National Center for PTSD
POSTTRAUMATIC STRESS DISORDER

FISCAL YEAR 2019 ANNUAL REPORT

PSYCHOTHERAPY FOR PTSD




This page intentionally left blank.

Table of Contents

▶ A version of the National Center for PTSD Fiscal Year 2019 Annual Report with all appendices, as well as each individual appendix, is available as a pdf document at https://www.ptsd.va.gov/about/work/docs/annual_reports/2019/NCPTSD_2019_Annual_Report.pdf.

Acronyms List

Army STARRS
Army Study to Assess Risk and Resilience in Servicemembers

CAP
Consortium to Alleviate PTSD

CAPS
Clinician-Administered PTSD Scale

CAPS-5
Clinician-Administered PTSD Scale for *DSM-5*

COPE
Concurrent Treatment of PTSD and Substance Use Disorders Using Prolonged Exposure

CPT
Cognitive Processing Therapy

CSP
Cooperative Studies Program

DOD
Department of Defense

DSM-5
Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition

EEG
Electroencephalography

ENIGMA
Enhancing Neuroimaging Genetics through Meta-Analysis

fMRI
Functional Magnetic Resonance Imaging

GWAS
Genome-Wide Association Study

IPV
Intimate Partner Violence

JIF
Joint Incentive Fund

LIGHT
Longitudinal Investigation of Gender, Health, and Trauma

mGluR5
Metabotropic Glutamate Receptor Type 5

MBC
Measurement-Based Care

MDD
Major Depressive Disorder

MEG
Magnetoencephalography

MVP
Million Veteran Program

MST
Military Sexual Trauma

NEPEC
Northeast Program Evaluation Center

OMHSP
Office of Mental Health and Suicide Prevention

OPM
Office of Personnel Management

Acronyms List

PBI Network
Practice-Based Implementation Network

PC-PTSD-5
Primary Care Screen for PTSD for *DSM-5*

PCL-5
PTSD Checklist for *DSM-5*

PCT
Present-Centered Therapy

PE
Prolonged Exposure

PET
Positron-Emission Tomography

PGC
Psychiatric Genomics Consortium

PILOTS
Published International Literature on Traumatic Stress

PTSD
Posttraumatic Stress Disorder

SPR
Skills for Psychological Recovery

STAIR
Skills Training in Affective and Interpersonal Regulation

STRONG STAR
South Texas Research Organizational Network Guiding Studies on Trauma and Resilience

TACTICS
Targeted Assessment and Context-Tailored Implementation of Change Strategies

TMS
Transcranial Magnetic Stimulation

TRACTS
Translational Research Center for Traumatic Brain Injury and Stress Disorders

TRAIN
TrainingFinder Real-time Affiliate Integrated Network

TrIGR
Trauma-Informed Guilt Reduction

VA
Department of Veterans Affairs

VAMC
VA Medical Center

VHA
Veterans Health Administration

VISN
Veterans Integrated Service Network

webSTAIR
Web-Based Skills Training in Affective and Interpersonal Regulation

WET
Written Exposure Therapy

WoVeN
Women Veterans Network

From the Executive Director

August 2019 marked the 30th anniversary of the National Center for PTSD. The Center was founded in 1989 under the direction of Dr. Matthew Friedman, who served as Executive Director for 25 years and is currently Senior Advisor and head of VA's National PTSD Brain Bank. During the 30 years of our existence, our talented and devoted staff have worked to improve the health and well-being of Veterans through research and educational initiatives, and through consultation with clinicians, educators, and policymakers throughout the United States and around the world. We are very proud of this work and the impact we have been able to have on our nation's Veterans and others who are dealing with traumatic stress.

Another founding member, Dr. Steven Southwick, served as Deputy Director of the Clinical Neurosciences Division from 1989 until earlier this year, when he retired. To honor his legacy, Connecticut Senator Richard Blumenthal read a tribute to Dr. Southwick into the Congressional Record. As stated by Dr. John Krystal, Director of Clinical Neurosciences Division, "We wouldn't have been the same Center without Steve. While pursuing neuroscience aims, he brought a distinctive humanism to the work that made us better."

A key area of focus since our inception has been research on treatments for PTSD. Over our history, we and our collaborators have conducted groundbreaking research showing the effectiveness of psychotherapeutic interventions for PTSD. Now we are expanding our efforts to improve the effectiveness of these interventions and help providers implement them. The introductory section of this Annual Report summarizes our recent and ongoing research, aimed at improving the effectiveness, efficiency, and access to these valuable treatments.

In education and outreach, our efforts continue to benefit Veterans and the community at large. We added features to AboutFace, our online gallery of videos featuring Veterans, family members, and clinicians talking about PTSD and the value of treatment. We trained community providers in Prolonged Exposure. We developed two important new apps: Couples Coach and Beyond MST. We also redesigned our award-winning website — www.ptsd.va.gov — to make it easier for users to find the content they need.

PTSD was a new diagnosis when the National Center opened its doors in 1989. It had just been formalized as a distinct psychological disorder — separate from other mental health disorders — in 1980. Since then, the field has made incredible progress in understanding PTSD and how to treat it. I am proud that we have contributed to that progress during the past 30 years, and I look forward to continuing our efforts to help those who are affected by traumatic events.

Paula P. Schnurr, PhD
Executive Director

Paula P. Schnurr, PhD

PSYCHOTHERAPY FOR PTSD:

Enhancing Effectiveness, Efficiency, and Access

The National Center for PTSD was founded in 1989, just a few short years after PTSD was recognized as a distinct psychological disorder that can develop after exposure to a traumatic event. At the time, PTSD was generally considered to be a chronic condition, and treatments centered on teaching coping strategies to help a person deal with the symptoms — flashbacks, difficulty sleeping, problems managing anger — rather than getting to the root of the symptoms by helping the person process the traumatic event itself.

Among the early initiatives undertaken by the National Center during the 1990s were studies aimed at generating evidence of the effectiveness of trauma-focused psychotherapies. It was common then, and now, to treat PTSD using a group format, engaging Veterans in processing their traumatic experiences. These groups did not typically use cognitive-behavioral techniques that had proven effective in other disorders, and to a limited extent in PTSD.

A landmark multi-site Department of Veterans Affairs (VA) study launched by Dr. Matthew

Matthew Friedman, MD, PhD, former Executive Director and current Senior Advisor; Paula P. Schnurr, PhD, Executive Director

Friedman and Dr. Paula Schnurr in 1995 compared the effectiveness of cognitive-behavioral trauma-focused group therapy with Present-Centered Group Therapy in Vietnam Veterans. Although the study of 360 Veterans in 60 therapy groups — still one of the largest psychotherapy studies in PTSD — found no difference between the two treatments, it set the stage for a more rigorous and large-scale investigation by the Center and others.

In 2001, Dr. Schnurr and Dr. Friedman undertook another multi-site trial. This time they compared Prolonged Exposure (PE), in which patients acclimate to trauma-related memories and reminders through imaginal and real-word exposure, to Present-Centered Therapy (PCT), which focuses on current life problems that result from PTSD rather than focusing on the traumatic event directly. This was the first study of PTSD treatment for women Veterans and the first VA Cooperative Study to focus on women. PE was shown to be significantly more effective than PCT in reducing PTSD symptoms and leading to remission.

A smaller Center-led VA study added support for trauma-focused psychotherapies by showing that Cognitive Processing Therapy (CPT), which helps patients challenge and modify their beliefs about a traumatic event, was effective for the treatment of military-related PTSD. These, and later studies, showed definitively that trauma-focused psychotherapies work for treating PTSD.

Due in large part to this work by National Center investigators, VA published a handbook in 2008 that specified that PE or CPT must be available at all VA facilities. More recently, in 2017, National Center staff helped update the VA/Department of Defense (DOD) Clinical Practice Guideline for PTSD, which they had previously helped develop; for the first time, trauma-focused psychotherapies, including PE, CPT, and Eye Movement Desensitization and Reprocessing, were recommended over medications and non-trauma-focused interventions for PTSD.

More recently, in 2017, National Center staff helped update the VA/DOD Clinical Practice Guideline for PTSD, which they had previously helped develop; for the first time, trauma-focused psychotherapies, including PE, CPT, and Eye Movement Desensitization and Reprocessing, were recommended over medications and non-trauma-focused interventions for PTSD.

While these psychotherapies are highly effective, providers and patients have encountered challenges in delivering and participating in these protocols. Trauma-focused psychotherapies, like all treatments, do not work equally well for all patients. Some patients require longer courses of therapy than the typical 10-12 sessions, and some prefer shorter courses of therapy, so different treatment schedules might be more appropriate. Time and travel can be burdensome for some patients, particularly those who live at a distance from a clinical facility. Some Veterans have other mental health concerns that they may want to address in combination with, or instead of, PTSD. And some people simply prefer or respond better to one treatment or another. Today, researchers throughout the Center are focusing on modifying the treatments and delivery mechanisms of CPT and PE to make them more effective, efficient, and accessible.

Modifying Treatments to Improve Effectiveness

Dr. Tara Galovski, Director of the Women's Health Sciences Division, has been studying **variable length dosing**, in which patient progress is used to determine the number of sessions for a treatment course. Some patients might have significant symptom reduction in just six or eight sessions, while others might require more than the traditional 12 sessions. According to Dr. Galovski, "We should never give the message that a person needs more therapy when they have truly met their therapeutic goals. At the same time, other patients might actually benefit from more sessions." This approach also allows the therapist to devote sessions to other issues that arise, including emergency situations, and then return to the main focus of trauma work.

Researchers in the Women's Health Sciences

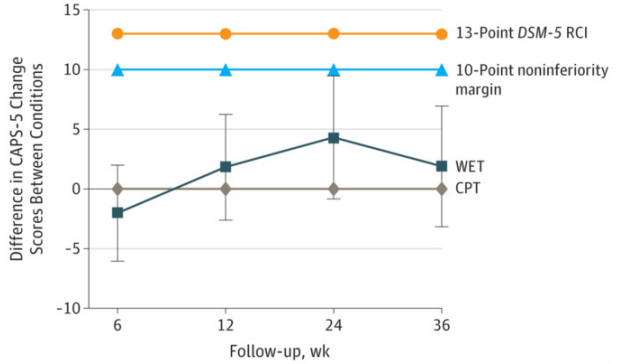
Tara Galovski, PhD, Director, Women's Health Sciences Division (second from left) and staff

Division have also been studying the effectiveness of **massed treatment**, or delivering treatment within a more compressed time frame than is typical of research studies or standard practice. Dr. Jennifer Wachen is currently conducting a study with active duty Servicemembers in which they receive 12 sessions of CPT in an intensive five-day period of time instead of the usual six weeks. Preliminary results from studies of other trauma-focused psychotherapies indicate that fitting all the sessions into one or two intensive weeks can be just as effective as the conventional weekly format, and may better serve the needs of people who find it difficult to complete a 12-week regimen.

