2005

Three American Troops in Iraq: Evaluation of a Brief Exposure Therapy Treatment for the Secondary Prevention of Combat - Related PTSD *

Jeffrey A. Cigrang
Wright State University, jeffrey.cigrang@wright.edu

Alan L. Peterson

Richard P. Schobitz

Pragmatic Case Studies in Psychotherapy, http://pcsp.libraries.rutgers.edu
Volume 1, Module 2, Article 1, pp. 1-25, 07-27-2005 [copyright by authors]

Three American Troops in Iraq: Evaluation of a Brief Exposure Therapy Treatment for the Secondary Prevention of Combat-Related PTSD*

JEFFREY A. CIGRANG[a,d], **ALAN L. PETERSON**[b], & **RICHARD P. SCHOBITZ** [c]

[a] Wright-Patterson Medical Center, Dayton, Ohio
[b] Wilford Hall Medical Center, San Antonio, Texas
[c] Tripler Army Medical Center, Honolulu, Hawaii
[d] Correspondence concerning this article should be addressed to Jeff A. Cigrang, 88th Medical Operations Squadron/SGOH, 4881 Sugar Maple Drive, Wright-Patterson Air Force Base Ohio 45433-5529.
Email: jeff.cigrang@wpafb.af.mil
*Note: The views expressed in this article are those of the authors and are not the official policy of the Department of Defense or the United States Air Force.

ABSTRACT

Relatively little research has been devoted to developing empirically-supported interventions for the secondary prevention of chronic post-traumatic stress disorder (i.e., for individuals who have developed PTSD symptoms but not the full PTSD disorder). One-session psychological debriefing has been routinely used as a primary preventive intervention for individuals exposed to trauma, but the appropriateness of this practice has been questioned. The authors describe an alternative, secondary prevention model of brief exposure-based treatment using three cases of military members seeking help at a forward-deployed medical clinic in Iraq for PTSD symptoms following combat-related traumas. Treatment involved repeated imaginal exposure and in vivo exposure conducted in four therapy sessions over a five-week period. Baseline measures on the PTSD Checklist were at a level that is considered to be in the range of PTSD. The results indicated that after four treatment sessions, PTSD symptoms were reduced by an average of 56%, and the final PTSD Checklist scores were within normal limits. The results suggest that prolonged exposure therapy may be a rapid individual treatment for the secondary prevention of combat-related PTSD.

Key words: Post Traumatic Stress Disorder (PTSD); exposure therapy prevention; Iraq War; military settings; Acute Stress Disorder (ASD)

---

1. CASE CONTEXT AND METHOD

Post-traumatic stress disorder, or "PTSD" (American Psychiatric Association, 1994), is one of the most common anxiety disorders. Lifetime prevalence estimates have ranged from 7.8% to 12.3% in research with civilian populations (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993). Studies of certain other populations, such as military members who served in the Vietnam War, have shown much higher

lifetime prevalence estimates of 30.9% for men and 26.0% for women (Weiss et al., 1992). Although extensive research and clinical attention has been given to the treatment of PTSD, very little emphasis has been given to the development of empirically supported interventions for the secondary prevention of PTSD (Gray & Litz, 2005). (Note that the early symptoms of PTSD frequently fall under the category of Acute Stress Disorder, or "ASD" [American Psychiatric Association, 1994]. However, the presence of PTSD symptoms less than 30 days after trauma exposure does not automatically warrant an ASD diagnosis, since an ASD diagnosis requires the presence of dissociative symptoms. While our clinical impression was that the tree cases in our study all fell into the ASD category, we did not specifically assess for dissociative symptoms; and thus we cannot confidently say our patients met the ASD criteria. For more on the ASD diagnosis, see Bryant, 2004).

Psychologists and other mental health professionals working near the front lines of military combat zones often see military members who have been exposed to significant combat stress. Psychologists are integral members of forward-deployed medical units in Iraq that render lifesaving care to injured service members. Medical units are equipped to provide "damage control" surgical intervention for severe injuries sufficient to allow safe transport of the patient to a higher level of care (Gawande, 2004). The less seriously injured are treated and returned to duty. As of February 2004, a total of 10,770 military service members had been wounded in action in the Iraq war. Close to half (5151; 48%) were returned to duty (U.S. Casualty Status, 2004).

In this wartime medical setting psychologists are uniquely positioned to have interaction with military members who have recently experienced violent and life-threatening situations, including with those without symptom development at the time of interaction (primary prevention) and with those who have started to develop symptoms (secondary prevention). U.S. Service members in Iraq are routinely threatened with death or injury from vehicle bombs, indirect fire (missiles, mortars, artillery, rockets), rocket propelled grenades, small arms, and roadside bombs ("improvised explosive devices, or "IEDs"). Due to the nature of the insurgency war in Iraq, there is no clearly defined "front line". The threat of being attacked is often shared equally by combat troops (e.g., infantryman) and personnel whose duties are traditionally considered a combat support role (e.g., truck driver).

The war in Iraq is the largest sustained ground combat operation undertaken by the U. S. military since the Vietnam War. Shortly after the end of the Vietnam War, Horowitz and Solomon (1975) predicted that in subsequent years mental health professionals would see the development of post-traumatic stress disorders (PTSD) among many Vietnam-era combatants. Extensive research conducted with Vietnam veterans over the past 20 years has largely validated these earlier concerns (Kaylor, King, & King, 1987; King, King, Foy, Keane, & Fairbank, 1999). A recent report by Hoge and colleagues (Hoge, Castro, Messer, McGurk, Cotting, & Koffman, 2004) offers preliminary evidence that present-day combat duty in Iraq carries a similar risk for long-term mental health problems.

A number of recent publications have highlighted the potential psychiatric impact of combat exposure on military members serving in Iraq and Afghanistan (Friedman, 2004; Jones, 2004; Lamberg, 2004). Hoge et al. (2004) screened four combat units for emotional disorders before deployment to Iraq or Afghanistan (n = 2530), and four other units, three to four months after their return (n = 3671). The percentage of participants whose responses met the screening criteria for major depression, generalized anxiety disorder, or PTSD was significantly higher for the groups returning from Iraq or Afghanistan compared to the groups assessed before deployment. This was particularly true for PTSD and deployment to Iraq. The percentage of respondents who met the strict screening criteria for PTSD after combat duty in Iraq was more than double the rate found in the pre-deployment group (12.2 to 12.9 versus 5.0 percent).

The Hoge et al. (2004) study also found that only a minority (20 to 40 percent) of service members who met the screening criteria for a mental disorder reported having sought professional assistance. This finding is at least partially attributable to the stigma associated with help seeking and service members' concerns for how their help-seeking will be perceived by peers and by leadership. Ideally, methods of early intervention would be identified for use with service members exposed to combat that effectively reduce the risk of developing PTSD, thereby lessening the need for help-seeking in the long term. However, the question of what methods of preventing PTSD are efficacious has been a source of considerable debate among practitioners and researchers alike. This issue will be discussed in greater detail in the section below.

One of the most common, potentially traumatizing events for service members in Iraq is IED attacks on convoys (Global Security.org, 2004). Enemy forces hide mortar rounds, artillery projectiles, and other explosive-filled ordnance alongside roads and highways and then remotely detonate them to cause maximum blast injuries to passing vehicles and their occupants. IEDs are cleverly disguised by burying them under roads, in piles of garbage, in abandoned vehicles, and dead animal carcasses. Often a series of munitions are wired together in a "daisy chain," so that a single signal will detonate all at the same time. Attacks on convoys by suicide bombers driving explosive-filled vehicles ("vehicle-borne explosive devices," or "VBEDs") are also common. When protective armor on the vehicle does not adequately protect the occupants, physical injuries from the blast tend to be most severe in areas not covered by body armor, i.e., face, neck, arms, lower abdomen/back, legs (Gawande, 2004). In the immediate aftermath of an IED attack, survivors are at risk for further attacks by enemy forces in the form of small arms fire and rocket-propelled grenades. Any injured or dead are cared for by their fellow service members until medical responders arrive on the scene. The injured sometimes includes Iraqi civilians.

