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FEATURED INTERVIEW



The Armed Forces Center for Child Protection: DoD's Experts in Child Abuse Pediatrics

Interview with Barbara R. Craig, MD, FAAP, CAPT, MC, USN (Ret)

Barbara R. Craig, MD

Dr. Craig has been a participant in Navy and DOD Family Advocacy Programs (FAP) since she was a pediatric resident in 1979 at the Naval Regional Medical Center, Oakland, CA. Her interest in the medical evaluation of child

maltreatment continued over many other Navy assignments. Her evaluations have included all forms of child maltreatment. At the Naval Hospital Bremerton, she was introduced to the field of child abuse pediatrics and the forensic study of child abuse including child forensic interviewing. Between 1990–1996, Dr. Craig offered the first clinical rotations for Navy pediatricians to observe the clinical assessments of child abuse cases and she developed training presentations on the medical investigations of child maltreatment. While still at Bremerton, she created the military's first child fatality review team. In 1996, she founded the Armed Forces Center for Child Protection at the [then] National Naval Medical Center, Bethesda, MD, later to become the current Walter Reed National Military Medical Center.



Dr. Whalen: What does the Armed Forces Center for Child Protection do?

Dr. Craig: We provide objective child maltreatment expertise when and where it is needed throughout the DOD. We offer clinical services and consultations, training and education, medical-legal case reviews, and expert testimony in military courts.

Dr. Whalen: What events led to its creation of AFCCP in 1998?

Dr. Craig: Throughout my career as a pediatrician, I have been interested in child abuse pediatrics. In 1996, I wanted to create a consultative service for DOD on medical issues involving child maltreatment. I presented

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In This Issue

The focus of this *JFJF* is expert medical consultation on child abuse and neglect cases. We present an interview with Barbara R. Craig, M.D., a child abuse pediatrician who established the Armed Forces Center for Child Protection (AFCCP), located at Walter Reed National Military Medical Center, Bethesda, MD. The interview describes the range of services AFCCP staff provide to health care providers (HPCs), criminal investigators, and attorneys involved in the treatment, investigation, or prosecution of incidents of child maltreatment DoD-wide. Additional related articles include a review of medical conditions which health care providers may mistakenly label as child abuse, or conversely, fail to report despite having suspicions. Furthermore, we offer a review of how the use of clinical prediction rules are helping HCPs identify and more thoroughly evaluate cases of suspected child maltreatment. Finally, we conclude with a review of individual and organizational factors which can help mitigate secondary traumatic stress (STS) related burnout among HPCs and forensic interviewers with high exposure to child maltreatment. Websites of Interest include the AFCCP website which provides contact information and a brief overview of the services they offer, as well as National Children's Alliance (NCA) website with special emphasis on their efforts to establish partnerships and collaboration between Children's Advocacy Centers and military installations.

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An interview with Barbara R. Craig, MD, from page 1

We provide a wide variety of services regarding child maltreatment:

1. Clinical care — child forensic interviews and medical examinations
2. Training and education
3. Medical legal case reviews
4. Expert consultation and testimony in military courts.

my vision of the AFCCP to my commanding officer at the National Naval Medical Center, Bethesda. My proposal was approved by the Board of Directors. We established our Center at our current location, on the 10th floor of the now Walter Reed National Military Medical Center. Each wing of the floor is dedicated to a different aspect of our services. I invited LtCol Kent Hymel, USAF, MC, another pediatrician specializing in child maltreatment, to join me at the newly created AFCCP. We borrowed a truck from the hospital, drove down to a General Service Administration (GSA) warehouse, selected used government furniture, and hand carried it to our new spaces prior to our grand opening.

Dr. Whalen: Please describe the capabilities of your staff.

Dr. Craig: Child abuse pediatrics is a broad and difficult field that requires multidisciplinary expertise. Our staff includes board certified child abuse pediatricians, a pediatric nurse practitioner, a social worker who conducts our forensic interviews, a clinic administrative manager, and a medical support assistant.

We provide a wide variety of services regarding child maltreatment to multidisciplinary professionals within the DOD. These include:

1. Clinical care — child forensic interviews and medical examinations
2. Training and education
3. Medical legal case reviews
4. Expert consultation and testimony in military courts

The AFCCP uses state of the art equipment for recording the interviews. We have an observation room for health care and mental health providers in training, civilian child protective service (CPS) personnel, military or civilian law enforcement, and military family advocacy program (FAP) personnel. Occasionally, JAGs observe the child interviews. Our exam room is equipped with a video-photo-colposcope and video monitor for teaching and documentation of examination findings. We have the ability to digitally record and photograph the exam findings in both physical and sexual abuse cases. Although we prefer to see the children here at our facility, the AFCCP staff will travel to see children at other military installations on a case-by-case basis for special circumstances. The AFCCP has performed many thousands of medical-legal consultations in addition to seeing patients and providing guidance to military physicians world-wide.