"With PTSD, avoidance is inherent in the disorder — the last thing a person wants to talk about is the worst thing that ever happened to him or her. With a traditional once-a-week therapy schedule, patients may lose motivation between sessions and drop out prematurely," Dr. Galovski states. "But with massed treatment, a person commits to the five days, clears his or her schedule, and sees that the light at the end of the tunnel is within reach. From a clinical perspective, it is truly remarkable to watch recovery take place in just one week."

National Center investigators have also developed and evaluated new, shorter treatments that may be more amenable to some patient populations and settings. One exciting initiative is testing **Written Exposure Therapy** (WET), in which patients write about their traumatic event rather than describing it orally to a therapist, and then attend a short debriefing session. Dr. Denise Sloan of the National Center's Behavioral Science Division says the treatment is delivered in five sessions, with no between-session homework required, and has produced good outcomes. "The findings on dosing were surprising to us," she states. "And with the shorter timeframe, the drop-out rate is lower." WET has also been found to be non-inferior to CPT, and is now being tested in comparison to conventional PE.

Evidence suggests that PE and CPT are equally effective on average across a large group of patients, but it is possible that PE may work better for one patient, whereas CPT may work better for another. Unfortunately, evidence-based guidance for matching patients to treatments has been lacking. Dr. Schnurr's current research focuses on **comparative**



Evidence that 5-Session Written Exposure Therapy is as Effective as CPT

Noninferiority margins and 95% confidence intervals for Clinician-Administered PTSD Scale for *DSM-5* (CAPS-5) scores. The vertical axis represents differences between the CPT and WET conditions in CAPS-5 total score changes; negative values indicate greater improvement in the WET condition. RCI = reliable change index.

Sloan, D. M., Marx, B. P., Lee, D. J., & Resick, P. A. (2018). A brief exposure-based treatment vs cognitive processing therapy for posttraumatic stress disorder: A randomized noninferiority clinical trial. *JAMA Psychiatry*, 75, 233-239. doi:10.1001/jamapsychiatry.2017.4249

Erika Wolf, PhD, and Denise Sloan, PhD, Investigators, Behavioral Science Division

effectiveness, or determining which treatments work best for which patients. She and her colleagues recently completed data collection for the largest-ever study comparing PE and CPT. "Depending on a person's situation, one treatment might be better than the other." She noted, "We need huge samples to be able to create more refined classifications, and this is the trajectory of our current work." The team enrolled over 900 Veterans across 17 VA facilities across the country, and they plan to publish the findings in 2020.

Addressing Problems that Co-Exist with PTSD

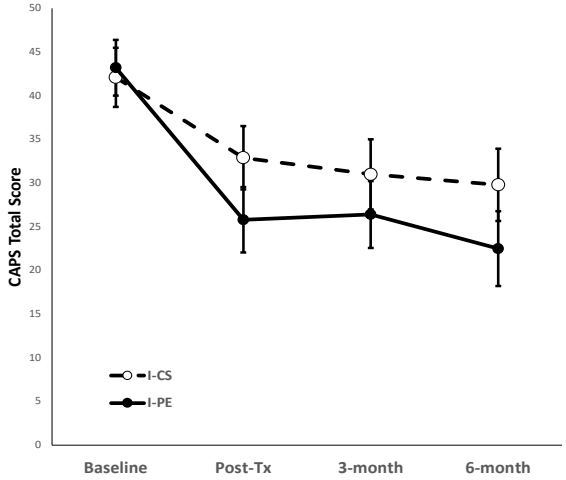
Many patients are affected by more than just PTSD. In addition to PTSD symptoms, many patients have trouble with drugs or alcohol, feelings of guilt and shame, suicidal thoughts and actions, or interpersonal problems with friends and family. Researchers at the Center are seeking to better understand how these various problems interact, and how to combine treatments for different issues rather than attempt to treat each one separately.

Dr. Sonya Norman, who is part of the National Center's Executive Division, directs the PTSD Consultation Program and has expertise in the treatment of PTSD and comorbid substance use problems. She has been testing a treatment called **COPE** (Concurrent Treatment of PTSD and Substance Use Disorders Using PE), which combines PE and relapse prevention treatment and is aimed at treating comorbid PTSD and alcohol use disorder. Results from this study were published in FY 2019.

Sonya Norman, PhD, Director, PTSD Consultation Program, Executive Division

According to Dr. Norman, "There is a common misconception that people with comorbidities are too fragile for PE — that they will relapse, or their symptoms will get worse. But we have done multiple studies and we have never found that to be the case. People actually reduce their alcohol use, and their PTSD symptoms improve." Dr. Norman and her colleagues showed that COPE was superior to another integrated treatment, Seeking Safety, for reducing PTSD symptoms. Alcohol use improved in both treatments, with no difference between them.

Dr. Norman has also led the development of an intervention called **Trauma-Informed Guilt Reduction**, or TrIGR. It is a four-module treatment that focuses on guilt and shame, which are frequently experienced in connection with a traumatic event. "Guilt and shame are related to more severe forms of PTSD, and they contribute to the severity of depression, substance use disorders, and a whole host of problems," she says. TrIGR involves working with patients to see their part in the traumatic event in the most accurate way and reduce feelings of guilt and shame. The protocol also includes a second phase, in which the therapist helps the patient set long-term goals and identify meaningful activities. Dr. Norman is completing a study in which she is testing TrIGR for reducing guilt among Veterans who served in Iraq and Afghanistan.



Evidence for integrated treatment for PTSD and alcohol use disorder: COPE (I-PE) vs. Seeking Safety (I-CS)
PTSD symptom severity estimated means by treatment condition at each time point. Error bars indicate 95% confidence intervals. CAPS-5 indicates Clinician Administered PTSD Scale for *DSM-5*. I-CS indicates integrated coping skills; I-PE, integrated prolonged exposure.

Norman, S. B., Trim, R., Haller, M., Davis, B. C., Myers, U. S., Colvonen, P. J., ... & Norman, G. J. (2019). Efficacy of integrated exposure therapy vs integrated coping skills therapy for comorbid posttraumatic stress disorder and alcohol use disorder: A randomized clinical trial. *JAMA Psychiatry*, 76, 791-799. doi:10.1001/jamapsychiatry.2019.0638

The relationship between **PTSD and suicide** has been the subject of research by many Center investigators. (This topic was discussed at length in the FY 2018 Annual Report.) Research by Dr. Brian Shiner at the Executive Division and others has shown that patients who are hospitalized due

to suicidal thoughts and behaviors are especially vulnerable to suicide in the days immediately following discharge from the hospital. National Center investigators are looking at reducing the risk for suicide among patients with PTSD, with both PE and CPT previously shown to reduce suicidal ideation. Dr. Brian Marx, Deputy Director at the Behavioral Science Division, recently began testing the effectiveness of WET for reducing the risk of suicide among Servicemembers after discharge from inpatient hospitalization. WET is well-suited for this purpose, as it can be completed within the five to seven day timeframe of the usual inpatient stay.

Marylène Cloitre, PhD, Associate Director for Research, Dissemination and Training Division

Other issues that often co-occur with PTSD are emotion dysregulation and interpersonal problems. Dr. Marylène Cloitre of the National Center's Dissemination and Training Division developed a treatment called **STAIR (Skills Training in Affective and Interpersonal Regulation)** to address these issues among people with PTSD. STAIR is a present-centered, skills-based therapy that targets a patient's current emotional and interpersonal situation and symptoms and helps them develop coping strategies.

STAIR was initially developed to be delivered in conjunction with trauma-focused exposure therapy. Used in this way, it can be a way to build a person's confidence and skills, making it easier for them to then fully participate in their psychotherapy. Dr. Cloitre suggests that it can also be introduced after completing trauma-focused therapy if the person needs help improving their interpersonal functioning, although it has not yet been tested in this way. An open question is whether STAIR alone can help improve PTSD symptoms, even without the addition of trauma-focused therapy. Results of a recent open trial suggest that it does, and research in this area is continuing.

Enhancing Psychotherapies with Novel Medications

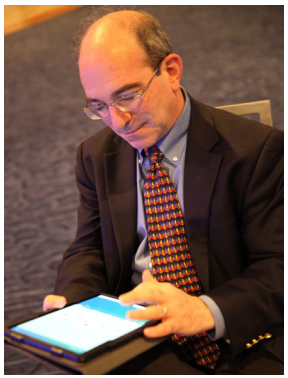
Certain medications target the processes that underlie the effectiveness of psychotherapies or address comorbidities that interfere with the effectiveness of psychotherapy. Researchers at the National Center are investigating which medications can be combined with psychotherapies — particularly PE — to enhance their effectiveness. This research is based on the understanding of how fear is learned, remembered, and "unlearned," which are the foundational aspects of how PTSD develops and how people can recover from it.

Dr. Norman is currently investigating **topiramate**, a medication typically used for epilepsy, in conjunction with PE. Topiramate has been shown to be effective in treating alcohol use disorders, but it has potential for treating PTSD as well, so the idea of combining the therapy and the medication seemed logical. According to Dr. Norman, "Topiramate might help with the patient's symptoms initially by helping to reduce their cravings, which might help them get through the first difficult weeks of psychotherapy and therefore have less likelihood of dropping out of treatment."

Dr. Mallory Loflin, who is affiliated with the Executive Division, is working with **cannabidiol** in combination with PE. Cannabidiol is an active component of cannabis that might hold therapeutic potential and does not produce intoxication or lead to dependence. Based on research in animals, cannabidiol is hypothesized to improve the "unlearning" of fear that occurs in PE, making it a good candidate for improving outcomes of that treatment. Dr. Loflin's study of PE enhanced with cannabidiol, the first cannabinoid study in VA, is currently underway.