Service members who spend a significant amount of time on the road in Iraq, whether providing security to supply convoys or patrolling in search of enemy forces, may experience multiple separate IED attacks on their convoys during their time in Iraq. The risk is omnipresent when "outside the wire" (outside the secured perimeter of a U.S. military base). Unless service members are seriously injured in an IED attack, they are returned to normal duties quickly, oftentimes within a day or two.

Pragmatic Case Studies in Psychotherapy, http://pcsp.libraries.rutgers.edu
Volume 1, Module 2, Article 1, pp. 1-25, 07-27-2005 [copyright by authors]

The psychologist's first contact with service members who have experienced an IED attack can occur in a number of contexts. Psychologists typically make a point to informally visit with service members who are seen in the medical facility for treatment of injuries incurred from an IED. Psychologists have opportunities to interact with non-injured survivors of an IED attack when they visit the medical facility to talk with and provide support for their injured comrades. These instances usually occur within 24 hours of the IED event. Psychologists may also arrange a visit with the affected service members at their military unit in the days following the IED. In general, the goals of these activities are to provide a supportive "presence," to observe and listen to those most affected, to provide information about available services, and to identify individuals who may be at particularly high risk for mental health problems (National Institute of Mental Health; NIMH, 2002).

Referrals of individuals to the psychologist for formal assistance usually occur within a one to two week time frame after the IED incident, and are facilitated by unit leadership. Referrals are voluntary and are generally prompted by the persistence of psychological symptoms that are of a sufficient severity to impair the service member's ability to perform normal duties. In some cases service members are provided several weeks of time to participate in treatment away from hazardous duty, but not always. Unless the circumstances are very unusual, there is an expectation from unit leadership that the service member will be returning to normal duty. Service members who are referred share these expectations.

The task of developing a clinical approach for responding to service members who seek help early for managing psychological symptoms following IED exposure is a challenging one. Preferably, the approach would help service members reduce current PTSD symptoms as well as reduce the risk of developing full-blown PTSD. The purpose of the current report is to describe a preliminary model for working with this population using three sample cases of service members treated by the authors. Each author contributed one completed treatment case. The majority of the therapy sessions were audiotaped. The three cases were chosen because they represented a range of severity in IED traumas, were service members who endorsed a high level of psychological distress at intake, and who exhibited a high level of motivation for obtaining assistance.

2. THE CLIENTS

As will be seen below, all three cases to be described were seen after some PTSD symptoms had developed. In fact, they all met the symptom criteria for PTSD at their intake session but not the duration criterion of symptoms lasting greater than 30 days. (American Psychiatric Association, 1994).

Case #A

Airman A. was a 20-year-old single man serving on active-duty in the Air Force. Airman A. was part of a routine three-vehicle patrol through an Iraqi village. He was standing in the machine gun turret of his Humvee when an IED was detonated between his vehicle and the lead

vehicle. In the initial shock of the blast and with his vision impaired by a large cloud of dirt and debris, Airman A. believed that the front vehicle had been destroyed and the occupants killed. Knowing that IED blasts are often followed by small arms fire from attacking insurgents, he anxiously waited to defend himself and his remaining patrol members. Soon he discovered that the front vehicle was intact and no one was seriously injured. Through radio contact with his superiors at the base, Airman A. was directed to keep his patrol on site to provide security until the IED attack could be investigated. Over the next hour of waiting Airman A. remained in the turret swiveling his machine gun from left to right, hypervigilant to threats of harm from the surrounding environment. Many Iraqi civilians were present and he constantly scanned their faces and appearance in an effort to discern if any were the enemy. He felt a strong pressure to be ready to respond quickly and accurately. He worried about what he would do if he were fired at and how to best respond if other members of his patrol were injured or killed. Only when his patrol was finally released and was permitted to drive back to the base did he experience some lessening in tension. He and several other patrol members who had experienced minor lacerations from the blast were briefly treated at the base medical facility and released. He returned to normal duties the following day.

Following the IED incident Airman A. began having difficulty sleeping due to frightening dreams where he and his fellow airman were injured or killed. During the day he experienced intrusive images from the IED incident as well as the nightmares. He was easily startled by loud noises and other reminders of the event, and would respond with tachycardia, nausea, and intense anxiety. He found himself withdrawing from other people, avoiding conversations, and trying to sleep more. He continued to perform his duties as a turret gunner on patrols, but was excessively vigilant and reactive to environmental cues that could portend danger. Rather than standing up in the turret as his job required, he would often stay crouched down inside. After two weeks of these symptoms he spoke to his unit leadership and was referred to the psychologist.

Case #B

Soldier B. was a 28-year-old married man serving on active-duty in the Army. He experienced his first IED attack on his vehicle while driving on a routine patrol. He recalled being surprised by the loud explosion and the tremendous jolt as his vehicle absorbed the impact of the blast. The vehicle was damaged but drivable, and the unit was able to make it back to base with minimal injuries. Soldier B.'s injuries were limited to a transient discomfort from a headache and bruised eardrums. He reported no significant psychological symptoms following this incident other than an increased wariness when on patrol.

Four months later Soldier B. was on a night patrol when the occupants of a vehicle in his convoy misread the terrain and drove off a sheer 20-foot drop off, rolling the vehicle. Four soldiers were thrown clear of the vehicle and suffered minimal to severe injuries. Four were pinned under the heavy vehicle. Over the next several hours Soldier B. and the other members of his patrol assisted the injured as best as they could and worked to free the soldiers that were pinned. Most of the injured were quickly evacuated by helicopter to the base medical facility,

Pragmatic Case Studies in Psychotherapy, http://pcsp.libraries.rutgers.edu
Volume 1, Module 2, Article 1, pp. 1-25, 07-27-2005 [copyright by authors]

but rescue efforts for those trapped were slowed by the vehicle's weight and armor. One of the trapped soldiers died on the scene.

Two weeks later Soldier B.'s unit was attacked by mortars. At the time he was assigned to "quick reaction force" duties, and his platoon was directed to investigate where the mortars were being fired from. In hindsight, Soldier B. concluded that they were "set up" by the enemy because on the route out to the area where the mortars were fired, an IED was detonated next to his vehicle. Soldier B. was briefly treated in the base medical facility for a "mild concussion" and was back out on patrol two days later, his head still hurting from the effects of the blast. He recalled thinking that the odds of getting hit by an IED again so soon were low.

Two days later he was driving the lead vehicle on a routine patrol when he and the second vehicle were hit by a "daisy chain" IED. Once again, Soldier B. was fortunate in that no one experienced any serious physical injuries. He recalled driving his damaged vehicle back to the base again and passing Iraqi civilians who would point at him and laugh. This evoked intense feelings of anger in Soldier B. Soldier B. associated the onset of significant anxiety symptoms to this third IED incident. He subsequently developed chronic feelings of anxiety, was easily startled by loud noises, would try to avoid hearing or engaging in any conversations about IEDs, and avoided patrol when possible. While driving on patrol he was increasingly tense, hypervigilent, and braced for an IED blast. Having survived three, he was quite fearful that the next IED would seriously injure or kill him or one his colleagues.

The final IED attack occurred within the following week. Soldier B.'s platoon was driving out to conduct a mission when he noticed the carcass of a dog in the road up ahead. He and his partner felt that it was likely the dog was "hot" (wired with explosives). He watched as the vehicle in front of him swerved wide around it. Soldier B. did the same, driving his vehicle as far away from the carcass as the road allowed. The convoy then proceeded on without incident. On the return trip Soldier B. witnessed the lead vehicle pass within five feet of the dog carcass and then saw the blast as it was detonated. At that moment Soldier G's greatest fear was that the detonated IED was the first in a daisy chain of explosives and his vehicle was about to be hit. When that did not occur he got out of his vehicle and watched as the soldiers exited the vehicle that had been attacked. Several were limping and they all appeared shaken but not seriously injured. He felt intensely angry and frightened. He watched the Iraqi civilians who were in the immediate area and briefly pointed his weapon at one whom he perceived as behaving suspiciously. His sergeant then directed him to take his first aid kit and see if there were any injuries to treat. The soldiers' only complaints were headaches, impaired hearing, and minor bruising.

Soldier B.'s anxiety symptoms worsened further following this incident. Before going out on another patrol he asked his unit leadership for help, and he was referred to the psychologist.