Dr. Whalen: What does a typical AFCCP consultation involve?

Dr. Craig: The largest percentage of our work involves conducting medical-legal case reviews for criminal investigative agencies and military attorneys and second opinions for health care providers and for FAP. If we accept the case, they send us the written materials, which can include thousands of pages of files, recorded interviews, radiographs, scene photos, and photographs of injuries. Once we have completed a thorough analysis of the records, we return a report to the requesting agency. We also offer assistance such as recommending other medical, social, or criminal investigations and understanding the biomechanics of injuries.

My staff and I assist physicians and other health care providers with understanding their role in court proceedings. This includes discussing the questions they may be asked, how to respond in clear, concise and easy-to-understand language, and the importance of attention to minor details. We also provide them with the

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We consider alternative hypotheses in our differential diagnoses and explanations for injuries that might be accidental or mimicked by medical conditions.

latest literature applicable to the case in question.

For military JAGs, we provide consultation to both the government (prosecution) and defense attorneys. Our medical opinions remain the same for no matter which side we are consulting, as science is science. Because our social worker is an expert child forensic interviewer, she may even help attorneys edit questions that are more developmentally appropriate for the child or assist in pretrial preparation.

As child abuse pediatricians, we are conservative. We certainly are not zealots who think that everyone abuses their children. The last thing in the world that we want is for a child to be removed from their family. We take great care in performing thorough forensic reviews and use peer reviewed research and literature to assist in forming our opinions. We consider alternative hypotheses in our differential diagnoses and explanations for injuries that might be accidental or mimicked by medical conditions.

Dr. Whalen: What do child abuse pediatricians bring to a medical-legal review that other doctors might not?

Dr. Craig: We have much more training and experience than other pediatricians, family medicine, and emergency medicine physicians in dealing with all aspects of child maltreatment. We are able to review all the medical records, including the labs and imaging studies before forming an opinion. Our goal is to rule out other possibilities while maintaining the safety of the infant or child. In medical school they taught me that when you hear hoof beats, do not assume it is always a horse: look for the zebras too. For example, we find children with brittle bone disease, or metabolic disorders, or cancer that can mimic the presentation of abuse. We have had many cases over the years of children with leukemia, for example, who presented with bruises or fractures that looked atypical.

Dr. Whalen: What AFCCP referral trends have you noticed over the past several years?

Dr. Craig: Overall, in the U. S., there has been a decrease in physical abuse and sexual abuse cases reported and/or confirmed over the past decade. Child neglect is not decreasing. We consult on more child neglect cases than we did previously as well as on more cases involving emotional abuse and emotional neglect. These are very difficult cases because

they do not involve concrete evidence such as findings on their physical exams, abnormal lab studies, fractures on x-rays, or brain injuries on CT or MRI scans. Many years ago, CPS and the courts found it challenging to prove neglect unless it was severe. The emotional neglect and emotional abuse situations were even more challenging to prove. Now, with better tools to forensically interview children, more children in therapy, and a better understanding of the long-term sequelae of emotional trauma, such cases are being handled more appropriately.

The biggest change affecting FAP since May 1, 2019, is problematic sexual behavior in children and youth (PSBCY). As soon as DOD Instruction 6400.01 was published, the AFCCP created an in-depth presentation on problematic sexual behavior that offers definitions, recognition, and guidance regarding problematic sexual behavior in youth and children. It has received much positive feedback. FAP, medical professionals, and investigators are eager to learn more about this new “hot topic.” My staff and I have evaluated many cases involving children touching other children. We have deployed on Family Advocacy Command Assistance Teams (FACAT), mobilized to assist with multiple victims, out-of-home abuse, and child sexual abuse cases occurring on military bases DOD wide. We are the only DOD clinic that has the ability to conduct child forensic interviews and medical assessments in these cases in one location making it easier for the children and their families. Our past experience has shown that many problematic sexual behaviors in children and youth cases often did not meet criteria for FAP, or CPS, or law enforcement. Even now, we see challenges with agencies handling these cases in the most effective and expeditious manner possible.

Dr. Whalen: What kinds of child neglect and emotional abuse and neglect cases do you see and how do you evaluate them?

Dr. Craig: We consult on a wide variety of cases. Neglect cases can include many forms: supervisory, nutritional, medical, dental, educational, and emotional neglect are the most common forms referred to the AFCCP. Each one has special challenges in terms of medical assessments, as well as social evaluations, and possible criminal investigations. Children may present as failing to thrive, having chronic or acute illnesses which do not respond to ap-

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Often, emotional abuse and neglect are discovered in the course of the AFCCP evaluating an infant or child for other injuries.