Investigators at the Clinical Neurosciences Division have a long history of research with **ketamine**, a substance that has rapid-acting effects on depression and suicidality. The effects can be seen in as little as a few hours, in contrast to currently available antidepressant medications that can require weeks or even months to provide clinical benefit. One of ketamine's effects is to make the brain more open to new learning, including learning of safety — which is the key to PE's effectiveness. Dr. Ilan Harpaz-Rotem is currently conducting a study that combines PE therapy with ketamine to determine the potential benefits to patients with PTSD.

Expanding Access to Treatment



Craig Rosen, PhD, Acting Director, Dissemination and Training Division

Dr. Craig Rosen, Acting Director of the Dissemination & Training Division, is involved in the National Center's research on implementation science, which is the examination of the systems and structures that can serve as facilitators or barriers to the implementation of evidence-based treatments in actual clinical settings. "Other people in the National Center are looking at how to build better treatments," he says. "I'm trying to get them used. We have only so much professional mental health staff time. How do we get the most out of that?"

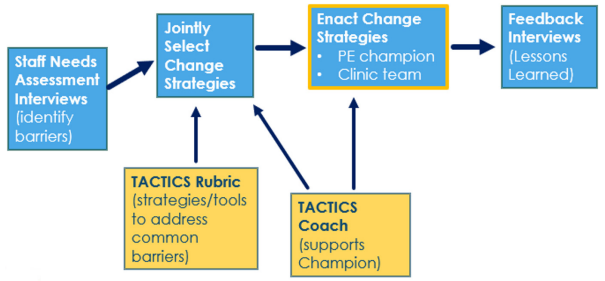
Barriers are many and varied, involving everything from limited staff time and lack of support from clinic leadership to scheduling systems that do not work well for managing regular therapy appointments. The Center has two field-based programs to improve the rate of implementation of evidence-based therapies. The **PTSD Mentoring Program**, established in 2008, promotes best practices in the clinical and administrative components of specialty care, including advancements in suicide risk assessment and prevention, through an extensive network of PTSD program directors.

The **PTSD Consultation Program**, established in 2011, provides information, resources, and consultations on PTSD assessment and treatment to health professionals both within and outside VA who are treating Veterans with PTSD.

Dr. Rosen, Dr. Carmen McLean, and researchers from several universities and the DOD are testing an implementation strategy entitled Targeted Assessment and Context-Tailored Implementation of Change Strategies, or **TACTICS**, to increase the use of PE in active duty military settings. They are working with eight medical facilities in three branches of the service. They have found that while there are many similarities to VA, the challenges to implementing high-quality care in DOD are also quite different and will likely require different solutions.

> "Other people in the National Center are looking at how to build better treatments. I'm trying to get them used. We have only so much professional mental health staff time. How do we get the most out of that?"
>
> **Craig Rosen, PhD**
> *Acting Director of the Dissemination & Training Division*

For example, military clinics often have leaner staffing than many VA clinics. Personnel in military clinics can rotate in and out after relatively short periods of time, requiring continual retraining of new providers and posing challenges in sustaining changes in practices over time. After identifying local barriers to implementation, the TACTICS team will help facilities develop and implement potential solutions that suit their specific needs.



Expanding implementation of PE in military settings using TACTICS
The four upper, blue boxes denote the intervention process in the Targeted Assessment and Context-Tailored Implementation of Change Strategies (TACTICS) study. The two lower, yellow boxes signify the role of the external facilitator, including context-tailored rubric that will be used to guide facilitation.

New technologies also offer possibilities for reducing barriers to treatment. Dr. Cloitre is currently delivering **STAIR via tele-mental-health** to women Veterans who have experienced military sexual trauma. "This population often finds that the atmosphere in VA clinics makes them uncomfortable. There is significant value in delivering treatment to these women in their homes." Telehealth approaches and mobile apps are also useful for increasing access to treatment among patients who live in rural areas far from a VA clinic.

Dr. Cloitre has also been involved in research on the web-based version of STAIR, or **webSTAIR**.

Achievement dashboard from webSTAIR, the web-based version of STAIR

"We know that web-based programs have a very high drop-out rate — most people don't get past session number two unless they have some kind of assistance." She is testing an approach in which therapists facilitate the patients' use of webSTAIR to help them through the process and keep them on track.

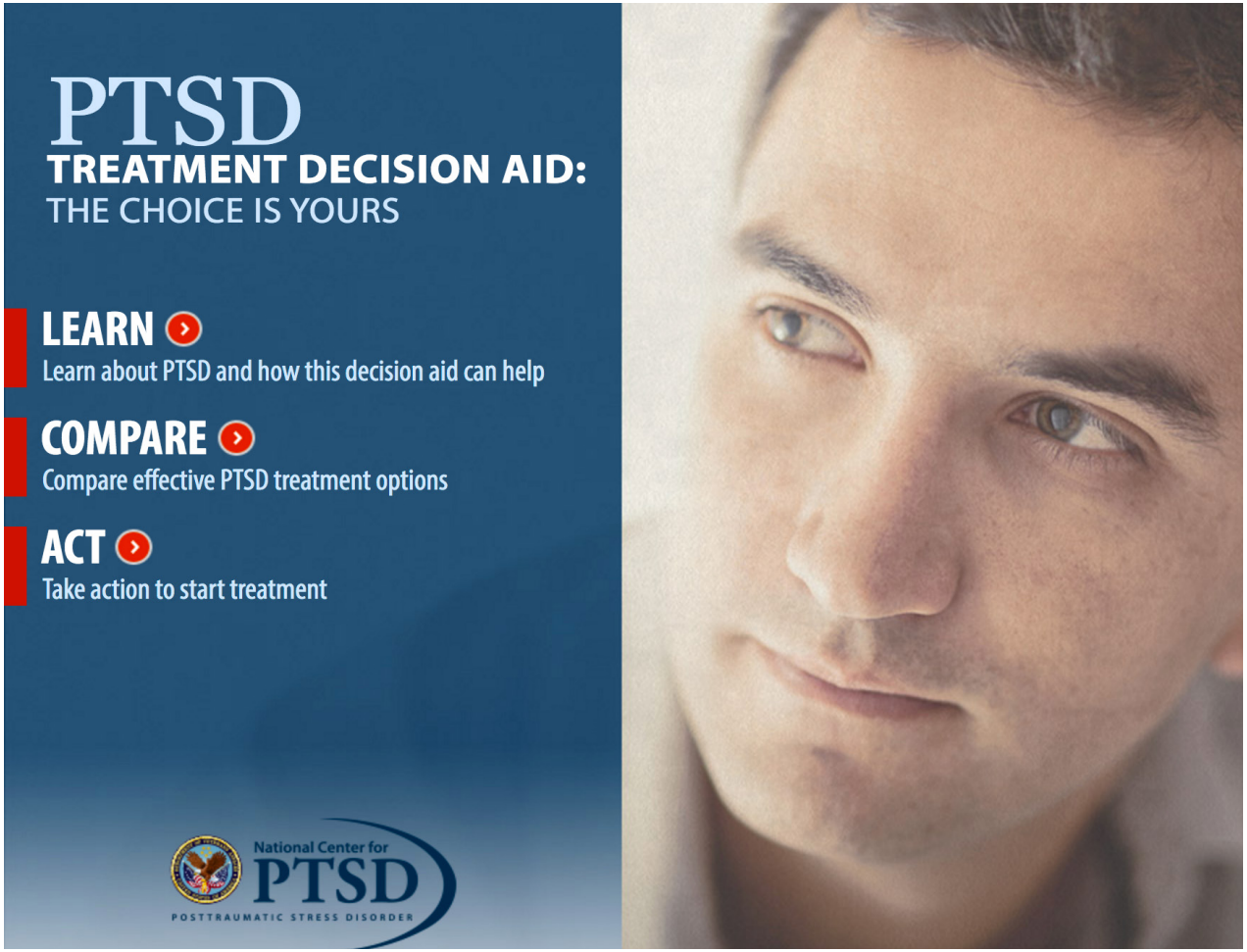
Some patients with PTSD prefer to receive mental health care within primary care rather than in a specialty mental health clinic, but conventional CPT and PE are not well-suited to this setting. Studies are underway to examine the use of WET in primary care settings. Dr. Sloan notes, "Because of the brevity of the treatment, we think it could be very useful in **primary care settings**." Dr. Sheila Rauch, a National Center collaborator, is piloting a shortened version of PE for use by primary care practitioners. Dr. Cloitre has also been developing a five-session version of STAIR for use in primary care, and initial results are positive.

For the Future: Options and Choices

Future research will continue to focus on understanding the most effective ways to tailor the proven psychotherapies to the particular circumstances of individual patients and clinical settings. Dr. Schnurr is enthusiastic about the possibility for more effective treatment matching. "Psychosocial markers might be as important as biomarkers in identifying the most effective treatment for a particular person," she says. "For instance, what treatments are best if the person has a personality disorder, anger issues, lower intelligence, or dissociative disorders?" The best treatment, or combination of treatments, will likely vary by individual.

Dr. Galovski concurs. "Manualized therapy provides a structure, and we certainly can't leave our clinical wisdom at the door. But my goal is to empirically develop the manuals in a way that can accommodate more diverse clinical situations. Therapists might be asking why a therapy that works so well for so many people isn't working for his or her particular patient. We need to understand when it is okay to diverge from the standard protocol to accommodate different clinical presentations."

As the number of treatment options multiplies, shared decision-making becomes an important part of the therapeutic approach. Patients and providers can use resources like the Center's **PTSD Treatment Decision Aid** to choose an approach that works best for a particular patient's values and preferences. According to Dr. Cloitre, "Longer term, we need to be more patient-centered and patient-driven in our treatment. We need to work with patients to match interventions to their presenting needs and to sequence



Decision Aid
The PTSD Decision Aid is an online tool that helps patients learn about and compare effective treatments for PTSD.

those interventions, based on a collaborative evaluation."

For example, some patients might prefer PE, where they repeat an intense recollection of an experience, while others might prefer the CPT approach, which focuses on examining the way the trauma affected a person's beliefs about themselves, other people, and the world. Some may be more willing to complete a treatment regimen if it is delivered in a compressed timeframe. Others might be unable to travel to a VA clinic and therefore will prefer to receive treatment through telehealth, a mobile app, or their primary care provider. According to Dr. Schnurr, "Full shared decision-making allows the patient to participate more actively in the process, and leads to better engagement with treatment, less dropout, more positive outcomes, and higher satisfaction."