Pragmatic Case Studies in Psychotherapy, http://pcsp.libraries.rutgers.edu
Volume 1, Module 2, Article 1, pp. 1-25, 07-27-2005 [copyright by authors]

Case #C

Airman C. was a 22-year-old active duty Air Force airman who was involved in a vehicle-borne explosive device (VBED) attack on his convoy. The convoy was driving through a busy city during the time of the explosion, and numerous pedestrians and other vehicles were present. The first military vehicle in the convoy was attacked with what was estimated to be a 500-pound bomb. The vehicle that was hit was a heavily armored vehicle, but it was still severely damaged and the three vehicle occupants were injured. Airman C. was in the second military vehicle approximately one-third of the way back in the convoy when the first vehicle was attacked. He arrived at the location of the attack within about one minute after the explosion. Airman C. exited his vehicle to provide Combat Lifesaving Support (medical first aid) to the three injured Airmen in the vehicle that was struck. All three Airmen were removed from the vehicle because it became engulfed in fire. One Airman had severe lacerations to the forehead and was bleeding profusely. Another Airman had a brief loss of consciousness and concussion. The third Airman had a laceration in his neck and arm. The damaged military vehicle was engulfed in flames, and after several minutes many of the 50 mm rounds that were still in the truck began to explode, so everyone had to move a significant distance away from the vehicle to avoid being hit by a round.

After providing brief combat lifesaving support and stabilizing the three injured Airmen, Airman C. assessed the surrounding area for additional injured military or civilian personnel. He observed about 10 dead Iraqi civilians including some who had sustained significantly mutilating injuries from the blast. One individual had the right side of his head blown off during the explosion and was lying on the street in a pool of blood. Another individual had been blown under the scoop of a front loader construction vehicle and was unable to be extracted, despite several attempts by the local Iraqi Police. He also noticed a city bus that was left in the middle of the street with all of the windows blown out. He thought to himself, "I really don't want to do it, but I need to check inside that bus to see if there are any casualties inside." The most distressing image was that of an injured Iraqi boy who was sitting near the edge of the street by a light pole. He had received a severely disfiguring facial injury in which the right side of his jaw had been severed and was hanging down in front of his throat. His neck had also been torn open exposing his esophagus, tendon, ligaments, and other tissue. He also had an open fracture of his left femur, and a severe injury to his right foot. Despite his severe injuries, the boy tried to speak English to Airmen C., reaching his hands up and stating, "American, American, American."

At this point about 20 minutes had elapsed since the time of the initial explosion and over a hundred local Iraqi civilians had gathered around the area. For safety and security reasons, Airman C. was told that they needed to depart the area immediately, because they were at risk of being attacked. Airmen C. then became extremely angry and stated, "We need to take care of that boy; I know what to do and I can help him." He was told that the local Iraqis would have to help the boy, and before he was able to provide any medical support he returned to his vehicle and drove away with the remainder of the convoy. He looked back as they were driving away and saw the injured boy still sitting in the street with his hands held up as if asking for help.

Pragmatic Case Studies in Psychotherapy, http://pcsp.libraries.rutgers.edu
Volume 1, Module 2, Article 1, pp. 1-25, 07-27-2005 [copyright by authors]

Airman C. continued on safely to his destination at a military camp where the convoy supplies were delivered. For the remainder of that day he felt anxious, was very shaky, and he kept reliving all of the details of the incident, especially the part related to the Iraqi boy. He showered that evening, and he later said that he cried uncontrollably for several minutes while in the shower. When he tried to sleep that night, the images came to him immediately and he had significant trouble falling asleep. Once asleep, he had nightmares about the incident and woke up repeatedly throughout the night. He also was startled awake several times when one of his roommates made a small noise in his room. Over the next 10 days he continued to have repeated disturbing memories, thoughts, images, and dreams about the explosion. He tried his best to avoid thinking about the incident, but he found that many things throughout the day triggered memories of the event. He discussed his difficulties with a supervisor and was encouraged to seek assistance from the psychologist.

3. GUIDING CONCEPTION, WITH RESEARCH AND CLINICAL EXPERIENCE SUPPORT

The authors' beliefs and practices for assisting individuals following exposure to potentially traumatizing events have evolved over the past 10 years in parallel with changes in the body of research literature on this topic. Historically the U. S. military services have adopted the Critical Incident Stress Management (CISM) model (Mitchell & Everly, 2000) for preventing PTSD. The CISM model is a multi-pronged approach for working with groups and individuals to mitigate the effects of extreme stress. Major components of the model include pre-incident preparedness training, on-scene support, demobilizations, defusings, and critical incident stress debriefings (CISD). The CISD component, more generally referred to as psychological debriefing, is a one-time structured intervention, usually conducted in a small group format, held within several days to a week following trauma exposure. The intervention encourages participants to discuss in detail their personal experience of the trauma, to include thoughts, feelings, reactions, and symptoms. The facilitator helps to normalize reactions, encourage adaptive coping, and educate participants about how to obtain further assistance if needed (Mitchell, 1983; Mitchell & Everly, 1996).

The CISM model has become firmly embedded in the U. S. military culture through its inclusion in written standard operating procedures (Unites States Army, 1994; United States Air Force, 1999). For example, the Air Force requires that personnel at each base assigned to mental health response teams for disasters or traumas receive formal training in the CISM model. As a result, psychological debriefing is the most commonly reported intervention for military members exposed to traumatic events (Armfield, 1994; Deahl et al., 2000; MacDonald, 2003).

There are a number of factors that have made psychological debriefing especially appealing to a military population. Psychological debriefing de-emphasizes psychotherapy and pathology, while emphasizing normalization of reactions and returning service members to duty. The term "debriefing" suggests a similarity with operational military debriefings where service members meet after a mission to review experiences and identify lessons learned. Thus, service members can participate in psychological debriefings with less of the stigma often associated

Pragmatic Case Studies in Psychotherapy, http://pcsp.libraries.rutgers.edu
Volume 1, Module 2, Article 1, pp. 1-25, 07-27-2005 [copyright by authors]

with mental health treatment. Throughout the 1990's many military psychologists including the authors found that psychological debriefings had good face validity for both facilitators and participants, were usually perceived as beneficial by the target audience, and appeared to contribute to the goal of reducing the risk of delayed stress disorders (Budd, 1997; Cigrang, Pace, & Yasuhara, 1995; Hall & Rowe, 1997; Jiggets & Hall, 1995).

In recent years the routine use of psychological debriefing following exposure to potentially traumatizing events as a means of preventing PTSD has received criticism (Gray & Litz, 2005). Part of the criticism stems from growing concern that aspects of psychological debriefing as it is commonly practiced are out of step with what we are learning about how people respond to and recover from trauma (Litz, Gray, Bryant, & Adler, 2002). One concern is the implicit assumption that everyone exposed to a traumatic event may benefit from participation in a psychological debriefing.

We now know that the majority of individuals exposed to a traumatic event show resilience and natural recovery following exposure to trauma and do not go on to develop chronic PTSD (for a review, see Bonnano, 2004). Blanket recommendations of debriefing for all exposed appears unnecessary. Rates of PTSD do tend to vary depending on level of trauma exposure and characteristics of the individual and his or her history (Brewin, Andrews, & Valentine, 2000; Ozer, Best, Lipsey, & Weiss, 2003). However, as noted by Ozer at el. (2003), our models for predicting who will develop PTSD can at best account for only 20% of the variance. Even if we could accurately identify individuals certain to develop PTSD, it does not seem plausible that a single session of psychological debriefing would be sufficient to prevent the disorder from occurring (Litz et al., 2002).

Psychological debriefing has also drawn sharp criticism due to the accumulation of findings from randomized clinical trials that show either no advantage compared to control conditions or in some cases a worsening effect (for reviews, see Bisson, McFarlane, & Rose, 2000; Litz et al., 2002; Rose, Bisson, & Wessely, 2002; van Emmerik, Kamphuis, Hulsbosch, & Emmelkamp, 2002). Proponents of psychological debriefing have published reviews of the literature that reached more favorable conclusions (Everly & Mitchell, 2000; Mitchell & Everly, 2000).