We want health care providers in the military to be better prepared to recognize potential abuse. We emphasize the sentinel injuries to look for when seeing infants and children and what to do if they are found.

appropriate therapies, left alone without parental supervision, dirty or dressed inappropriately for the weather, chronic school tardiness or absences, delays in seeking medical care, serious dental caries, or many other combinations of symptoms and signs. Many of these cases also involve other forms of abuse. Often, emotional abuse and neglect are discovered in the course of the AFCCP evaluating an infant or child for other injuries. We work closely with the local health care providers in their medical evaluations by offering recommendations for other tests or procedures that might be helpful in making the diagnosis. While it may seem that some of these issues can be handled at the local level, the time required in the more complex cases makes it challenging for the local health care providers (HCP) with busy clinics. We have the ability to obtain and review all of the materials from every agency and speak with all those involved, coordinate conferences regarding the children, write detailed medical-legal case reviews, and testify in court if the case rises to the level of a court-martial. It is not uncommon for one case review to take 20 or more hours of time over several weeks. If the situation occurs at non-local military installations and we are required to travel there for hearings or courts-martial, it may take up to a few days or a week while on TDY.

As mentioned above, not all forms of neglect rise to the level that involve the AFCCP. Some may be due to a lack of parental knowledge about infant and child care. Examples of where we would be unlikely to be involved include an infant who is not gaining weight very well. After an initial evaluation, we might find that the parents did not mix the formula correctly, have breast feeding issues, but did not seek help from their medical provider or a lactation consultant. In other cases, they may not feed the children appropriate food, or not give medications according to the directions.

On the other extreme, we want to be consulted in serious cases such as when parents deliberately starve their infants and children and deprive them of other basic needs such as medical and dental care, appropriate clothing, or a safe living or playing environment. While some parents do not realize that a baby or young child cannot be left alone at home or in a car unsupervised, at the other extreme, they might deliberately leave their children unattended while they are at work or go to a bar instead of paying for child care. Obviously, in these types of cases, the first examples can

be treated by the local pediatrician or family medicine physician with parental education and support. But, in the latter, it would require anything from social services and FAP intervention to law enforcement involvement to removal of the children from the home. In serious cases, the AFCCP would consult and assist the local agencies to assess their concerns and offer further guidance.

Our medical-legal case reviews assist other professionals and provide a recommended safety plan for the children. Nutritional neglect might include medical child abuse cases (formerly Munchausen syndrome by proxy or factitious disorder). In such cases, parents deliberately withhold food or administer substances that cause vomiting or diarrhea to induce failure to thrive so that their children receive more medical attention and the parent or guardian garners significant attention and support from the hospital and clinic staff. Other situations warranting a child abuse pediatric consultation include serious infections left unchecked that result in a medical emergency.

Likewise, emotional abuse and emotional neglect are challenging cases. Without concrete ways to measure the level of abuse and sequelae, it is often difficult to protect children under these circumstances. Emotional abuse and neglect can severely damage the mental health and physical health of a child in addition to their social and cognitive development. We use our knowledge of the complex issues in emotional trauma not only in dealing with our individual cases, but we also provide training on the effects of child emotional neglect and emotional abuse which can alter not only the developing brain and neuroendocrine system, but even the structure of the chromosomes with shortened telomeres.

Dr. Whalen: What training needs have you identified for medical providers who suspect child abuse?

Dr. Craig: We want health care providers in the military to be better prepared to recognize potential abuse and how best to comply with mandatory reporting laws and regulations. We emphasize the sentinel injuries to look for when seeing infants and children and what to do if they are found. We provide concrete medical guidance on the appropriate tests to be ordered when there are concerns for possible maltreatment: basic lab work, skeletal series, head CTs or MRIs, checking for STIs, screening labwork

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Health care providers must be careful with the wording in the electronic medical record system.

We teach the residents and medical students about the importance of writing every inpatient and outpatient medical record as if it might be seen again in court.

to rule out bleeding disorders, leukemia, or occult abdominal trauma. By omitting certain laboratory or radiologic testing, or failing to document some findings that seem minor at the time, a local HCP might inadvertently jeopardize a case and open the window for a judge to not issue a protection order, or for reasonable doubt to enter into the court-martial.

Health care providers must be careful with the wording in the electronic medical record system. We often find notes that are confusing or do not fully document the findings in a way that others can understand. We teach the residents and medical students about the importance of writing every inpatient and outpatient medical record as if it might be seen again in court. Advice is given regarding accuracy, comprehensive details, and documenting their findings clearly.

Electronic records are invaluable tools in medicine, but occasionally providers copy and paste the birth and past medical history from one note to another when the veracity of that information provided by the parent or caregiver has not been questioned, or a new history with more details has not been ascertained. The notes need to convey the medical findings in lay terms and explain why a diagnosis is supported. There are well over a thousand articles published each year in the English language medical literature regarding child maltreatment, more than a general pediatrician, family medicine physician, or emergency department physician would have time to review. We strive to incorporate the latest research findings in the child abuse field into our reports and our training.