Dr. Schnurr sums up the hopes for the future. "We're not likely to find a single silver bullet that 'cures' PTSD for everyone, so we need to find all the pieces that collectively maximize the benefits for the most people."

ADVANCING KNOWLEDGE ABOUT PTSD:

Major Research Initiatives in Fiscal Year 2019

For 30 years, the National Center for PTSD has been on the cutting edge of research aimed at understanding and treating PTSD. During FY 2019, researchers at the National Center participated in 133 funded studies, many in collaboration with partner organizations in the government, academic institutions, and agencies outside the United States. They published 307 peer-reviewed journal articles, book chapters, and books, and prepared an additional 110 in-press and advance online publications. A comprehensive list of funded and published work can be found in Appendices C, D, and E.

Center investigators continue to support innovative clinical trials and biological studies through the **Consortium to Alleviate PTSD** (CAP), a seven-year, $42 million award to fund research in PTSD diagnosis, prevention, and treatment for Servicemembers and Veterans. The consortium is led by the National Center and the STRONG STAR (South Texas Research Organizational Network Guiding Studies on Trauma and Resilience) network at the University of Texas Health Science Center at San Antonio. CAP has finished its sixth year, and eight of nine funded studies have completed recruitment.

Several projects under the Cooperative Studies Program (CSP) also take advantage of the

Operational priorities that guide National Center for PTSD initiatives

Center's broad reach and robust partnerships. A multi-site CSP study to examine three commonly prescribed medications for PTSD-related insomnia (trazodone, eszopiclone, and gabapentin) will launch in early FY 2020. CSP #591, a comparative effectiveness study of more than 900 Veterans engaged in PE and CPT at 17 VA facilities across the country, was completed in FY 2019; results are expected by the second quarter of FY 2020.

The size and scope of the National Center makes it well-positioned to undertake major studies with large samples and long timeframes. In one study, Center researchers are examining the influence of community violence on the longitudinal course of PTSD and health outcomes, including reproductive health in women Veterans, via the Longitudinal Investigation of Gender, Health, and Trauma (LIGHT) study. This study, which launched in FY 2018, includes data from over 3,500 Veterans, about half of whom are women. The investigators have collected data at an initial time point and are in the process of completing a second wave of assessments.

Research activities in the National Center's seven Divisions are driven by six **operational priorities**. The first five were established in 2013: Biomarkers, Treatment, Care Delivery, Implementation, and initiatives aimed at updating the Diagnostic and Statistical Manual of Mental Disorders–Fifth Edition (*DSM-5*). A sixth priority — PTSD and Suicide — was added in FY 2017. The following sections highlight some of the research initiatives undertaken during FY 2019 to address these six operational priorities. Appendix B contains descriptions of research projects that took place at each of the Center's seven Divisions.

Biomarkers

The National Center is dedicated to research aimed at identifying measurable biological factors that inform the diagnosis, assessment, prevention, and treatment of PTSD. Biomarker identification may lend insight into early detection of at-risk individuals and enable the development of personalized or new therapeutic approaches for PTSD. National Center researchers consistently make advances in the areas of genetics, neuroinflammation, neuroendocrinology, and brain imaging.

The LIGHT study, an examination of the influence of community violence on the longitudinal course of PTSD and health outcomes, includes data from over 3,500 Veterans, about half of whom are women. The investigators have collected data at an initial time point and are in the process of completing a second wave of assessments.

Biomarker work benefits from collaborations among Center investigators and several other organizations, including the Translational Research Center for Traumatic Brain Injury and Stress Disorders (TRACTS), the Psychiatric Genomics Consortium (PGC), the PTSD Working Group of the ENIGMA (Enhancing Neuroimaging Genetics through Meta-Analysis) Consortium, the **Million Veteran Program** (MVP), and the Army STARRS (Army Study to Assess Risk and Resilience in Servicemembers) consortium. VA's **National PTSD Brain Bank** has continued to expand under the direction of Dr. Matthew Friedman, Senior Advisor to the National Center. This is the only brain bank in the world devoted specifically to studying the biological bases of PTSD. It currently has an inventory of approximately 250 brains and has enrolled over 100 individuals who have agreed to donate their brains after death. PTSD Brain Bank data are currently being used to answer questions about the expression of specific genes in brain regions involved in PTSD, such as the amygdala, hippocampus, and prefrontal cortex. This work may help identify new treatment targets for PTSD.

The Consortium to Alleviate PTSD funds research in PTSD diagnosis, prevention, and treatment for Servicemembers and Veterans.

In the area of genetics, Center investigators are using genome-wide association studies (GWAS) to screen for genetic variations across large

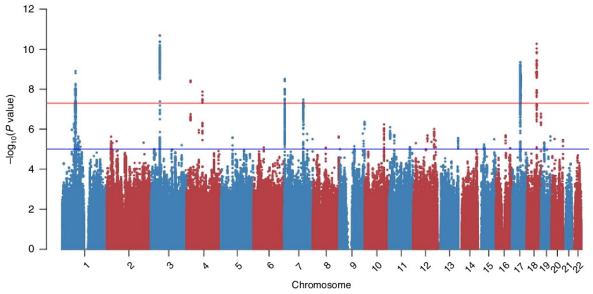
numbers of research participants. GWAS data from 165,000 U.S. military Veterans participating in **MVP** provided the first evidence of genetic vulnerability to reexperiencing traumatic events, which is one of the hallmark symptoms of PTSD.

In neuroendocrinology, recently published results reveal that deficient activity among enzymes converting progesterone to its anxiolytic metabolites is related to PTSD severity for both men and women. Interestingly, the process of conversion is different between men and women, suggesting that sex-specific treatments for correction of the deficiency may be needed.

The biomarkers portfolio also includes studies of treatment response. In a new study, researchers are testing whether a specific pattern of electrophysiological response to a series of loud tones is predictive of clinical responses to selective serotonin reuptake inhibitors, a commonly prescribed category of medications. Another project involves transcranial magnetic stimulation (TMS), a device-based intervention for depression that is being tested as a treatment for PTSD. Investigators are currently examining electroencephalography (EEG) and functional magnetic resonance imaging (fMRI) biomarkers of response to TMS among Veterans with treatment-resistant depression and PTSD.

In FY 2019 the Clinical Neurosciences Division contracted to acquire the first magnetoencephalography (MEG) unit within the VA health care system. MEG is a cutting-edge technology with greater sensitivity than EEG. It is capable of high-temporal resolution of electrical activity in deep brain structures and is an important investigative tool for next-generation PTSD research. Studies using the MEG will provide unique information of how different brain regions function in people with PTSD. These data will help guide novel treatment development, especially for medications and brain stimulation interventions, such as TMS.

Million Veteran Program (MVP)
The Million Veteran Program is a national research program to learn how genes, lifestyle, and military exposures affect health and illness.



Manhattan plot showing genetic variants associated with reexperiencing PTSD symptoms in European American Veterans (*N* = 146,660)
The y axis shows the negative logarithm of the association two-sided P value (from a linear regression model). The lower blue horizontal line indicates suggested statistical significance and the upper red horizontal line indicates rigorous statistical significance testing accounting for multiple comparisons (Bonferroni). Findings indicate that three genome-wide significance regions of chromosomes 3, 17, and 18 are associated with PTSD reexperiencing symptoms in European American Veterans. (Note: These findings were not replicated in a smaller cohort of African American Veterans (*N* = 19,983), data not shown.)

Gelernter, J., Sun, N., Polimanti, R., Pietrzak, R., Levey, D. F., Bryois, J., ... & Aslan, M. (2019). Genome-wide association study of post-traumatic stress disorder reexperiencing symptoms in > 165,000 US veterans. Nature Neuroscience, 22, 1394-1401. doi: 10.1038/s41593-019-0447-7

Treatment Engagement, Efficiency, and Effectiveness

Increasing engagement in evidence-based psychotherapies, delivering effective care more efficiently, and reducing dropout from PTSD treatments continue to be key goals of the National Center. A summary of work in this area during FY 2019 is highlighted in the introductory section of this Annual Report.

Care Delivery, Models of Care, and System Factors

A number of initiatives aimed at assessing models of care, improving evidence-based practices, and improving access to PTSD treatments across settings are taking place in the National Center.

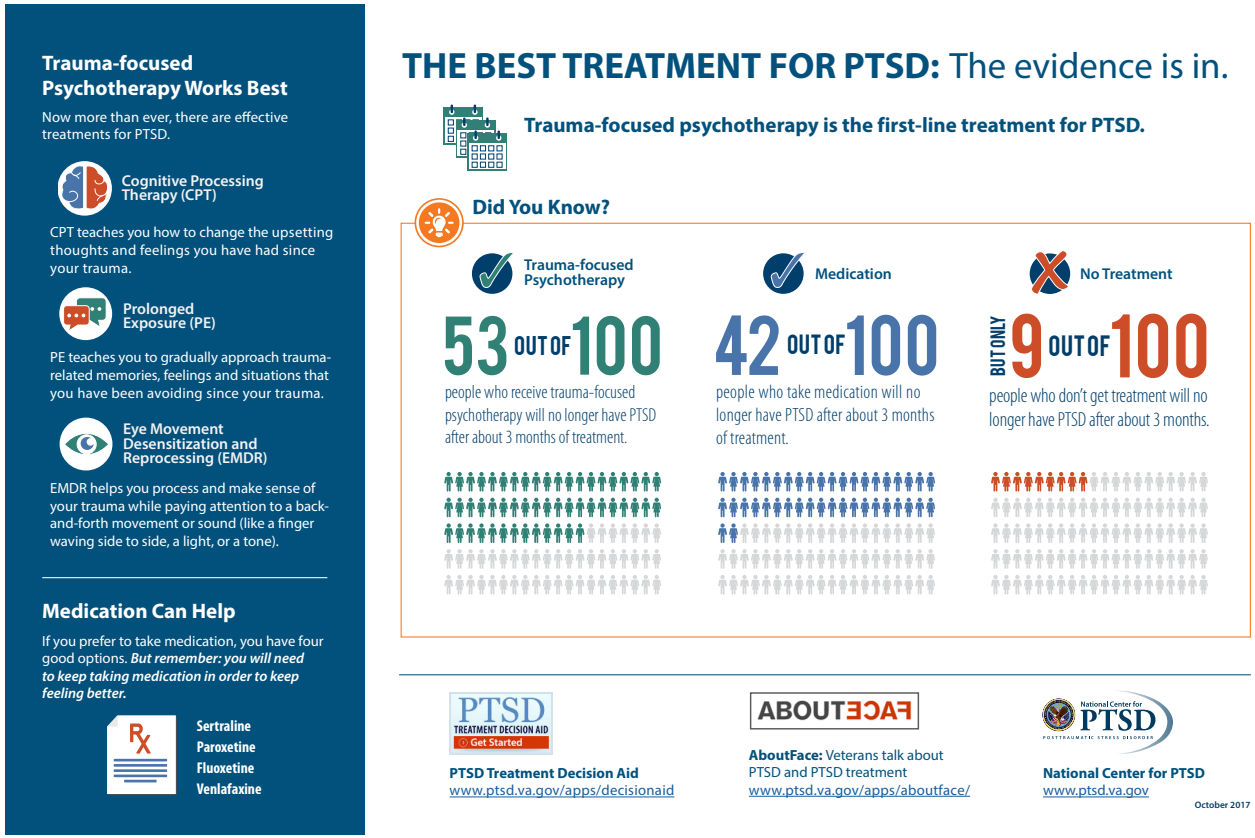
VA began screening all Veterans for military sexual trauma (MST) in 2002. During the past year, researchers published findings from a study of Veterans' experiences with and preferences for communication with Veterans Health Administration (VHA) providers about MST. Veterans reported generally high satisfaction with MST-related communication, although men, as a group, reported a much larger range of