In 2001, a group of 58 leading disaster mental health experts from six countries met to review the research on early psychological interventions following trauma and reach a consensus on what works and what doesn't (NIMH, 2002). The workshop participants concluded that there "is some Level 1 evidence suggesting that early intervention in the form of a single one-on-one recital of events and expression of emotions evoked by a traumatic event (as advocated in some forms of psychological debriefing) does not consistently reduce risks of later developing PTSD or related adjustment difficulties." (p. 8). Instead, the workshop recommended that mental health professionals involved in early intervention focus primarily on (1) providing psychological first aid (e.g., reduce physiological arousal, mobilize social support, provide information, foster communication); (2) outreach (e.g., offer information/education while walking around and visiting individuals at the worksite); (3) fostering reliance and recovery (e.g.,

provide coping skills training, look after the bereaved); (4) triage (e.g., identify vulnerable, high-risk individuals and groups, conduct clinical assessments, refer when indicated); and (5) providing intervention (e.g., reduce or ameliorate symptoms and improve functioning).

Litz et al.'s (2002) review noted two studies (Foa, Hearst-Ikeda, & Perry, 1995; Bryant, Harvey, Dang, Sackville, & Basten, 1998) that indicated cognitive behavioral therapy (CBT) may be an efficacious alternative to psychological debriefing as an early intervention for preventing PTSD. In the first study, Foa et al. (1995) evaluated the effects of a four-session CBT program on PTSD symptom severity, depression symptoms, and frequency of PTSD diagnosis for 10 recent victims of sexual or nonsexual assault. The treatment participants were compared to a matched group of 10 assault victims who received monthly assessments only. The CBT program consisted of repeated imaginal exposure, in vivo exposure, cognitive therapy, and instructions in relaxation.

In the first session the therapist evaluated the patient's PTSD symptoms, provided an overview of the program, and helped the patient develop a list of situations that she had been avoiding since the assault. The second session introduced the technique of imaginal exposure. After receiving instruction in relaxation techniques, the patient was asked to close her eyes and described the assault in the present tense "as if it were happening now". The narrative was audiotaped and the therapist made note of any cognitive distortions that could be serving to maintain the PTSD symptoms. The patient was provided a copy of the audiotape and was asked to listen to the narrative several times during the week. She was also encouraged to begin confronting some of the avoided situations on her list. The third session began with a review of homework and 45 minutes of imaginal exposure. The therapist then introduced the concept of cognitive restructuring and facilitated a dialogue about any cognitive distortions evident in the patient's narrative. Homework included repeated imaginal exposure, confronting avoided situations, and self-monitoring of negative thoughts, distressing feelings, and cognitive distortions. The final session included review of homework, imaginal exposure, cognitive therapy, and a review of the skills the patient had learned in the program.

The treatment and control groups were compared on the dependent measures at two months and five and one-half months post-assault. At two months post-assault the treatment participants reported significantly lower PTSD symptoms and a lower incidence of PTSD diagnosis. At the five and one-half month follow-up, the treatment group participants showed lower means on all measures but only the re-experiencing PTSD symptom scale and the depression severity scale were significantly different from the control group.

Bryant et al. (1998) extended the earlier work of Foa et al. (1995) by comparing the effects of a similar 4-session CBT program to a nondirective supportive counseling (SC) condition for 24 survivors of motor vehicle or industrial accidents who met the diagnostic criteria for Acute Stress Disorder. Treatment outcome measures were diagnostic status, PTSD symptom severity, anxiety, and depression. The content of the CBT program included relaxation training, imaginal exposure, cognitive therapy, and graded in vivo exposure. The SC condition was comprised of education about trauma and problem-solving skills, diary-keeping of problems and

mood states as homework, and general support. The results showed that significantly fewer participants in the CBT group met criteria for PTSD than the SC group at both post-treatment and six-month follow-up. CBT participants also displayed lower depression symptoms at 6 months post-trauma.

The Foa et al. (1995) and Bryant et al. (1998) studies are limited by small sample size, but they do provide encouraging results for the prevention of PTSD in the recently traumatized. To our knowledge, they are the only published studies that have systematically evaluated brief CBT interventions as secondary prevention for PTSD. In contrast, CBT is well established as an effective psychotherapy for treatment of chronic PTSD in military and non-military populations (Foa, Keane, & Friedman, 2000; VA/DoD PTSD Practice Guidelines, 2004). In an interesting series of studies, Foa and colleagues (Foa, Dancu, Hembree, Jaycox, Meadows, & Street, 1999; Foa & Rauch, 2004) and others (Marks, Lovell, Noshirvana, Livanou, & Thrasher, 1998) attempted to determine whether there is a treatment advantage to multi-component CBT interventions for PTSD over exposure therapy alone. Foa et al. (1999) found no significant differences in treatment outcome when comparing exposure therapy, stress inoculation training (SIT), and SIT plus exposure therapy. Similarly, Marks et al. (1998) found no advantage of combining cognitive psychotherapy with exposure in comparison to exposure therapy alone. Although there were no statistically significant group differences in either study, the direction of the mean differences favored exposure therapy alone on many of the dependent measures.

In a more recent study, Foa and Rauch (2004) also found that adding cognitive therapy to exposure therapy did not result in greater improvement in negative cognitions for patients with PTSD. Thus, a consistent finding in these studies has been an absence of advantage for combined CBT treatment over exposure therapy alone for PTSD.

Exposure therapy may be especially effective for helping to prevent PTSD because it directly counters the natural reaction to avoid internal and external reminders of the traumatic event. Most individuals exposed to severe trauma want desperately to forget the event and to not re-experience any of the cognitive, emotional, behavioral, or physical symptoms associated with the event. In theory, the natural tendency to avoid internal and external stimuli may in actuality make it more likely over time that symptoms will be triggered whenever stimuli are encountered that remind the individual of the initial traumatizing event. Repeated exposure appears to lead to habituation and potential extinction of extreme emotional responding to trauma memories in a relatively quick period of time. Decreased emotional responding may then provide the opportunity for the individual to organize their beliefs and perceptions of the trauma in a manner that restores feelings of competence and promotes a realistic and manageable view on environmental threats (Foa & Kozak, 1986).

With the preceding discussion as background, the authors propose the following guidelines for working with service members recently exposed to IED attacks.

1. Early intervention for the population of service members exposed to IED attacks should be limited to psychological first aid (NIMH, 2002). The majority of those exposed are not

likely to develop long-term psychopathology. Particular attention needs to be given to educating affected service members and their leadership on helping agencies that are available and monitoring those members who exhibit the greatest distress and/or are at higher risk based on our knowledge of risk factors for development of PTSD.

2. Use of single-session psychological debriefing or exposure therapy as preventive interventions for all individuals exposed is inappropriate. Service members who seek help or are referred for psychological assistance following IED exposure should receive a comprehensive clinical evaluation.

3. Treatment for service members who meet the criteria for Acute Stress Disorder or PTSD should primarily entail exposure-based therapies (repeated imaginal exposure, in vivo exposure). Exposure therapy may be uniquely suitable for use in the context of a combat zone where the goal is to return service members to a high-threat environment in a relatively brief period of time. As noted by Foa et al. (1999), exposure therapy has the advantage of being less complex and skill-based in comparison to other CBT techniques, without any loss of treatment effectiveness. Theoretically, this would allow therapy to progress more rapidly toward symptom reduction and restored functioning.

4. ASSESSMENT OF THE CLIENT'S PRESENTING PROBLEMS AND GOALS

The clinical context of the assessment was very applied and problem-focused. In general, the goals of the assessment were to evaluate the severity of PTSD symptoms, screen for the existence of other concurrent psychopathology, and assess the individual's availability for participation in treatment. Highly structured clinical interviews were not used in this setting. Availability for treatment was determined by the individual's own level of motivation for obtaining assistance and the ability of their military unit to allow them time away from duties.