For FAP and military criminal investigative agencies, our training is geared to provide guidance to special agents, case managers, case review or incident determination committee members, and other FAP personnel with the understanding of what injuries are considered to be the most concerning for non-accidental trauma, the biomechanical forces needed to cause those injuries, and the limits of dating certain injuries. Our goal is not to make them medical experts, but rather to allow them to understand the significance of the medical findings and to be cautious of the medical guidance given in a case that may not be consistent with the most up to date advances in child abuse pediatrics.

Dr. Whalen: What types of training opportunities do you provide?

Dr. Craig: The AFCCP staff provides presentations at conferences sponsored by FAP, military medical treatment facilities, military justice schools and criminal investigation organizations, and other military commands. In addition, the AFCCP offers multidisciplinary courses world-wide throughout the DOD called "Advances in Child Maltreatment." Our courses are usually given over several days during which my staff and I offer a wide variety of lecture presentations including both an advanced medical track and an advanced non-medical track running simultaneously. Although the requesting commands fund our travel expenses, our conferences have no registration fees, and offer free continuing education credits (CME, CNE, CEUs, and certificates of attendance.) The AFCCP staff personally coordinate these courses, provide all lecture and administrative preparation with no honorarium. These courses are funded by installations from Asia to Europe and throughout the United States. The audiences are usually very multidisciplinary. In order to foster better working relationships with their local counterparts, we encourage them to invite CPS, local law enforcement, members of the child advocacy centers, attorneys, and local health care providers to participate.

We are often asked to return to the same installations every 2–3 years to provide training for their new staff members or to update those who are still there about new topics and advances in the field of child maltreatment. Sometimes the trainings are requested because of a specific incident that occurred on the base or at the hospital where the installation leadership feels that a stand-down for training is an appropriate course of action.

These trainings are extremely cost effective, especially overseas and at more remote military installations. The cost savings can be enormous. We can train any size audience and have been doing so for over 25 years — from 10 to 300 attendees. If we trained 100 local multidisciplinary professionals at the base, the expenses for that many people going to a civilian course would be \$4,000 times 100 people, which equals \$400,000 to receive the same type of training we provide for about \$6,000. We update our lectures regularly and provide extensive bibliographies. If a particular command wants certain specific topics, we will write new presentations for them and tailor it to their needs.

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An interview with Barbara R. Craig, MD, from page 5

We also help families that have been reported to better understand the process they might have to go through. It can be stressful when a child is referred to various agencies with abuse or neglect concerns. Our goal is to help children and families and ensure that all military kids are safe and thriving at home.

Dr. Whalen: How do you and your staff prevent professional burnout given all the secondary trauma you are exposed to?

Dr. Craig: We really feel like we are contributing to protecting at-risk children, whether it is in patient care providing training for the different multidisciplinary professionals dealing with child maltreatment in the military, advising military lawyers with courts-martial, or assisting health care providers in understanding what tests and procedures should be done in cases of suspected child abuse. It is a very rewarding career. We also help families that have been reported to better understand the process they might have to go through under such circumstances. It can be a stressful time when a child is referred to various agencies with abuse or neglect concerns. Our goal is to help children and families and ensure that all military kids are safe and thriving at home.

The next thing that helps us with burnout is that we share all the common experiences of dealing with child abuse on a daily basis. Having a tough case and sharing our feelings with each other can be very therapeutic. We all have experienced situations in which the findings are so egregious that we still find it shocking. It is nice to have a small group to sit down with and talk about how stressful the case was because it was so challenging and upsetting, but that we did everything we could. Others not in this situation may not understand the stressors of our work and the enormous caseload and travel obligations going to military bases from Asia to Europe and everywhere in between.

When we travel, we might go out to dinner with the people we are working with, or do some sight-seeing at the end of a long day. This social connectedness can be a wonderful

way to relieve the tension of the courtroom or the work we are doing. One of the best parts of a job that takes us all over the world is that we run into professionals with whom we have worked with over the years. We really enjoy that. We have encountered doctors who did rotations with us from a few years ago up to 20 or 30 years ago, or lawyers and special agents we worked with previously in cases, or social workers who have asked us to provide trainings or consultations at three or four different duty stations over the decades.

Finally, the military's commitment to helping families helps fend off professional burnout. Positive outcomes and helping families are the best parts of our work. Medical conditions which mimic child abuse come to mind. A recent case of a serious medical condition comes to mind, it was initially suspected to have been from abuse and the findings were indeed suspicious for trauma. Once we were involved and recommended more testing, the condition was diagnosed. What did the military do? The mother's command realized that her child needed specialized medical care not available at that remote overseas location. They were able to have orders quickly written so that the mother and child could relocate to a base where she had family for support, and could still continue in her job rating. What other employer would do that? Family Advocacy, Community Services, the local clinic physician, and the Exceptional Family Member Program helped to make sure the command was actively engaged with the family. What better outcome could there be?