satisfaction ratings than women.

National Center staff are supporting VA's efforts to implement measurement-based care (MBC). Investigators performed in-depth interviews with MBC project directors, frontline provider-Veteran pairs, and individual providers to better understand their experiences. In recently published findings, staff members reported overall satisfaction with MBC, noted the importance of training and staff buy-in when preparing to use the approach, and expressed the need for better technologies to streamline data collection and display for patients.

Researchers are exploring strategies to increase the use of evidence-based treatments using academic detailing and facilitation. In the National Center's academic detailing initiative, a pharmacist and psychologist reach out directly to VA clinicians at rural clinics and share recommended practices for PTSD. The facilitation program involves the use of an outside expert to work with site clinicians to identify factors that both help and hinder their ability to provide effective care. The expert shares solutions while developing a collaborative relationship and an environment that encourages transformation. Current efforts are primarily focused on sites where reach of evidence-based treatments is low.

A new initiative will identify providers who are planning to treat Veterans through the MISSION Act, which allows Veterans to access care in the community rather than only through VA. Center staff will work with providers to enhance their



The Best Treatment for PTSD infographic
Infographic developed by the National Center for PTSD that is being used to educate VA providers through the use of facilitation and the VA Academic Detailing initiative.

knowledge of VA/DOD PTSD Clinical Practice Guideline treatment recommendations and share current best practices regarding suicide risk assessments. Investigators also continue to examine delivery of care using technologies such as telehealth, web-based interventions, and mobile apps.

Implementation

Research in the area of implementation is aimed at ensuring that best practices are implemented throughout the health care system and testing strategies for improvement. In one key study undertaken in collaboration with the Minneapolis VAMC, researchers at the Dissemination and Training and the Executive Divisions are testing an implementation toolkit and facilitation to increase use of evidence-based practices in VA PTSD clinics. This work is being extended to DOD clinics in a multi-site trial involving collaborators

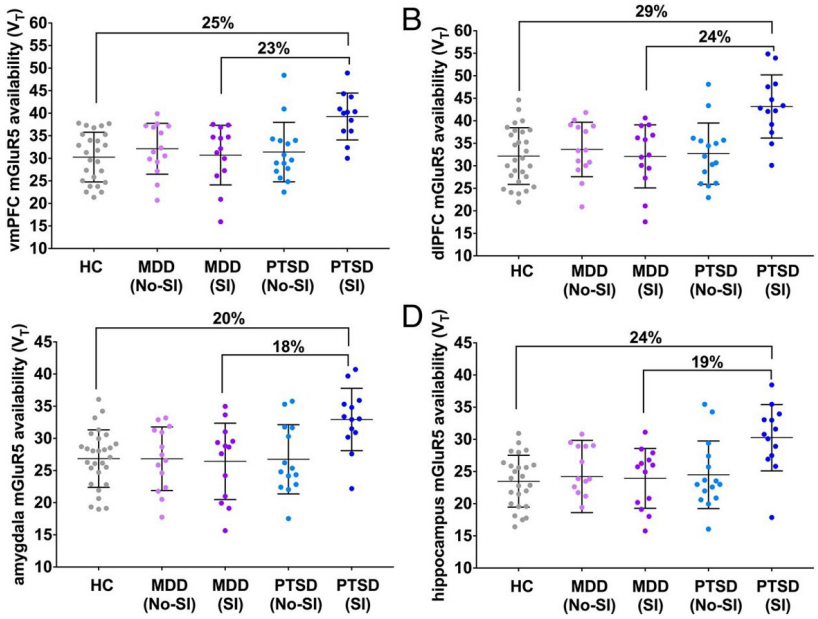
from five universities and eight military bases studying the use of PE; this project is discussed in the introductory section of this Annual Report.

Other implementation initiatives include efforts to identify and disseminate best practices for intimate partner violence (IPV) identification, assessment, and treatment while targeting health services within VHA. Researchers are involved in planning and evaluating a national rollout of IPV screening programs within primary care clinics. Investigators also recently began a multi-site effectiveness-implementation clinical trial of a brief counseling intervention for women who are experiencing violence in their intimate relationships.

DSM-5

The National Center continued its leadership in the development and validation of assessment instruments for the fifth edition of the American Psychiatric Association's *DSM-5*. *DSM-5* is a classification and diagnostic tool that outlines the diagnostic criteria for all currently recognized psychological disorders. The Clinician-Administered PTSD Scale (CAPS), the gold-standard diagnostic instrument for diagnosing PTSD, was developed at the Center more than 20 years ago and has been updated to reflect the new criteria in *DSM-5*. The National Center also updated other measures, including the PTSD Checklist (PCL-5) and the Primary Care Screen for PTSD (PC-PTSD-5).

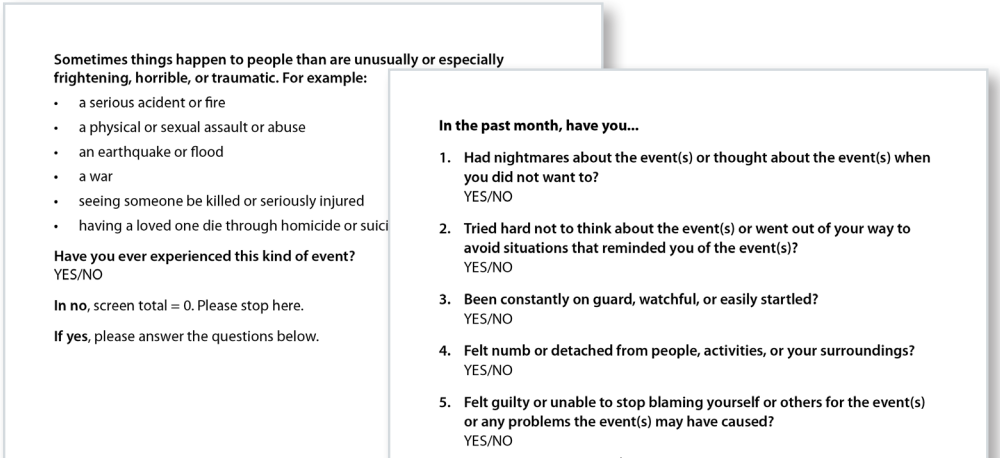
Because so much of this work has been completed, the Center is retiring *DSM-5* as an operational priority after this year, although efforts to continue validating these measures will continue. For example, in FY 2019, investigators completed data collection for a study validating a cutoff score for PTSD status based on **PC-PTSD-5, compared against the Clinician-Administered PTSD Scale for *DSM-5* (CAPS-5)**. Results are



Evidence for a biomarker of PTSD-related suicidal ideation: mGluR5

mGluR5 availability in key brain regions among individuals with PTSD (with and without SI), MDD (with and without SI), and matched healthy controls. (A) hippocampus; (B) amygdala; (C) dorsolateral prefrontal cortex; (D) ventromedial prefrontal cortex. Percentages indicate difference in availability between specific groups. Error bars represent SD.

Davis, M. T., Hillmer, A., Holmes, S. E., Pietrzak, R. H., DellaGioia, N., Nabulsi, N., ... & Esterlis, I. (2019). In vivo evidence for dysregulation of mGluR5 as a biomarker of suicidal ideation. *Proceedings of the National Academy of Sciences*, 116(23), 11490-11495. doi: 10.1073/pnas.1818871116



Sometimes things happen to people than are unusually or especially frightening, horrible, or traumatic. For example:

- a serious acident or fire
- a physical or sexual assault or abuse
- an earthquake or flood
- a war
- seeing someone be killed or seriously injured
- having a loved one die through homicide or suici

Have you ever experienced this kind of event?
YES/NO

In no, screen total = 0. Please stop here.

If yes, please answer the questions below.

In the past month, have you...

1. **Had nightmares about the event(s) or thought about the event(s) when you did not want to?**
   YES/NO
2. **Tried hard not to think about the event(s) or went out of your way to avoid situations that reminded you of the event(s)?**
   YES/NO
3. **Been constantly on guard, watchful, or easily startled?**
   YES/NO
4. **Felt numb or detached from people, activities, or your surroundings?**
   YES/NO
5. **Felt guilty or unable to stop blaming yourself or others for the event(s) or any problems the event(s) may have caused?**
   YES/NO

Primary Care Screen for PTSD for *DSM-5* (PC-PTSD-5)

Prins, A., Bovin, M. J., Kimerling, R., Kaloupek, D. G., Marx, B. P., Pless Kaiser, A., & Schnurr, P. P. (2015). The Primary Care PTSD Screen for DSM-5 (PC-PTSD-5). [Assessment instrument].

expected in FY 2020.

PTSD and Suicide

National Center work on PTSD and suicide covers a broad spectrum, from the identification of brain-based biomarkers of suicidality to the examination of system-level tools for improving suicide prevention among Veterans. A summary of work in this area was highlighted in the introductory section of last year's Annual Report.