The three service members were seen individually by one of the authors for an assessment session followed by four individual therapy sessions. The assessment included a clinical interview, collateral information from unit leadership, and completion of the PTSD Checklist – Military Version, called the PCL-M (Weathers, Litz, Herman, Huska, & Keane, 1993). This is a 17-item self-report measure of PTSD symptoms written specifically for military experiences. Each item corresponds to the DSM-IV diagnostic criteria for PTSD (American Psychiatric Association, 1994) and is scored on a 1 (not at all) to 5 (extremely) scale. Previous research on the PCL-M indicated mean scores of 64.2 (SD=9.1) for PTSD subjects and 29.4 (SD= 11.5) for non-PTSD subjects (Weathers et al., 1993). The PCL-M is a government document in the public domain and a copy is included in Table 1.

Case #A

Airman A.'s first appointment with the psychologist was 17 days after exposure to the IED attack on his convoy. Airman A.'s written description of his presenting problem was "I'm

zoning out all the time, can't sleep and having nightmares, can't seem to feel motivated at work, find it hard to eat, I'm scared and I can't do my job how I used to. Thinking about my family problems too." His stated goal was to regain his previously good level of functioning on his job. As noted previously, Airman A. reported persistent re-experiencing symptoms (nightmares, intrusive images, intense distress at reminders of the trauma); avoidance (withdrawal from others, avoidance of conversations); and arousal (hypervigilence, easily startled, sleep disturbance) following the IED incident. Airman A.'s initial score on the PTL-M was 69.

Airman A described his emotional and occupational functioning prior to the IED incident as good. This was corroborated by his leadership, who viewed Airman A. as a valuable and competent member of the unit. He denied any problems with his physical health, and he was not taking any medications with the exception of an anti-malarial prophylactic. This was his first contact with a mental health professional. He reported no prior history of significant emotional problems. Airman A. had a number of good friends on deployment with him and described his unit as cohesive. Airman A. appeared to be the type of individual who made friends easily. Airman A. was not married but had a girl friend in Puerto Rico. He described his religious beliefs as very important to him.

Airman A. grew up as the only child in a Spanish-speaking household in Puerto Rico. He had a large extended family in Puerto Rico and the United States. He moved frequently while growing up as a result of his parents' difficulty in finding work. He lived in neighborhoods where violence, crime, and gang activity were common. He witnessed multiple gang-related shootings during high school, was present on two occasions when friends were shot, and often felt that his life and his parents were at risk. Airman A. entered the Air Force two years ago to obtain job training, an income, and escape the violence in his neighborhood.

Case #B

Soldier B.'s first appointment with the psychologist was 10 days after the fourth IED attack on his convoy. He reported an intense fear of performing convoy duty, recurrent intrusive images and thoughts related to the traumas, and an increased startle response. He also reported avoiding patrol and convoy duties and feelings of guilt and shame about his fears. Soldier B.'s stated goal was to regain his pre-trauma functioning and to "be relaxed like I am driving back in the states" while outside the wire. Soldier B.'s initial score on the PCL-M was 59.

Soldier B. stated that prior to the IEDs he was able to fulfill his duties without excessive fear or hypervigilance. Soldier B.'s unit leadership described him as an excellent soldier and were very supportive of his participation in treatment. Soldier B. denied any problems with his physical health and was not taking any medications except for an anti-malarial prophylactic. Soldier B. had no history of mental health treatment and no significant family history of mental or physical illness.

Soldier B. was born in Mexico and lived there until age 10 when he moved to California. Soldier B. graduated from high school and worked in odd jobs before joining the Army after he

Pragmatic Case Studies in Psychotherapy, http://pcsp.libraries.rutgers.edu
Volume 1, Module 2, Article 1, pp. 1-25, 07-27-2005 [copyright by authors]

was granted US citizenship. Soldier B. had been married for seven years and did not have children.

Case #C

Airmen C.'s first appointment with the psychologist was 10 days after his convoy was attacked by the vehicle-borne explosive device (VBED). He completed the PCL-M and scored a 67. He noted that since the time of the VBED explosion he had been having significant difficulties with flashbacks related to the event, especially of the little boy with the severe injuries. He felt constantly on edge and was easily startled by loud noises. He also found that exposure to certain smells, such as smoke from the base burn pit, reminded him of the smoke of the burning vehicle. He also had difficulty falling and staying asleep and would often startle awake at the sound of any noise that occurred in his tent. He had significant anxiety when he was exposed to any third country nationals (TCNs) on base. TCNs are individuals from another country (e.g., The Philippines, Turkey) who have been contracted to provide particular services on base such as preparing meals and cleaning facilities. He felt very uncomfortable around the TCNs and was worried that perhaps they would attack him or something was going to happen.

Airman C. had been married for about 2 years and had no children. His primary support system included his wife and several other individuals from his home base who had deployed with him. He grew up in an intact family and had no previous history of mental health treatment and no history of any previous exposure to significant trauma. His convoy was attacked on several previous convoy missions but there were never any significant injuries to personnel that occurred.

5. FORMULATION AND TREATMENT PLAN

As mentioned earlier, the three service members all met the symptom criteria for full-blown PTSD at their intake session but not the duration criterion of symptoms lasting more than 30 days. Given the recency of the trauma, a diagnosis of Acute Stress Disorder may have had the best fit with the assessment data. However, none of the service members volunteered that they were experiencing the dissociative symptoms (Acute Stress Disorder criterion B) that are required for the diagnosis. There were no comorbid diagnoses. The service members' pre-trauma psychological and occupational functioning appeared to have been quite good. There was a general absence of pre-trauma risk factors for development of PTSD with the exception of Airman A's history of exposure to interpersonal violence throughout his adolescence. Each service member reported a high level of perceived life threat and intense negative emotional arousal during and immediately after the trauma. These peri-traumatic factors mirror PTSD criterion A and are associated with higher rates of PTSD (Ozer at al., 2003). In general, levels of post-trauma social support were high for the service members.

The treatment plan included four sessions of exposure therapy in which the primary focus of the treatment sessions was prolonged imaginal exposure to the traumatic event. Imaginal exposure implementation was modeled after Foa et al. (1995) with the exception that two of the

three service members did not have access to cassette tape players to listen to recordings of the imaginal exposure as homework. Prior to the initiation of the exposure, informed consent was obtained by outlining the treatment plan and details of how the exposure sessions would be structured. Each individual agreed to participate in the exposure therapy prior to the start of treatment.

For the exposure procedure, individuals were asked to sit in a comfortable chair with a headrest or pillow to support their head. They were asked to close their eyes and to describe as concretely as possible the step-by-step details of the traumatic incidents. Individuals were asked to describe the setting prior to the events, including a description of what they saw around them, the air temperature, what they were wearing, any smells or aromas they could remember, and as many other details as they could remember. They were asked to describe the events in first person and to say aloud anything that they may have actually said during the actual event. The individuals were told that it was not uncommon for people to become quite upset during the exposure and to perhaps feel very similar to how they felt during the initial incident. They were told that it was not uncommon for individuals to cry, shake, feel nauseated, or to become choked up and have difficulty talking during the exposure. They were encouraged to not be embarrassed by whatever natural reaction they had during the exposure, but instead to see their reactions as very normal reactions to the traumatic event.

All three of the individuals were somewhat apprehensive prior to the start of the exposure, but all were willing to voluntarily complete it in hope that it would help them. Precautions were made to try to ensure that the clinic environment would be as quiet as possible during the exposure and that there would be no interruptions during the session. Consent was obtained to audiotape the sessions.

After the completion of the exposure portion of each session, the individuals were able to open their eyes, sit up in their chair, wipe their tears, blow their nose, take a heavy sigh of relief at the completion of the exposure, and to generally compose themselves. The initial exposure session with each individual was especially emotional and draining. The psychologists provided general support, normalization of their reactions, and asked the individuals questions about the exposure experience.

This same procedure was followed for each subsequent treatment session, except that the duration of the exposure portion of each session tended to be shorter. Subsequent exposure sessions also tended to be less emotionally draining and easier for the individual to complete. Brief cognitive therapy was included in the therapy session when indicated and as time allowed. Some basic cognitive-behavior therapy strategies were reviewed during the second through forth sessions. Cognitive-behavior therapy strategies included differentiating between alarming versus reassuring thinking and the physical, emotional, and behavioral consequences of these thinking patterns. Individuals were also encouraged to voluntarily expose themselves to any stimuli that they might have been avoiding that may have been related to the traumatic event. Length of therapy was expected to be three or four 90-minute sessions over a two to three week period following the assessment session.