Dr. Whalen: Thank you for your work and your time and effort in giving us this information.

Dr. Craig: You are welcome.

We really feel like we are contributing to protecting at-risk children, whether it is in patient care providing training for the different multidisciplinary professionals dealing with child maltreatment in the military, advising military lawyers with courts-martial, or assisting health care providers in understanding what tests and procedures should be done in cases of suspected child abuse.

Mimics, Missed Cases, and Flawed Theories of Child Maltreatment

By James E. McC Carroll, PhD, Ronald J. Whalen, PhD, Joshua C. Morganstein, MD, and Robert J. Ursano, MD

Medical conditions can be mistaken for maltreatment (mimics) which, if missed by a physician and reported as child maltreatment, can result in parents being wrongly accused of abuse, social and legal battles, and failure to treat the child medically.

The Armed Forces Center for Child Protection (AFCCP) tackles the difficult issues of diagnosing child maltreatment. Medical conditions can be mistaken for maltreatment (mimics) which, if missed by a physician and reported as child maltreatment, can result in parents being wrongly accused of abuse, social and legal battles, and failure to treat the child medically (Christian & States, 2017). The examining physician is required to differentiate abuse from trauma to the head, bruising, abdominal trauma, skeletal injury, burns, and many other medical conditions including mimics of sexual abuse (Pomeranz, 2018). When there is the possibility of maltreatment, children should be evaluated by a child protection team including a child abuse pediatrician (Barnes, 2011).

The diagnosis of child abuse can be missed based on many factors such as the inexperience of the provider, court phobia (Pomeranz, 2018), and bias based on racial or socioeconomic status (Dakil, Cox, Lin, & Flores, 2011). Missed cases can have tragic outcomes, particularly in serious head injuries. Generally, the most serious type of missed case is abusive head trauma (AHT) or traumatic brain injury (TBI), formerly called shaken baby syndrome (SBS). Data from the Kids' Inpatient Databases (KIDs) for 1997, 2000, and 2003 were used to estimate the incidence of inflicted TBI hospitalizations in infants less than one year old. These estimates were 27.5, 27.5, and 32.2/100,000, respectively (Ellingson, Leventhal, & Weiss, 2008). By comparison, falls and accidents are much less likely than AHT to result in serious injury. Falls and injuries in 11,466 infants six months old or younger resulted in visible injuries in 14% of the infants, and 56% of those injuries were bruises (Warrington & Wright, 2001). Ninety-seven percent of injuries involved the head, but less than 1% resulted in concussion or fracture.

The physician in the ED or in primary care is usually the first contact for injured children. A classic study of missed cases of AHT in children younger than three years that occurred 1990-1995 reported that 31.2% (n=54) of 173 AHT cases were seen by physicians who

did not recognize the diagnosis (Jenny, Hymel, Ritzen, Reinert, & Hay, 1999). Cases involving young, white children from intact families were more unlikely to be missed. Nine of the 54 children with unrecognized AHT died, 15 were reinjured, and 22 experienced medical complications related to the diagnosis. This study was repeated using data from 232 children who had been diagnosed with AHT between 2009-2011 (Letson et al., 2016). The median child age was 5.4 months, 69% were white and 60% were males. The overall mortality rate was 10%. Twenty-five percent of 232 children with an AHT diagnosis had 98 prior opportunities for diagnosis that were missed in a medical setting and 22 were missed by CPS. Five of the 59 children died (Pfeiffer et al., 2018).

Unfortunately, there are controversies surrounding the AHT diagnosis. AHT is a medical diagnosis made by a multidisciplinary team of medical professionals and social workers who are informed by findings from child protection and police investigations to exclude medical mimics (Hymel, 2019). Unfortunately, scientifically unsupported theories have been presented to the public and courts about the diagnosis of physical child abuse, particularly AHT. However, there is no controversy about the diagnosis of AHT in clinical medicine (Leventhal & Edwards, 2017). AHT is a medical conclusion, not a legal determination of the intent of the perpetrator or a "diagnosis" of murder. There is broad consensus among medical professions that current evidence-based diagnostic methods render an accurate diagnosis of AHT. An accurate AHT diagnosis gives the physician the tools necessary to distinguish between legitimate medical opinions based on clinical findings, medical evidence, and evidence-based literature and the legal arguments or etiological speculations that are unwarranted (Choudhary et al., 2018).

There are clinical prediction rules that can assist clinicians in assessing AHT. Several have been developed to assist with decisions at various stages of the diagnostic process. These rules are aids that can be used to prompt clinicians to seek further clinical, social, or forensic informa-

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Child protection is a difficult and an emotionally charged endeavor that requires the diligence and knowledge of child abuse professionals, medical, legal, and social service providers, to recognize, diagnose, refer, treat, and prevent the maltreatment of children.

tion (Pfeiffer et al., 2018). Prediction rules for the pediatric intensive care unit physician were developed by the Pediatric Brain Injury Research Network. These rules provide evidence-based estimates of the probability of AHT for acutely injured children less than three years old. Such estimates can inform the physician's decisions to evaluate, confirm, exclude, and/or report suspected child abuse (Hymel et al., 2019).