In one exciting biomarkers study completed in FY 2019, researchers used positron-emission tomography (PET) imaging to identify glutamatergic metabotropic receptor (mGluR5) as a biomarker linked to PTSD-related suicidal ideation. An investigation of risk factors for suicide included a study using data from the National Health and Resilience in Veterans project, and revealed that Veterans with both PTSD and major depressive disorder (MDD) are significantly more likely to contemplate suicide and attempt suicide than Veterans with either PTSD or MDD alone.

Ongoing studies are testing interventions to prevent suicide among Veterans and Servicemembers who are at greater risk. One project is testing brief cognitive-behavioral therapy for suicide prevention in a sample of Veterans hospitalized for suicide risk. Another is using a version of WET with a sample of Army soldiers and Veterans with PTSD symptoms who have been hospitalized for suicide risk. Center staff are also expanding tools that clinic teams can use to optimize and allocate staff resources to suicide management, with the goal of helping teams ensure effective management of Veteran patients at high risk for suicide without compromising overall access to or quality of care.

Honors and Awards Received by National Center Staff in FY 2019

John H. Krystal, MD
Clinical Neurosciences Division
Colvin Award for Mood Disorders Research, Brain and Behavior Research Foundation

Edward H. Ahrens Distinguished Investigator Award, Association for Clinical and Translational Science

Mark W. Logue, PhD
Behavioral Science Division
2019 Spivack Excellence in Neuroscience Awards: Emerging Leader, Boston University School of Medicine

Carmen P. McLean, PhD
Dissemination and Training Division
Outstanding Service to Association for Behavioral & Cognitive Therapies

Karen S. Mitchell, PhD
Women's Health Sciences Division
Fellow, Academy for Eating Disorders

Kile M. Ortigo, PhD
Dissemination and Training Division
VA LGBT Health Care Leadership Award, LGBT Health Care Program, Office of Patient Care Services

Jillian C. Shipherd, PhD
Women's Health Sciences Division
Laura Brown Award for outstanding contributions in advancing lesbian, bisexual, and transgender women's psychology through research, teaching, practice, and/or activism, APA Division 35, Section 4

Dawne Vogt, PhD[1]
Brian N. Smith, PhD[1]
Annie B. Fox, PhD[1]
Timothy Amoroso, BS[1]
Emily Taverna, MS[1]
Paula P. Schnurr, PhD[2]
[1]***Women's Health Sciences Division***
[2]***Executive Division***
Military Family Research Institute Excellence in Research on Military and Veteran Families, Honorable Mention, Purdue University for "Consequences of PTSD for the work and family quality of life of female and male U.S. Afghanistan and Iraq War veterans" (doi:10.1007/s00127-016-1321-5)

TEAM AWARD
Principals:
Victoria Bippart, BA,
Cybele Merrick, MA, MS
Jessica Hamblen, PhD
Team Members:
Rebecca Matteo, PhD
Margaret Willoughby, BA
Executive Division
VHA Communications Award: Publications; First Place for Understanding PTSD Series

TEAM AWARD
Principals:
Margaret Willoughby, BA[2]
Jessica Hamblen, PhD[2]
Team Members:
Heather Balch, BA[2]
Victoria Bippart, BA[2]
Katherine Juhasz, MS[3]
Kevin Lai, MA[3]
Rebecca Matteo, PhD[2]
Carol Sevick, MS[2]
Jeremy Tevis, BFA[2]
[2]***Executive Division***
[3]***Dissemination and Training Division***
VHA Communications Award: Integrated Communications Plan; First Place for PTSD Treatment Works

TEAM AWARD
Jessica Hamblen, PhD
Rebecca Matteo, PhD
Cybele Merrick, MA, MS
Carol Sevick, MS
Jeremy Tevis, BFA
Margaret Willoughby, BA
Executive Division
VHA Communications Award: Website; Second Place for redesign of PTSD.va.gov website

Fellowships and Travel Awards

Lynnette Averill, PhD | ***Clinical Neurosciences Division***
Early Career Investigator Travel Award, National Institute of Aging Research Centers Collaborative Network

Teddy Akiki, MD | ***Clinical Neurosciences Division***
Kim Arditte-Hall, PhD | ***Women's Health Sciences Division***
Daniel Lee, PhD | ***Behavioral Science Division***
Alies Muskin Career Development Leadership Program, Anxiety and Depression Association of America

Christopher Averill, BS | ***Clinical Neurosciences Division***
Lynnette Averill, PhD | ***Clinical Neurosciences Division***
Travel Award, Veterans Integrated Service Networks (VISN) 1 Strategic Initiative for Suicide Prevention

PROMOTING PTSD EDUCATION:

Training, Dissemination, and Communication in Fiscal Year 2019

As the leading authority on psychological trauma and its consequences, the National Center seeks to serve all those whose lives are affected by trauma: Veterans and their loved ones; researchers and clinicians; frontline providers and clinic administrators; students; policymakers; and the media. These efforts bring to bear diverse methods and communication channels, from traditional print materials to the latest and most user-friendly technologies.

The Center pioneered the development of **mobile apps** and web-based tools to disseminate information about PTSD. For example, **VetChange**, an online self-help tool for Veterans and Servicemembers who are concerned about their drinking and PTSD symptoms, is one of the few websites within VA that permits users to save their data, allowing them to track their progress over time. Alternatively, for people who are uncomfortable with technology and just want something they can hold in their hands, the Center launched a service for providers and the public that allows them to **order print materials free of charge**.

One-on-one contact with PTSD specialists is another important way to bring information and expertise to those who need it. For instance, the PTSD Mentoring Program has developed and sustained a network of leadership and frontline providers. Working through regular teleconferences, direct contacts, and periodic meetings, the program brings together PTSD specialty program leadership with PTSD specialists, MST coordinators, and other frontline clinic staff.

Sometimes a combination of technological resources and personal contact works best. One key initiative is **WoVeN: The Women Veterans Network**, which does its work with female Veterans in a hybrid fashion by combining in-person events on both the local and national level with web-based resources.

The sections that follow highlight these and other initiatives throughout the Center that are aimed at bringing the latest and best knowledge about PTSD to Veterans and Servicemembers, the clinicians who serve them, and the general public.

PTSD Awareness

AboutFace is an online gallery of videos featuring Veterans, family members, and clinicians talking

In a new AboutFace "Up Close" story, Yvonne Grissett, an MST survivor, describes how PTSD treatment helped her reclaim her self-esteem and may have even saved her life.

The Understanding PTSD and Aging booklet will be available in FY2020.

about PTSD and the value of treatment. The site is designed to raise awareness of PTSD, reduce the stigma that is sometimes associated with mental health issues, and encourage Veterans to seek care. Through its use of multimedia storytelling, the site helps Veterans and family members engage with the stories of other Veterans, ranging from brief interviews that target a key issue —"What treatment was like for me," for example — to in-depth profiles. This year, a Veteran's **Up Close** story of treatment for PTSD stemming from MST serves as the inception of a new section featuring both male and female survivors of MST that will debut 2021.

The National Center expanded the Understanding PTSD series of booklets with *Understanding PTSD and Aging* to address the concerns of older Veterans and their families. As with other booklets in the series, *Understanding PTSD and Aging* includes quotes from AboutFace Veterans and is available in both English and Spanish.

Every June, the Center conducts a robust campaign during **PTSD Awareness Month** to increase the visibility of PTSD and evidence-based treatments. A mini-site on the larger website provides educational and promotional materials for organizations and individuals who want to participate in the campaign. This year's offering includes a calendar with suggested actions for every day of the month — from taking a course on PTSD treatment or learning about treatment options to sharing videos and subscribing to the **YouTube channel**.

Support for Providers in the Field

The **PTSD Consultation Program**, launched in 2011, is an important means of support for VA and community providers. Providers can simply phone or email the program, and a skilled consultant with research and clinical expertise will answer their questions, typically within 24 hours. In FY 2019, the program provided 2,180 consultations, a quarter of which were to community-based clinicians. The program also hosts a **popular monthly lecture series** that offers free continuing education credits to both VA and community providers.

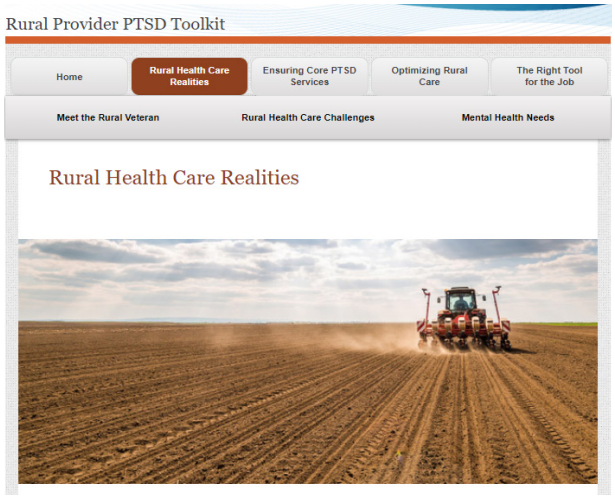
During FY 2019, the Consultation Program conducted free in-person trainings in PE for licensed community mental health providers who are treating Veterans in rural areas. The training included continuing education credits, training materials, and follow-up phone consultations. A total of 66 providers were trained in 2019.