6. COURSE OF THERAPY

Case #A

Airman A. readily agreed to the treatment protocol when presented at the conclusion of the first assessment session. Given the level of impairment he had been experiencing when performing his job as turret gunner, Airman A. also agreed with the psychologist's recommendation that he be temporarily removed from this duty. This recommendation was discussed with his supervisor following the assessment session. Airman A. was scheduled to return for the first therapy session two days later.

Airman A. was subsequently seen for three therapy sessions over the next 10 days. The first imaginal exposure intervention lasted approximately 50 minutes and entailed reviewing the trauma event two times in succession. Airman A. showed marked anxiety symptoms throughout the first exposure (e.g., anxious affect, physical tension), which lessened during the second exposure. At the conclusion of the first session the psychologist and Airman A. collaboratively brainstormed ideas for graded in vivo exposure in between therapy sessions. Airman A. reported that he had the opportunity to assist his supervisor conduct live-fire training on the 50-caliber machine gun at the range outside the base. He thought this would give him a chance to be "outside the wire" and exposed to loud noises but in a relatively safe area.

The second and third sessions involved 25 to 30 minutes of imaginal exposure per session. These interventions did not evoke the level of distress evident in the first session. Airman A. perceived himself as succeeding in the in vivo exposure. He reported a decrease in reactivity over time in response to the firing of the loud weapons. He appeared to be benefiting from spending time working directly with his supervisor who he described as highly supportive. In the second and third session Airman A. was also motivated to discuss the exposure to violence and threats to his family he encountered throughout his youth. He saw striking similarities between these experiences and the threat of IED attacks in Iraq. Both experiences involved frequent exposure to physical danger from a faceless enemy who wanted to harm him and those closest to him. Airman A. found it helpful in understanding his emotional reaction to the IED attack on his patrol to consider the event in the context of his family background. Airman A. completed the PCL-M at the third session and his score had declined to 32 from the score of 69 obtained at his intake session.

The end of the third session coincided with the movement of Airman A.'s military unit to another location in Iraq where the insurgency threat was higher. Airman A. felt ready to return to his normal duties and this recommendation was conveyed to his unit leadership. He expressed strong appreciation for the help he was given and he agreed to follow-up with the psychologist assigned to his new location.

About 10 days after arriving at his new location, Airman A. was seen for a session with the psychologist at that location. He completed the PCL-M and scored a 24. He reported that he was doing well, had successfully completed the initial training for his new position, and that his

previous symptoms were no longer interfering with his ability to perform his military duties. Airman A. also noted that although his new mission was more dangerous than his previous one, he was well-connected and supported by his military peers, and he did not want them to perform any missions without him.

Case #B

Soldier B. agreed to the treatment protocol at the conclusion of the intake assessment, although he stated he would prefer to "just forget about" the trauma incidents. Soldier B. also concurred with the psychologist's suggestion that he be removed from patrol duty and assigned temporarily to the base where the psychologist was located. His unit leadership agreed with this suggestion. Soldier B. was scheduled to return for his first treatment session two days later.

Soldier B. was seen for four therapy sessions over a one-month period. The first therapy session lasted approximately 90 minutes and included 70 minutes of imaginal exposure. Soldier B. described each of the IED incidents and the vehicle roll over. Soldier B. appeared anxious as he described the incidents, gripping the armrests on his chair and at times hesitant and halting in his speech. At the end of the first session Soldier B. was asked about his comfort level during the imaginal exposure. He responded by stating that he found it very uncomfortable but was willing to continue if the psychologist believed it would help alleviate his symptoms. Soldier B. reiterated his interest in regaining the care-free, relaxed outlook he experienced while on patrol before the first IED. Through the use of reflective listening, the psychologist prompted Soldier B. to consider whether this treatment goal was realistic or adaptive.

The second session was scheduled for two days later. At the beginning of the session, Soldier B. reported that he continued feeling "shaky" and easily startled in response to reminders of the trauma. These symptoms had been particularly evident following a rocket attack on the base that had occurred between therapy sessions. Soldier B. was asked to describe again the last IED incident and the vehicle roll-over as these incidents seemed to be the most traumatic for him. He appeared anxious during the imaginal exposure but less so in comparison to the first session. Following the imaginal exposure, the psychologist engaged Soldier B. in a Socratic dialogue on a belief he had expressed. The belief was a lack of confidence in his ability to provide Combat Lifesaving Support in the event that one of his unit buddies was severely injured by an IED. This belief was reinforced by feelings of "uselessness" he had experienced after the vehicle rollover when exposed to the badly injured and trapped soldiers, and appeared to be a contributor to the maintenance of his anxiety. During the dialogue the psychologist encouraged Soldier B. toward a more realistic and positive assessment of his medical skills, and toward recognition that the basic medical care he rendered to several soldiers following the roll over was helpful and accurate.

At the conclusion of the second session the psychologist brainstormed with Soldier B. on ideas for beginning a graduated in vivo exposure. Soldier B. suggested a return to patrol duty but limited to night time, which he perceived as less threatening. This recommendation was conveyed to the unit leadership and agreed on.

Pragmatic Case Studies in Psychotherapy, http://pcsp.libraries.rutgers.edu
Volume 1, Module 2, Article 1, pp. 1-25, 07-27-2005 [copyright by authors]

Soldier B. returned to the therapist's base for a third therapy session one week later. The session was primarily used to review his in vivo exposure experiences. Soldier B. reported successfully participating in a week of night patrols and one daytime patrol dedicated to the location of IEDs. He had one particular incident that triggered significant anxiety. His squad was directed to drive out to the launch site coordinates of a mortar attack on the base. Soldier B. was fearful that this could be a set-up for an ambush. Soldier B. stated with some pride that he was able to keep his anxiety at a manageable level and accomplish the mission. He noted that listening to music on headphones was a helpful distracter from alarming thoughts while driving on patrol. Soldier B.'s score on the PCL-M administered at the third session was 38, down from a score of 59 at the intake session.

The fourth session was scheduled two weeks later. Soldier B. participated in 20 minutes of imaginal exposure to the last IED incident. This was associated with a mild anxiety response but considerably less than the first treatment session. The psychologist and Soldier B. then reviewed the in vivo experiences from the preceding two weeks. He was continuing night patrols and had the support of his unit leadership to avoid daytime patrols and being the lead vehicle when feasible. Soldier B. described several patrols through a threatening environment where he felt quite anxious but was able to perform his duties adequately. He expressed a realization that he is likely to continue feeling anxiety in these situations but that his response was human and normal. He recognized that his initial goal of recapturing a relaxed, unconcerned attitude while on patrols and convoys was unrealistic and probably dangerous as well.

Soldier B. was satisfied with the outcome of his treatment and expressed a strong appreciation for the assistance he was given. He recognized he was still actively avoiding some reminders of the trauma (e.g., conversations about IEDs), but felt that this was helpful. He completed the PCL-M and had a score of 39. He was very thankful for the support he received from his unit leadership and felt this was key to his success in returning to full duties. (Note that there was no further follow-up beyond this fourth session.)

Case #C

The first exposure therapy session for Airman C. lasted about 1½ hours in duration, including a 76-minute imaginal exposure. Airman C. became visibly distressed during the initial exposure session. He cried, became choked up, and had difficulty talking during the more difficult portions of the exposure. Nevertheless, he completed the initial exposure session without interruption and reported being physically and emotionally drained after the session. He was given an audiotape of the treatment session and asked to listen to it at least once over the next week.