Child protection is a difficult and an emotionally charged endeavor that requires the diligence and knowledge of child abuse professionals, medical, legal, and social service providers, to recognize, diagnose, refer, treat, and prevent the maltreatment of children.

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Prediction rules for the pediatric intensive care unit physician were developed by the Pediatric Brain Injury Research Network. These rules provide evidence-based estimates of the probability of AHT for acutely injured children less than three years old.

Predictors and Moderators of Burnout among Child Maltreatment Professionals

By Ronald J. Whalen, PhD, James E. McCarroll, PhD, Joshua C. Morganstein, MD, and Robert J. Ursano, MD

The tasks of CAPs—identification, diagnosis, and research of the physical and mental marks of child abuse and neglect, parental and societal education, advocacy for prevention, and expert testimony—make them valuable components in stopping current child maltreatment and preventing future cases.

Occupations with high levels of exposure to traumatized children, like child abuse pediatricians (CAPs) and forensic interviewers (FIs), are at increased risk of burnout (i.e., a long-term psychological response characterized by emotional exhaustion and cynicism as a consequence of prolonged stress and anxiety at work). Secondary exposure to the traumatic experiences of others (e.g., via physical examinations and interviews with children who describe their abuse) is associated with secondary traumatic stress (STS) symptoms (i.e., re-experiencing, avoidance, arousal) that parallel post-traumatic stress disorder (Park, Meyer, & Gold, 2020). And yet, some professionals find coping strategies to that help mitigate the risks of burnout despite ongoing exposure to STS.

Two recent studies examined the relationship between STS and burnout among CAPs (Passmore, Hemming, McIntosh, & Hellman, 2019) and FIs (Fansher, Zedaker, & Brady, 2020). Not surprisingly, both studies found a positive association between STS and burnout—as CAP and FI exposure to traumatized children increased, STS and burnout scores also increased. The challenge for this line of research is to identify individual and/or organizational factors that help mitigate STS related burnout.

Passmore et al. (2019) found that among child abuse pediatricians (n=151), hope and meaning-in-work scores (individual-level attributes) were negatively associated with STS and burnout and that both hope and meaning-in-work mitigated the relationship between burnout and STS. The Dispositional Hope Scale was used to measure the extent to which CAPs feel motivated to attain goals (agency) and see viable ways to achieve these goals (pathways) (Snyder, Harris, Anderson, Holleran, Irving, Sigmon, ... Harney, 1991). Item examples include: “I energetically pursue my goals” and “I can think of many ways to get out of a jam.” The Work as Meaning Inventory was used to assess CAP’s sense that their work has value in their life (Wrzesniewski, 2012). Item examples include: “The work that I do is important” and “What I do at work makes a difference in the world.”

In addition to individual-level attributes like compassion satisfaction (i.e., the pleasure respondents derive from being able to perform their work well), a construct very similar to the meaning-in-work used by Passmore, et al. (2019), Fansher et al. (2020) examined work-related characteristics among FIs (n=250) and their association with burnout and STS scores. Compassion satisfaction was negatively associated with burnout among FIs, just as meaning-in-work was negatively associated with burnout among CAPs. Furthermore, FI perceptions of organizational support were negatively associated with burnout. Three open-ended questions on their survey allowed respondents to add qualitative details to quantitative finds:

1. What is the hardest thing about your work?
2. What helps you the most in coping with your work?
3. What is the most beneficial thing the agency you work for could do to help you cope with the negative aspects of your job?

The importance of social support from co-workers and supervisors was a common theme across all three open-ended questions, with increasing emphasis on concrete measures organizations can take to help mitigate burnout (e.g., instrumental support like physical resources that help FIs improve their job skills).

CAPs and FIs provide an essential expertise in a national strategy to accurately identify and ultimately prevent incidents of child abuse and neglect. Findings from these study suggest that organizational efforts to promote hope and meaning-in-work among CAPs and FIs may help prevent burnout. Promoting healthy coping (e.g., mentoring), assessing CAP and FI behavioral health at regular intervals, and offering professional development opportunities may prevent burnout in these critical occupations.

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BUILDING BRIDGES TO RESEARCH

Clinical Prediction Rules in Clinical Care

By James E. McCarroll, PhD, Joshua C. Morganstein, MD, Ronald J. Whalen, PhD and Robert J. Ursano, MD

A clinical prediction rule (CPR) is used to forecast an event such as a diagnosis or a need for further evaluation for that person.

Clinical prediction rules (CPR) are tools developed from biomedical research that help physicians quantify a patient's history, results of clinical examinations, and diagnostic tests to predict (or estimate the probability of) a diagnosis. They are most useful when they can be applied quickly, such as in an emergency department, to diagnose or determine if there is a need for further evaluation of a suspected condition.