The PTSD Mentoring Program, established in 2008, promotes best practices in the clinical and administrative components of specialty care. In FY 2019, the program held a face-to-face conference with mentors that focused on their

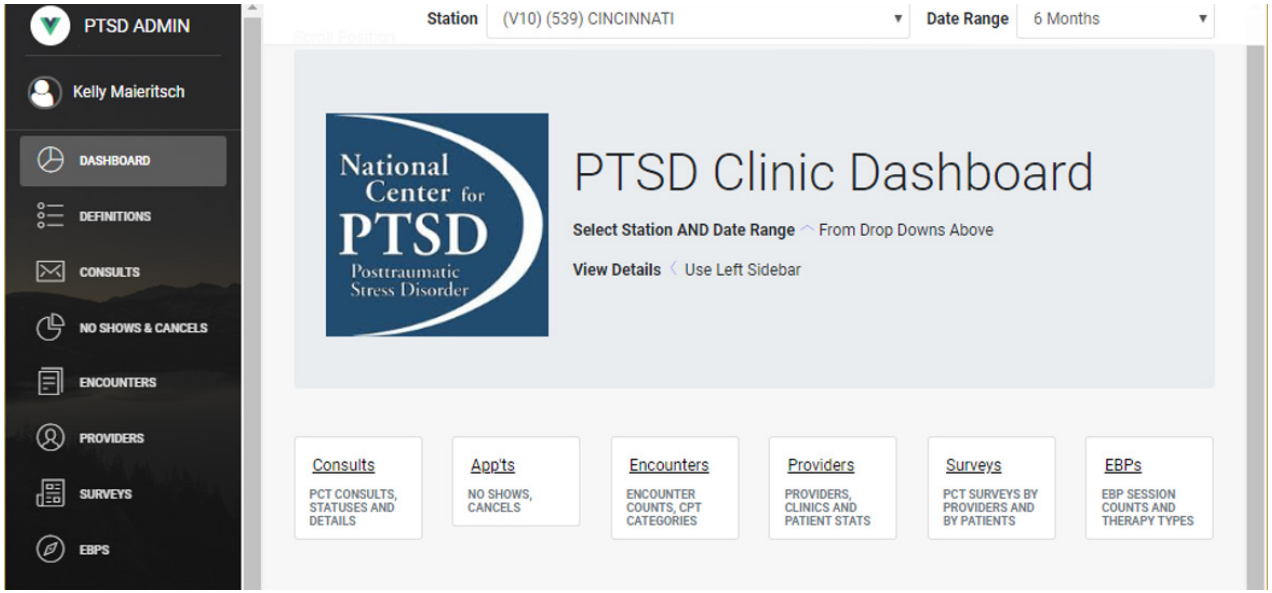
role in disseminating information to the field and collaborations with Veterans Integrated Service Networks (VISN) Chief Mental Health Officers. On the technology front, the program created an electronic dashboard that summarizes data tailored to the administrative needs of PTSD Mentoring participants. The dashboard was rolled out in August 2019 and enhancements are ongoing.

Center staff have been piloting a learning collaborative approach to training VA providers in WET, an evidence-based treatment for PTSD. Through the use of a "Plan-Do-Study-Act" problem-solving process, the learning collaborative model engages stakeholders across an organization in order to better foster the implementation of new practices. A total of 24 therapists have completed training and consultation, and the program leaders from their clinics have participated in the learning collaborative. Program evaluation data from 70 patients suggest that Veterans who receive WET from these trained providers experience clinically significant improvement. Retention rates were very high, with 79 percent of Veterans completing the full five-session treatment protocol.

The National Center's Executive Division continued its work — in conjunction with the Office of Rural Health — to improve the treatment of rural Veterans through academic detailing, facilitation, and education. This year, the program identified two locations for intervention: Roseburg, Oregon, and Muskogee, Oklahoma. Thanks to the targeted support provided to them, both locations increased their delivery of evidence-based treatments by at least 20 percent; made clinical and administrative changes to support the VA/DOD Clinical Practice Guideline on consistent care for PTSD; and decreased the prescribing of medications outside of the guidelines. The program also debuted its online **Rural Provider PTSD Toolkit**, which was designed to help rural PTSD providers address the unique challenges of providing care in a rural mental health care setting.



The Rural Provider PTSD Toolkit helps providers in rural settings to address the unique challenges they encounter in their settings.



The PTSD Mentoring Program developed the PTSD Clinic Dashboard that summarizes data tailored to the administrative needs of PTSD Mentoring participants.

The Practice-Based Implementation (PBI) Network has grown to over 1,000 VA interdisciplinary providers, researchers, and leaders. In FY 2019, the PBI Network continued to expand its technology focus through its monthly Tech Into

Care Community of Practice, which provides VA staff with a forum to learn about the latest mobile apps and online programs directly from their developers. The PBI Network lecture series, launched at the start of FY 2019, features materials on technology research and practices relevant to Veteran mental health care. The lecture series welcomes both VA staff and community providers and offers free continuing education credits to participants.

The expansion of the Tech Into Care Initiative was made possible by a two-year Joint Incentive Fund (JIF) grant to a project aimed at expanding the reach of mobile apps to improve coping and reduce suicide risk. In collaboration with partners from the Office of Mental Health and Suicide Prevention and DOD — plus VA's Office of Connected Care and Veterans Crisis Line — the JIF team is building a Veteran-focused suicide safety planning app module that will be integrated into existing apps. JIF facilitators will train staff at facilities in each VISN on the safety planning app module and how to integrate mobile mental health apps along the continuum of care.

The Community Provider Toolkit has undergone a redesign and evaluation with the help of human-centered design experts at The Lab at OPM, which is part of the Office of Personnel Management. Changes to the site are ongoing and should make this online resource more streamlined and user-friendly for providers in the community who care for Veterans.

The PTSD Clinician's Exchange, the National

The Center is developing two new apps: Couples Coach and Beyond MST.

Center's practitioner registry, has been combined with Project OUTFIT into a joint project called CORE Exchange. The project's website is the information hub for both entities and provides curated information on evidence-informed practices along with self-care content designed to help providers avoid burnout. CORE Exchange's sophisticated content management system allows the site to be easily modified to address specific practices that are of interest to members.

Self-Help and Treatment Companion Resources

The Center's Dissemination and Training Division continues to pursue innovations in mobile apps that have a global reach and human impact. As of FY 2019, the apps team has released a total of 16 apps that address issues as varied as parenting, self-help for PTSD symptoms, smoking cessation, and anger management.

During the past year, developers put the final touches on two new apps: Couples Coach and Beyond MST. Couples Coach is a self-help app designed to facilitate communication and problem-solving and to break down stigma around couples and family therapy. The app implements a training plan that progresses through five levels: observation and awareness of emotions and relationship patterns; increasing positive interactions between partners; increasing positive communication; working through conflict; and connecting with friends, family, and community. Beyond MST, developed in collaboration with the Women's Health Sciences Division, targets male and female survivors of MST and aims to promote more adaptive coping and, if appropriate, engagement in mental health care.

The Center continues its effort to enhance the web-based version of VetChange. Users of this site can track their progress toward abstinence or drinking reduction goals and manage PTSD symptoms that affect their drinking. In the near future, the site will also allow providers to create their own accounts, connect with Veterans via the website, and assign specific modules to Veterans in their care. This effort is a collaboration among Behavioral Science Division investigators and colleagues at VA Boston Healthcare System and Boston University. VetChange will be piloted with two groups of Veterans: participants in a research project at VA PTSD outpatient clinics, and detoxification patients with alcohol use disorder

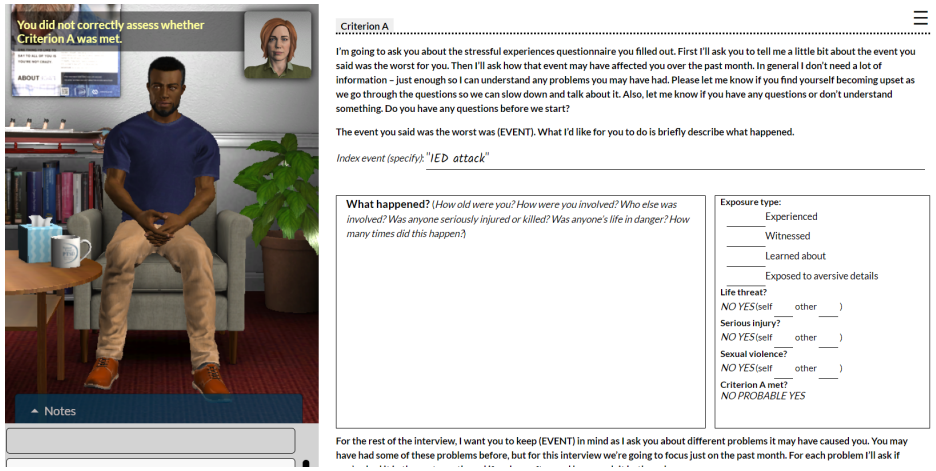
and PTSD symptoms following detoxification.

At the same time, National Center staff continued the integration of the VetChange app with the web-based version. The Behavioral Science Division is working with the Dissemination and Training Division to improve the functionality of the VetChange app for iOS devices and to develop an Android version. The updated app will integrate with the VetChange website and include access to coping and action plans completed on the website; substance use tracking capabilities; real-time mood tracking; and coping skill suggestions to help Veterans manage urges to drink and general distress in real time.

The Women's Health Sciences Division has received additional funding to support its national peer support network **WoVeN**. WoVeN fosters personal connections, improves well-being, and provides information to support the readjustment of female Veterans after they separate from service. In the spring of 2019, national trainers from eight cities and an additional 34 peer leaders from 17 cities attended a train-the-trainer workshop that has further expanded the initiative's reach. Given the success of this first training, there are plans to expand this program in 2020 with three new workshops. This initiative will substantially increase the number of WoVeN support group leaders, helping to meet the significant demand for these groups from women Veterans across the country.

In FY2019 the reach of the Women Veterans' Network was expanded via a train-the-trainers workshop.

The Cards for Connection program was continued during FY 2019. This program, originally created for Veterans experiencing homelessness, involves decks of standard playing cards with helpful information on them, such as the number for the Veterans Crisis Line or easy-to-implement coping skills. Thanks to input from users, this year the cards were enhanced to include waterproof cases, a permanent marker to allow for note-taking, and the phone number for the Women Veterans Call Center. The new decks will be distributed to 13,000 Veterans through a variety of VA, nonprofit, and justice-based programs, and will be available on the new VHA Diffusion Marketplace in FY 2020.



The National Center is developing a CAPS-5 training program that utilizes a responsive virtual patient. The training will be available in FY2020.

Educational Resources for Professionals

The Center is developing a state-of-the-art online training program to teach the proper administration and scoring of CAPS-5. Utilizing a responsive virtual patient, voice recognition technology, and artificial intelligence, the CAPS-5 Training Simulator will give learners an immersive experience that will simulate live, in-person training. The course will launch early in FY 2020, and staff will gather data about its performance that will inform improvements in later years.