The second treatment session occurred one week after the first session. At the start of the second treatment session, Airman C. completed the PCL-M and had a score of 52, which was a reduction from his previous score of 67. The second treatment session was significantly easier for him to complete, and the duration of the imaginal exposure portion (56 minutes) was 20 minutes less than in the initial session. After the completion of the imaginal exposure portion of

the session, Airman C. reviewed how he had visited the up-armored vehicle that had been destroyed during the VBED attack. Between the first and second treatment sessions, the vehicle had been delivered to the base on the back of a flat-bed truck. He noted that initially he was very hesitant to go see the vehicle, but then decided he wanted to see what it looked like considering it was still burning when he had left the site of the VBED explosion. Upon initially approaching the vehicle, he did not believe it was the same vehicle because of the tremendous destruction to the vehicle. However, he eventually saw the vehicle identification number on one side of the vehicle and then realized that is was indeed the vehicle from the attack. He noted re-experiencing some of the symptoms (increased heart rate, queasy feeling in his stomach, images of the attack) as he viewed the vehicle and smelled the burnt remains of the vehicle. For the remainder of the second treatment session, the visit to observe the vehicle was used as an example of graduated exposure and how this was an important part of treatment. He also noted that he had listened to the audiotape of the initial treatment session during the previous week. He reported that it was difficult to listen to, but he understood the importance of this exercise in terms of the overall treatment plan.

Airman C. completed PCL-M at the start of the third session and scored a 40. The third treatment session occurred about 1 week after the second session and included a 43-minute imaginal exposure that was significantly less distressing than the previous two exposures. After the imaginal exposure portion of the session, Airman C. reviewed several examples of how he was gradually exposing himself to stimuli that reminded him of the event. This included talking with several different people about the details of the event and riding in a vehicle with several TCNs (third country nationals). An unexpected exposure occurred when he had to visit the military hospital at the base where he was assigned. This hospital reminded him of the visit to a similar hospital at a different location that he had gone to immediately after the attack to visit his friends who had been injured. Once again, this event was used to discuss the potential importance of exposure to stimuli related to the attack and how avoidance of exposure may actually perpetuate the stress symptoms over time.

Airman C. completed the PCL-M at the start of the fourth treatment session and scored a 20. The fourth treatment session occurred about 2 weeks after session three and included an imaginal exposure that lasted 33 minutes. This final exposure was remarkably easier for him to complete and he did so without any observable distress. He noted a significant diminishment of his symptoms over the previous 2 weeks and how he felt his was much more "like his old self again." He indicated that although he knew he would never forget the VBED attack, he no longer had regular memories, flashbacks, or symptoms related to the attack. Although he had not been asked to return to regular convoy duties since the date of the attack, he reported that he was prepared to do so if assigned to perform such duties. Informal follow-up was conducted at the worksite during a Purple-Heart award ceremony for several of the Airmen who had been injured during the VBED attack. Airmen C. indicated that he continued to do well, did not require any follow-up treatment, and that he planned to remain in theater to complete the remainder of his deployment.

Pragmatic Case Studies in Psychotherapy, http://pcsp.libraries.rutgers.edu
Volume 1, Module 2, Article 1, pp. 1-25, 07-27-2005 [copyright by authors]

7. THERAPY MONITORING AND THE USE OF FEEDBACK INFORMATION

The PCL-M (Weathers et al., 1991; 1993) was the primary source of symptom monitoring over the course of treatment. This measure was administered at the initial and final treatment sessions and during most of the other treatment sessions. The range of possible scores on the PCL-M is 17 to 85. Normative data for the PCL-M is derived from two samples of military veterans: 123 male Vietnam War veterans and 1006 male and female veterans of the Persian Gulf War (Weathers et al., 1993). In these samples the PCL-M total score showed a high two to three day test-retest reliability (.96), and internal consistency (.97). The cut-off score of 50 for predicting PTSD diagnosis yielded a sensitivity of .82, i.e., 82% of veterans with a diagnosis of PTSD had a PCL-M score of 50 or greater, and a specificity of .83., i.e., 83% of veterans without a diagnosis of PTSD had a PCL-M score of below 50.

Information on the service members' occupational functioning at the conclusion of therapy was obtained via self-report and feedback from unit leadership.

8. CONCLUDING EVALUATION OF THE THERAPY'S PROCESS AND OUTCOME

The results of the exposure therapy for all three individuals are included in Figure 1. Each individual's initial baseline measures (Airman A. = 69; Soldier B. = 59; Airman C. = 67) were at a level that is considered to be in the range of PTSD. At the final session the scores were reduced by an average of 56%, and the final PTSD Checklist scores were within the non-clinical range (Airman A. = 24; Soldier B. = 39; Airman C. = 20). Soldier B.'s responses to the last PCL-M showed a persistence of moderate but sub-clinical symptoms, e.g., he was avoiding thinking or talking about a stressful military experience, and he was avoiding activities or situations because they reminded him of a stressful military experience. These responses reflected his continued use of some avoidance coping strategies.

The duration of time between the traumatizing event and the last treatment session was approximately 5 weeks for each individual. Levels of symptoms were sufficiently reduced at 30 days post-trauma so that diagnoses of PTSD were not warranted. There was convincing evidence from self-report that the three military members had regained a good level of occupational functioning. Our clinical impression was that the repeated imaginal and in vivo exposure therapies played a key role in achieving the positive outcomes. Other curative factors likely included high levels of social support available in the military members' environment and the natural recovery processes for individuals with good pre-morbid functioning. Future research in the form of randomized clinical trials would be necessary to better evaluate the relative contribution of treatment and non-treatment factors to early recovery from IED traumas.

9. REFERENCES

American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders,* 4th ed. Washington, D.C.: American Psychiatric Association.

Armfield, F. (1994). Preventing post-traumatic stress disorder resulting from military operations. *Military Medicine, 159,* 739-746.

Bisson, J. I., McFarlane, A. C., & Rose, S. (2000). Psychological debriefing. In E. B. Foa, T. M. Keane et al. (Eds.), *Effective treatments for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies* (pp. 39-59). New York, NY: Guilford Press.

Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist, 59,* 20-28.

Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology, 68,* 748-766.

Bryant, R.A. (2004). Acute stress disorder: Course, epidemiology, assessment, and treatment. In B.T. Litz (Ed.), *Early intervention for trauma and traumatic loss* (pp. 15-33). New York, Guilford.

Bryant, R. A., Harvey, A. G., Dang, S. T., Sackville, T., & Basten, C. (1998). Treatment of acute stress disorder: A comparison of cognitive-behavioral therapy and supportive counseling. *Journal of Consulting and Clinical Psychology, 66,* 862-866.

Budd, F. (1997). Helping the helpers after the bombing in Dhahran: Critical incident stress services for an air rescue squadron. *Military Medicine, 162,* 515-520.

Cigrang, J. A., Pace, J. V., & Yasuhara, T. T. (1995). Critical incident stress intervention following fatal aircraft mishaps. *Aviation, Space, and Environmental Medicine, 66,* 880-882.

Deahl, M. Srinivasan, M, Jones, N., Thomas, J., Neblett, C., & Jolly, A. (2000). Preventing psychological trauma in soldiers: The role of operational stress training and psychological debriefing. *British Journal of Medical Psychology, 73,* 77-85.

Everly, G. S. Jr., Mitchell, J. T. (2000). The debriefing "controversy" and crisis intervention: A review of lexical and substantive issues. *International Journal of Emergency Mental Health, 2,* 211-225.

Foa, E. B., Dancu, C. V., Hembree, E. A., Jaycox, L. H., Meadows, E. A., & Street, G. P. (1999). A comparison of exposure therapy, stress inoculation training, and their combination for reducing posttraumatic stress disorder in female assault victims. *Journal of Consulting and Clinical Psychology, 67,* 194-200.

Foa, E. B., Hearst-Ikeda, D., & Perry, K. J. (1995). Evaluation of a brief cognitive-behavioral program for the prevention of chronic PTSD in recent assault victims. *Journal of Consulting and Clinical Psychology, 63,* 948-995.

Foa, E. B., Keane, T. M., Friedman, M. J. (Eds.). (2000). *Effective treatments for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies.* New York, NY: Guilford Press.

Foa, E. B., & Kozak, M. J. (1986). Emotional processing of fear: Exposure to correct information. *Psychological Bulletin, 99,* 20-35.

Foa, E. B., & Rauch, S. A. M. (2004). Cognitive changes during prolonged exposure versus prolonged exposure plus cognitive restructuring in female assault survivors with posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology, 72,* 879-884.

Friedman, M. J. (2004). Acknowledging the psychiatric cost of war. *New England Journal of Medicine, 351,* 75-77.