Before a CPR can be developed, it should go through three steps: (1) derivation (predictor variables are identified and the rule is developed); (2) validation (the rule is tested in a new population); and (3) impact analysis in terms of patient outcomes, costs, and physician behavior (Keogh et al., 2014). The only variables that can be used for the model must be available at the time the prediction is made.

When developed, a CPR requires three criteria: (1) known variables are used to estimate the event being predicted; (2) the predictors must be known prior to the outcome being predicted; and (3) the model must be accurate when applied to new observations (i.e., it must be generalizable). Other factors to be considered are the cost, invasiveness, and how frequently the condition to be predicted is encountered in clinical practice (Leisman et al., 2020).

There are many statistical and practical methods and limitations in developing a CPR. Statistical methods used to develop CPRs include univariate and multivariate analysis including multiple regression and many highly sophisticated techniques. Statistical considerations include whether the variables tested in the model are based on prior theory and evidence or selected statistically by their strength of association (e.g., including a predictor based on its probability value in multiple selection procedures). In some cases, too many variables will be found to be statistically significant to be included and cannot be supported by the dataset used as the basis of prediction. Models based on the former approach (prior knowledge based on evidence) is the preferred approach to probability modeling (Leisman et al., 2020).

One of the practical considerations is whether the model is really necessary. For example, it may fulfill an unmet clinical need such as identifying high-risk patients who may not be ordinarily recognized or it improves discrimination compared to the current practice (Leisman et al., 2020). There are hundreds of CPRs, but many will not be used in practice or their impact will not be analyzed through rigorous research. A search for CPRs in literature published from 1965-2009 found 434 unique rules that had been derived; 54.8% had been validated and 2.8% had undergone analysis of their impact on the process or outcome of clinical care. The most common were for cardiovascular disease, respiratory, or musculoskeletal conditions (Keogh et al., 2014).

An example of a CPR is the 4-variable clinical prediction rule (CPR) screening instrument for abusive head trauma (AHT) developed by the Pediatric Brain Injury Research Network (Hymel et al., 2014). This instrument predicts whether a child under three years of age with possible AHT should undergo a full medical workup. The rule was found to predict AHT with a high degree of sensitivity of head-injured children admitted to a pediatric ICU thus helping to insure that cases will not be missed due to failure to conduct a full evaluation.

Another example of a CPR is the preliminary study of a tool predicting the need for hospitalization for alcohol withdrawal. This study was conducted in a retrospectively in 2,038 patients presenting to an emergency department (Mahabir et al., 2020). Alcohol withdrawal symptoms are mostly mild, but some could progress to seizures of delirium tremens, which can be fatal. In order to develop a tool to predict the need for hospital admission, Mahabir et al. developed and validated a tool, the alcohol withdrawal triage tool (AWTT), to predict severe alcohol withdrawal syndrome (SAWS). They identified eight independent predictors, available to the ED at the time of evaluation. Scoring each symptom as "1" if present, they found that a score of three or above predicted high risk with a sensitivity of 90% and suggested the need for hospitalization. The authors

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Increasingly sophisticated statistical techniques in healthcare that involve machine intelligence have the potential to revolutionize clinical research that allows physicians to make better decisions and achieve better patient outcomes.

suggested that this tool could be useful as part of a standardized admission protocol by identifying patients at low risk for SAWS that could be safely discharged from the ED.

Increasingly sophisticated statistical techniques in healthcare that involve machine intelligence have the potential to revolutionize clinical research that allows physicians to make better decisions and achieve better patient outcomes. However, many issues need to be addressed including data quality, the use of electronic medical records, the transparency of the system in the context of clinical workflow, and the impact of bias on system outputs (Cuttillo et al., 2020). It is also critical to examine barriers in implementing CPRs such as clinician's beliefs, local contextual factors, and how to integrate CPRs into the clinical workflow (Wallace & Johansen, 2018).

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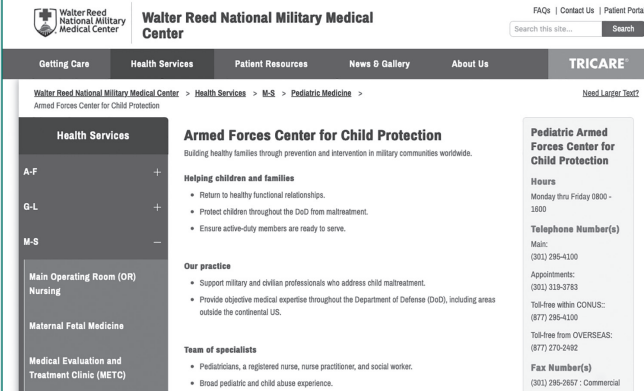
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It is particularly important for agency leaders to look for ways to alleviate potential organizational risk factors of burnout, as these play a significant role in the process.