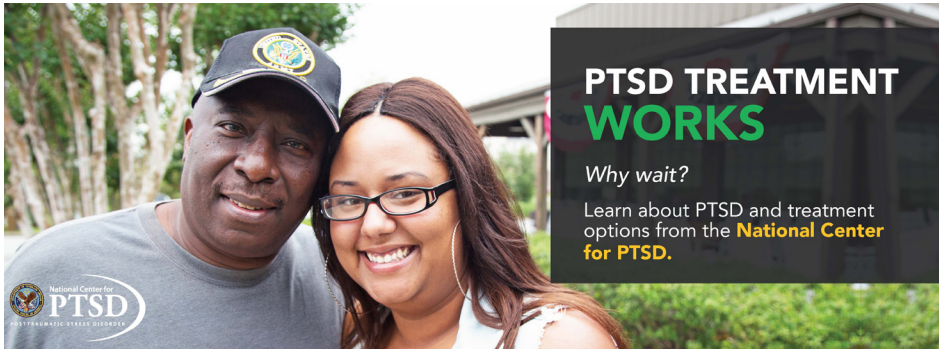
Skills for Psychological Recovery (SPR) is also slated to launch in FY 2020. This course is designed both for mental health staff and peer specialists who provide services to people in the aftermath of natural disasters, attacks, and other traumatic events. Because SPR takes a

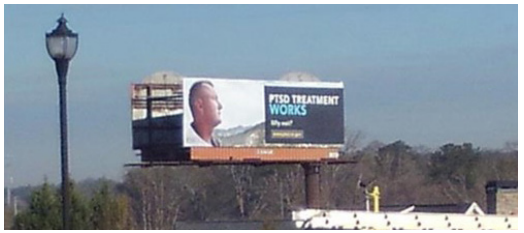
problem-solving approach to tackling challenges, providers can also use it with Veterans who want to work on difficulties they are facing. The course features video vignettes, expert tips, and handouts for clients.

The Center's flagship **PTSD 101 series** of one-hour courses added six new titles in FY 2019, including courses in treating comorbid PTSD and substance use disorder; assessing and reducing risk of violence in Veterans with PTSD; and the use of telehealth in PTSD treatment. Available through the website and through **TRAIN** (Training Finder Real-time Affiliate Integrated Network), PTSD 101 courses offer free continuing education credits to learners. Learners who successfully complete longer courses on the website can also earn free continuing education credits in a variety of mental health and medical disciplines.

In collaboration with the CPT Team, which is responsible for CPT training throughout VA, Center staff have contributed to the development of a number of educational products. One project involved leading the development of a new CPT web course, Cognitive Processing Therapy for PTSD Enhanced Practice, which is now available online to both VA and non-VA providers. National Center staff also coordinated and co-led a CPT train-the-trainer workshop during the summer of 2019 and is planning another for 2020.

A course that will train providers in Skills for Psychological Recovery will launch in FY2020.





In FY2019, the Center launched a marketing campaign intended to increase use of the National Center for PTSD website and resources.

Online Communication Resources

The National Center's redesigned website was launched in FY 2019. The result of a three-year planning effort, the website provides a more rewarding and streamlined experience for both long-time users and new visitors. An extensive marketing campaign was undertaken in connection with the site relaunch, including online ads, signage on public transportation, billboards in urban areas, and ads in print magazines with large Veteran and Servicemember readerships. A public service announcement was also distributed via radio and television. The advertising directed viewers to the overall site as well as to three key resources: **AboutFace**, the **PTSD Treatment Decision Aid**, and the **PTSD Coach** mobile app.

PTSDpubs is the new name for the Center's online database of research on psychological trauma and its consequences. Formerly known as Published International Literature on Traumatic Stress (PILOTS), PTSDpubs gives users around the world free access to the international interdisciplinary literature on PTSD and other mental health consequences of exposure to traumatic events. At the end of the fiscal year, the database contained more than 62,500 items.

FY 2019 Communication Resources at a Glance

Website (www.ptsd.va.gov)
8.2 million views

Mobile Apps
488,865 downloads of 16 apps

PTSD Monthly Update Newsletter
340,929 subscribers

Facebook
154,336 likes

PTSD Research Quarterly
57,140 subscribers

Clinician's Trauma Update Online
47,712 subscribers

Twitter
38,691 followers

Assessment Instruments
516,313 downloads

Professional Articles
329,928 unique views

Printed Items Distributed for Free in the U.S.
289,675

About the National Center for PTSD

History

The National Center for PTSD was created in 1989 within VA in response to a Congressional mandate (PL 98-528) to address the needs of Veterans and other trauma survivors with PTSD. The National Center was developed with the ultimate purpose of improving the well-being, status, and understanding of Veterans in American society. The mandate called for a Center of Excellence that would set the agenda for research and education on PTSD without direct responsibility for patient care. Convinced that no single VA site could adequately serve this unique mission, VA initially established the Center as a consortium of five Divisions.

Organization

The National Center now consists of seven VA academic Centers of Excellence across the United States, with headquarters in White River Junction, Vermont. Two Divisions are in Boston, Massachusetts; two in West Haven, Connecticut; one in Palo Alto, California; and one in Honolulu, Hawaii. Each contributes to the overall Center mission through specific areas of focus.

The National Center for PTSD is an integral and valued component of VA's Office of Mental Health and Suicide Prevention (OMHSP), which is part of VHA. OMHSP and the Center receive budget support from VA, although the Center also leverages this support through successful competition for extramural research funding.

National Center for PTSD Quick Facts

- The National Center for PTSD was formed in 1989
- The Center has seven Divisions across the U.S., each with a distinct area of focus
- The National Center for PTSD manages the largest PTSD brain bank in the world

Leadership in Fiscal Year 2019

Paula P. Schnurr, PhD

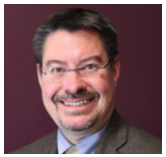
Executive Director, Executive Division, White River Junction, VT
Professor of Psychiatry,
Geisel School of Medicine at Dartmouth

Matthew J. Friedman, MD, PhD

Senior Advisor and founding Executive Director, Executive Division, White River Junction, VT
Professor of Psychiatry and of Pharmacology and Toxicology,
Geisel School of Medicine at Dartmouth

Jessica L. Hamblen, PhD

Deputy for Education, Executive Division, White River Junction, VT
Associate Professor of Psychiatry,
Geisel School of Medicine at Dartmouth



Paul E. Holtzheimer, MD

Deputy for Research, Executive Division, White River Junction, VT
Associate Professor of Psychiatry,
Geisel School of Medicine at Dartmouth

Terence M. Keane, PhD

Division Director, Behavioral Science Division, Boston, MA
Professor of Psychiatry and Assistant Dean for Research,
Boston University School of Medicine

John H. Krystal, MD

Division Director, Clinical Neurosciences Division, West Haven, CT
Robert L. McNeil, Jr. Professor of Translational Research and Chairman of the Department of Psychiatry, Yale University School of Medicine

Craig S. Rosen, PhD

Acting Division Director, Dissemination and Training Division, Menlo Park, CA
Associate Professor of Psychiatry and Behavioral Sciences,
Stanford University School of Medicine

Rani A. Hoff, PhD, MPH

Division Director, Evaluation Division, West Haven, CT
Director of the Northeast Program Evaluation Center, West Haven, CT
Professor of Psychiatry, Yale University School of Medicine

Tara E. Galovski, PhD

Division Director, Women's Health Sciences Division, Boston, MA
Associate Professor of Psychiatry,
Boston University School of Medicine

Fiscal Year 2019 Expert Panels

EXPERT SCIENTIFIC PANEL

Chair: Thomas C. Neylan, MD
San Francisco VA Medical Center; University of San Francisco School of Medicine

Col. David Benedek, MD, LTC, MC, USA
Uniformed Services University of the Health Sciences

Susan E. Borja, PhD
National Institute of Mental Health

John Fairbank, PhD
National Center for Child Traumatic Stress, Duke University Medical Center

Sandro Galea, MD, DrPH
Boston University School of Health

JoAnn Kirchner, MD
VA Mental Health Quality Enhancement Research Initiative, Central Arkansas Veterans Healthcare System; University of Arkansas for Medical Sciences

Brett Rusch, MD
White River Junction VA Medical Center
Geisel School of Medicine at Dartmouth

Alan L. Peterson, PhD, ABPP
University of Texas Health Science Center

Kerry Ressler, MD, PhD
McLean Hospital, Harvard Medical School

Barbara O. Rothbaum, PhD, ABPP
Emory University School of Medicine

Elizabeth Yano, PhD, MSPH
VA Greater LA Healthcare System, UCLA Fielding School of Public Health

Ex-Officio: Theresa Gleason, PhD
VA Clinical Science Research & Development

EXPERT EDUCATIONAL PANEL

Chair: Dean Kilpatrick, PhD
National Crime Victims Research & Treatment Center, Medical University of South Carolina

Craig Bryan, PsyD, ABPP
National Center for Veterans Studies, The University of Utah

Ann Feder, LCSW
Department of Veterans Affairs, VISN 2

Michael Fisher, MSW
Readjustment Counseling Services, Department of Veterans Affairs

Michael R. Kauth, PhD
VA South Central Mental Illness Research Education Clinical (MIRECC)

Kacie Kelly, MS
George W. Bush Presidential Center

Jackie Maffucci, PhD
Iraq and Afghanistan Veterans of America

Lisa A. Marsch, PhD
Center for Technology and Behavioral Health, Dartmouth Psychiatric Research Center, Geisel School of Medicine at Dartmouth

David S. Riggs, PhD
Center for Deployment Psychology, Uniformed Services University of the Health Sciences

EXECUTIVE DIVISION
VA Medical Center (116D)
215 North Main Street
White River Junction, VT 05009

BEHAVIORAL SCIENCE DIVISION
VA Boston Healthcare System (116B-2)
150 South Huntington Avenue
Boston, MA 02130

CLINICAL NEUROSCIENCES DIVISION
Psychiatry Service (116A)
VA Medical Center
950 Campbell Avenue
West Haven, CT 06516

DISSEMINATION AND TRAINING DIVISION
VA Palo Alto Health Care System
Building 334-PTSD
795 Willow Road
Menlo Park, CA 94025

EVALUATION DIVISION (NEPEC)
VA Connecticut Healthcare System (182)
950 Campbell Avenue
West Haven, CT 06516

PACIFIC ISLANDS DIVISION
VA Pacific Islands Healthcare System
459 Patterson Road
Honolulu, HI 96819

WOMEN'S HEALTH SCIENCES DIVISION
VA Boston Healthcare System (116B-3)
150 South Huntington Street
Boston, MA 02130

National Center for PTSD
POSTTRAUMATIC STRESS DISORDER