Gawande, A. (2004). Causalities of war: Military care for the wounded from Iraq and Afghanistan. *New England Journal of Medicine, 351,* 2471-2475.

Global Security.org. (2004). Improvised Explosive Devices (IEDs) – Iraq. Retrieved January 9, 2005 from Global Security Web site: http://www.globalsecurity.org/military/intro/ied.htm.

Gray, M. J. & Litz, B. T. (2005). Behavioral interventions for recent trauma: empirically informed practice guidelines. *Behavior Modification, 29,* 189-215.

Hall, D. P., & Rowe, B. A. (1997). The Fort Bragg sniper attack and mental health response. *Military Medicine, 162,* 579-581.

Hoge, C. W., Castro, C. A., Messer, S. C., McGurk, D., Cotting, D. I., & Koffman, R. L. (2004). Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *The New England Journal of Medicine, 351,* 13-22.

Horowitz, M. J., & Solomon, G. F. (1975). A prediction of delayed stress response syndromes in Vietnam veterans. *Journal of Social Issues, 31,* 67-80.

Jiggets, S. M., & Hall, D. P. (1995). Helping the helper: 528th Combat Stress Center in Somalia. *Military Medicine, 160,* 275-277.

Jones, S. (2004). Paying the price: The psychiatric cost of war. *Archives of Psychiatric Nursing, 18,* 119-120.

Kaylor, J. A., King, D. W., King, L. A. (1987). Psychological effects of military service in Vietnam: A meta-analysis. *Psychological Bulletin, 102,* 257-271.

Kessler, R. C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. B. (1995). Posttraumatic stress disorder in the National Comorbidity Study. *Archives of General Psychiatry, 52,* 1048-1060.

King, D. W., King, L. A., Foy, D. W., Keane, T. M., & Fairbank, J. A. (1999). Posttraumatic stress disorder in a national sample of female and male Vietnam veterans: Risk factors, war zone stressors, and resilience-recovery variables. *Journal of Abnormal Psychology, 108,* 164-170.

Lamberg, L. (2004). Military psychiatrists strive to quell soldiers' nightmares of war. *Journal of the American Medical Association, 292,* 1539-1540.

Litz, B. T., Gray, M. J., Bryant, R. A., & Adler, A. B. (2002). Early intervention for trauma: Current status and future directions. *Clinical Psychology: Science and Practice, 9,* 112-134

MacDonald, C. M. (2003). Evaluation of stress debriefing interventions with military populations. *Military Medicine, 168,* 961-968.

Marks, I. M., Lovell, K., Noshirvana, H., Livanou, M., & Thrasher, S. (1998). Treatment of posttraumatic stress disorder by exposure and/or cognitive restructuring: A controlled study. *Archives of General Psychiatry, 55,* 317-325.

Mitchell, J. T. (1983). When disaster strikes…the critical incident stress debriefing. *Journal of Emergency Medical Service, 8,* 36-39.

Mitchell, J. T., & Everly, G. S., Jr. (1996). *Critical incident stress debriefing: An operational manual for the prevention of traumatic stress among emergency service and disaster workers* (2nd ed.). Ellicot City, MD; Chevron Publishing Corporation.

Mitchell, J. T., & Everly, G. S., Jr. (2000). Critical incident stress management and critical incident stress debriefings: Evolutions, effects, and outcomes. In B. Raphael & J. Wilson (Eds.), *Psychological debriefing; Theory, practice and evidence* (pp. 71-90). New York, NY: Cambridge University Press.

National Institute of Mental Health. (2002). *Mental health and mass violence: Evidence-based early psychological intervention for victims/survivors of mass violence. A workshop to reach consensus on best practices.* NIH Publication No. 02-5138, Washington, D.C.: U.S. Government Printing Office.

Ozer, E. J., Best, S. R., Lipsey, T. L., & Weiss, T. S. (2003). Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin, 129,* 52-73.

Resnick, H. S., Kilpatrick, D. G., Dansky, B. S., Saunders, B. E., & Best, C. (1993). Prevalence of civilian trauma and posttraumatic stress disorder in a representative national sample of women. *Journal of Consulting and Clinical Psychology, 61,* 984-991.

Rose S, Bisson J, & Wessely S. (2004). Psychological debriefing for preventing post traumatic stress disorder (PTSD) (Cochrane Review). In: *The Cochrane Library,* Issue 4, Chichester, UK: John Wiley & Sons, Ltd.

United States Air Force. (1999). *Air Force instruction 44-153; Critical incident stress management*, Bolling Air Force Base, Washington, D.C., HQ USAF/AFMOA.

Unites States Army. (1994). *Army Field Manual 8-51; Combat stress control in a theater of operations*, Headquarters, Department of the Army, Washington, D.C.

U.S. casualty status. (2004). Washington D.C., Department of Defense. Retrieved January 9, 2005 from Department of Defense Web site: http://www.defenselink.mil/news/casualty.pdf.

VA/DoD post-traumatic stress disorder practice guideline. (2004). Retrieved January 9, 2005 from DoD/VA Web site: http://www.oqp.med.va.gov/cpg/PTSD/PTSD_Base.htm.

Van Emmerik, A. A. P., Kamphius, J. H., Hulsbosch, A. M., Emmelkamp, P. M. G. (2002). Single-session debriefing after psychological trauma: A meta-analysis. *Lancet, 360,* 766-771.

Weathers F, Huska J, & Keane T. (1991). *The PTSD Checklist Military Version (PCL-M).* Boston, Mass: National Center for PTSD.

Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993, October). *The PTSD Checklist (PCL): Reliability, validity, and diagnostic utility*. Paper presented at the 9th annual meeting of the International Society for Traumatic Stress Studies, San Antonio, TX.

Weiss, D. S., Marmar, C. R, Schlenger, W. E., Fairbank, J. A., Jordan, B. K., Hough, R. L., & Kulka, R. A. (1992). The prevalence of lifetime and partial post-traumatic stress disorder in Vietnam theater veterans. *Journal of Traumatic Stress, 5,* 365-376.

Pragmatic Case Studies in Psychotherapy, http://pcsp.libraries.rutgers.edu
Volume 1, Module 2, Article 1, pp. 1-25, 07-27-2005 [copyright by authors]

Table 1. PTSD Checklist – Military Version (PCL-M)*

Date: _____

PTSD Checklist – Military Version (PCL-M)

Instructions: Below is a list of problems and complaints that veterans sometimes have in response to stressful military experiences. Please read each one carefully, put an "X" in the box to indicate how much you have been bothered by that problem in *the last month.*

No.	Response:	Not at all (1)	A little bit (2)	Moderately (3)	Quite a bit (4)	Extremely (5)
1.	Repeated, disturbing *memories*, *thoughts*, or *images* of a stressful military experience?					
2.	Repeated, disturbing *dreams* of a stressful military experience?					
3.	Suddenly *acting* or *feeling* as if a stressful military experience *were happening again* (as if you were reliving it)?					
4.	Feeling *very upset* when *something reminded* you of a stressful military experience?					
5.	Having *physical reactions* (e.g., heart pounding, trouble breathing, or sweating) when *something reminded* you of a stressful military experience?					
6.	Avoid *thinking about* or *talking about* a stressful military experience or avoid *having feelings* related to it?					
7.	Avoid *activities* or *situations* because *they remind you* of a stressful military experience?					
8.	Trouble *remembering important parts* of a stressful military experience?					
9.	Loss of *interest in things that you used to enjoy*?					
10.	Feeling *distant* or *cut off* from other people?					
11.	Feeling *emotionally numb* or being unable to have loving feelings for those close to you?					
12.	Feeling as if your *future* will somehow be *cut short*?					
13.	Trouble *falling* or *staying asleep*?					
14.	Feeling *irritable* or having *angry outbursts*?					
15.	Having *difficulty concentrating*?					
16.	Being "*super alert*" or watchful on guard?					
17.	Feeling *jumpy* or easily startled?					

Weathers, F.W., Huska, J.A., Keane, T.M. *PCL-M for DSM-IV.* Boston: National Center for PTSD – Behavioral Science Division, 1991.
This is a Government document in the public domain

Score: _____

Figure 1. Changes in PCL-M Scores by Therapy Session