US congressional committees that have distinctly separate powers can also be considered an opportunity for trauma professionals. During most years, authorizing original legislation, as well as legislation that reauthorizes existing spending authority, is considered

to address some of the problems that face these children and families, and this legislation can become a vehicle for improvements in the provision of trauma resources and services.

The newly established US Department of Homeland Security has huge resources within its domain. However, it has yet to be determined how much money will be devoted to children's mental health services associated with acts of terrorism. How will preparedness, prevention and trauma service opportunities be addressed during, for example, an "Orange Alert"? While this department is organized as a new federal entity, it has become quite clear that state and local government agencies and programs will play critically important roles and will be called upon to help children and families in the event of natural and/or man-made disasters. Will the trauma field be "at the table" when these responses are being designed? Will the trauma field have a role in advising how these limited resources are allocated?

Conclusions

Our children are increasingly becoming the collateral damage of a violent society. We understand fully the potentially adverse consequences of failing to identify, assess and treat those in need. The public health emergency of traumatized children and their families presents a unique opportunity and responsibility for the trauma community to organize and mobilize a coordinated effort to confront and change this unacceptable situation.

As trauma professionals, we *must* become more aggressive in considering "the best interests of the child." We must forge and nurture new partnerships with other colleagues, disciplines and organizations that are responsible for and often serve traumatized children on a daily basis. Through these partnerships, we can identify problems at an earlier stage and bring to bear appropriate resources more rapidly.

Partnerships with pediatricians are vital. These colleagues often see traumatized children in the regular course of events — as they present with physical, emotional and/or comorbid conditions. Pediatricians are uniquely attuned to the developmental stages of children and to the potential for negative sequelae if problems are left unaddressed. A working partnership between pediatricians and trauma professionals could have important and positive ramifications for affected children and their families.

While small, forward steps are possible and indicated, we must always keep the larger picture in mind. We must organize ourselves with a new sense of urgency and determination in order to address the problem fully. It is up to us to educate our governmental officials — local, state and federal — as well as the public at-large so that they understand how significantly trauma affects children and families. It is important that as a society we understand that there will be potential serious and very negative short- and long-term consequences if traumatized children and their families are left unserved. It is equally important that policy makers, healthcare professionals and the public understand that if needed services are provided, we can help many of these children and families — and the payoff will extend far beyond just these individuals.

Actions to Take

We recommend 2 parallel approaches to address the problem of childhood trauma. The first approach — which is outlined in the bulleted points that follow — is incremental, in the sense that it builds upon existing relationships and services. The formal and informal networks and partnerships that are already in existence can take some of these steps immediately. Individuals and/or organizations and programs can do the same. The following list is only suggestive. It is by no means all-inclusive, and the order in which recommendations are presented does not indicate their priority.

- We must take an inventory of existing partnerships among trauma professionals and organizations, child and family assistance agencies, trauma-related associations and government programs. Sharing this inventory broadly may spark ideas for creating important new relationships and partnerships.

- We also must identify all of the membership associations for trauma professionals, as well as all of the conferences they attend regularly. These associations include the International Society for Traumatic Stress Studies, the Children's Defense Fund and the American Professional Society on the Abuse of Children. Charting the membership composition of these associations, as well as their attendance data, will help us determine how to expand their reach and extend their learning and teaching opportunities. Some associations may wish to invite other associations to share research, present papers and/or collaborate at conferences or meetings. The resulting cross-fertilization could produce valuable ideas and opportunities.

- More can and should be done to actively embed our research, calls for papers, presentations, etc, in/on others' Web sites and E-mail list-serves. By doing so, the trauma field could reach literally millions of additional people outside the field with offers of useful information. By embedding ourselves in other partners' electronic and print communications environments, we can take advantage of their preexisting relationships with their clients, and thereby extend the reach for trauma services to additional children. The National Resource Center of the NCTSN, which is the Network's coordinating center, is well-positioned to take on this assertive, proactive role to extend the reach of Web-based information and knowledge about the scope, impact and effects of treating childhood traumatic stress. The NCTSN can work with other organizations and associations to implement reciprocal links between its Web site and their Web sites.

There are many more incremental approaches that we can also pursue. It is vital to begin to take some of these steps *now*, and share information actively with a focus on doing a better job of serving traumatized children and their families.

Nevertheless, an incremental approach to the future often presents individuals and organizations with what appear to be insurmountable barriers that discourage change, innovation and creativity. Therefore, although an incremental approach is necessary, it is not sufficient. A "deductive" approach is also called for — one that requires us to lay out a vision of the *gold standard* for trauma knowledge and services 10 years down the road — and the barriers that must be surmounted in order to reach that vision.

As clinicians and researchers, we often limit ourselves to enumerating future research needs. While acknowledging these future needs is essential, we must not stop there. The issues associated with broad-based screening and assessment presented in this chapter are meant to be instructive. We must weigh carefully the mandatory reporting requirements, as well as the potential for false-positive/false-negative results. But we must move forward with experimental approaches for screening and assessing discrete populations — incarcerated children, for example, or children and parents who sign informed consent documents vetted thoroughly through institutional review boards — to see if, indeed, we can identify, assess and treat more children than we serve currently.

Other questions that we must address as we fashion a future for trauma prevention and intervention include the following: What methods of reimbursement are needed to sustain a *gold standard* trauma field in the future? What role will be played by a mental health parity bill? How will limited resources — both private and public — be allocated to the problems? Who will make these decisions? What studies already exist that demonstrate the costs of providing some services to some children — and what are the benefits of doing so? What additional studies are required? Who will undertake and fund these additional studies?

Any analysis of unmet needs in populations of traumatized children will quickly reveal the following:

- We need more trained trauma professionals and trauma paraprofessionals.
- We must develop partnerships between and among child-serving agencies.
- We must increase the size and scope of programs serving traumatized children and their families.

Longer-range planning considerations should address the gap in capacity between available trauma personnel assets and the actual needs in the field. A strong effort to broaden and deepen the talent pool of trauma professionals is of the highest priority. Moreover, training programs for future generations of trauma professionals and trauma paraprofessionals should reflect the cultural diversity of the children and families served, as well as that of the professionals who serve them. A major goal of the NCTSN is to bring about such a fundamental change in the nature and availability of opportunities for training so that trauma professionals are better prepared to help traumatized children and their families.

Lastly, we must identify the leaders who will take the field of trauma into the future. How will they organize? What existing and new partnerships will be required to bring together such a group charged with planning for the future? What organization(s) will oversee the effort: the Institute of Medicine, the National Academy of Sciences, the National Institutes of Health or private foundations?

Final Thoughts

We believe strongly that we can do an even better job in the future of mobilizing trauma resources for children — a better job of identifying, a better job of treating and a better job of helping traumatized children and their families. We know that this work is vitally important to each and every child, and that we can often succeed in helping children gain a more secure claim on their futures. However, to achieve this goal, we also know that we must do a much better job of communicating with the policy makers and the political and advocacy communities — and especially with the public at-large. All of these constituencies must become more aware that trauma matters. They must understand that left unaddressed and/or untreated, trauma can have multiple deleterious effects on children and their families.

The public health approach to childhood trauma that we have outlined in this chapter carries with it the potential for a more hope-filled future for our children. As clinicians, researchers and advocates for traumatized children, our role is to serve as mediators for providing these children with the help they need to reach their full potential as healthy and productive citizens.

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