Websites of Interest

The Armed Forces Center for Child Protection (AFCCP) provides objective medical expertise to military and civilian professionals who address child maltreatment in military communities. The AFCCP website describes the range of services (e.g., medical evaluations, forensic interviews, medical-legal reviews, child abuse education) offered by a multidisciplinary team and contact information. https://tricare.mil/mtf/WalterReed/Health-Services/M_S/Pediatrics/Armed-Forces-Center-for-Child-Protection

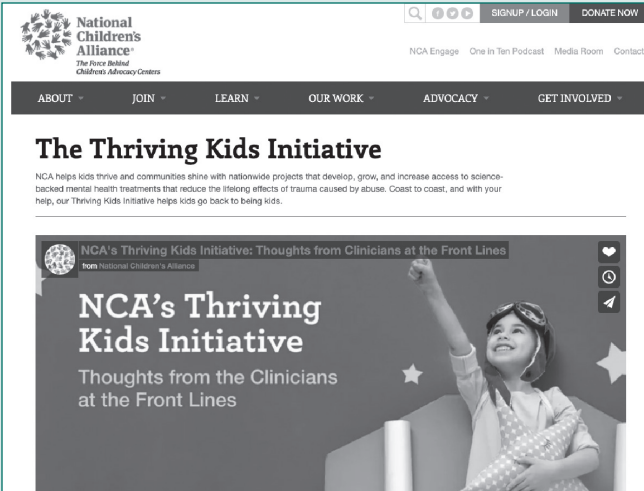


The screenshot shows the website for the Walter Reed National Military Medical Center. The main navigation bar includes 'Getting Care', 'Health Services', 'Patient Resources', 'News & Gallery', 'About Us', and 'TRICARE'. The breadcrumb trail is 'Walter Reed National Military Medical Center > Health Services > M-S > Pediatric Medicine >'. The page title is 'Armed Forces Center for Child Protection'. The main content area is divided into three columns. The left column is a sidebar with 'Health Services' and a list of categories: 'A-F', 'G-L', 'M-S', 'Main Operating Room (OR) Nursing', 'Maternal Fetal Medicine', and 'Medical Evaluation and Treatment Clinic (METC)'. The middle column is titled 'Armed Forces Center for Child Protection' and includes the mission statement 'Building healthy families through prevention and intervention in military communities worldwide.', a section 'Helping children and families' with three bullet points, 'Our practice' with two bullet points, and 'Team of specialists' with two bullet points. The right column is titled 'Pediatric Armed Forces Center for Child Protection' and includes 'Hours' (Monday thru Friday 0800 - 1800), 'Telephone Number(s)' (Main: (301) 295-4100), 'Appointments: (301) 295-2753', 'Toll-free within CONUS: (877) 295-4100', 'Toll-free from OVERSEAS: (877) 270-2492', and 'Fax Number(s): (301) 295-2657 - Commercial'.

National Children's Alliance (NCA) is the national association and accrediting body for Children's Advocacy Centers (CACs). Formed in 1988, NCA has been providing support, technical assistance, and quality assurance for CACs, while serving as a voice for abused children for more than 25 years. A Children's Advocacy Center is a child-friendly facility in which law enforcement, child protection, prosecution, mental health, medical and victim advocacy professionals work together to investigate abuse, help children heal from abuse, and hold offenders accountable. NCA is committed to supporting the establishment of partnerships and collaboration between Children's Advocacy Centers (CAC) and military installations. They have worked closely with Congress to identify and allocate funding specifically aimed at enhancing these critical relationships. CACs now have access to a dedicated NCA staffer, the Coordinator for Services to Military Families, to support and advise members on military-related matters. Accredited members will also have access to funding to help promote and support military communities with a coordinated investigation and comprehensive response to child victims of abuse, similar to their civilian counterparts. <https://www.nationalchildrensalliance.org/support-for-military-families/>



The screenshot shows the website for the National Children's Alliance. The main navigation bar includes 'ABOUT', 'JOIN', 'LEARN', 'OUR WORK', 'ADVOCACY', and 'GET INVOLVED'. The page title is 'Support For Military Families'. The main content area features a large graphic of several hands of different colors and patterns reaching towards the center, symbolizing support and collaboration. The graphic includes military-style elements like stripes and stars.



The screenshot shows the website for the National Children's Alliance. The main navigation bar includes 'ABOUT', 'JOIN', 'LEARN', 'OUR WORK', 'ADVOCACY', and 'GET INVOLVED'. The page title is 'The Thriving Kids Initiative'. The main content area features a large graphic of a young girl in a military-style uniform, holding a star and looking up. The graphic includes the text 'NCA's Thriving Kids Initiative: Thoughts from Clinicians at the Front Lines' and 'Thoughts from the Clinicians at the Front Lines'. The graphic also includes the NCA logo and social media icons.