

NATIONAL CENTER FOR PTSD FISCAL YEAR 2020 ANNUAL REPORT

With a Special Focus on
**Telehealth and Digital
Interventions for PTSD**



National Center for
PTSD
POSTTRAUMATIC STRESS DISORDER

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ACRONYMS USED IN THE TEXT

CAP Consortium to Alleviate PTSD	IPV Intimate Partner Violence	PTSD-Repository PTSD Trials Standardized Database Repository
CAPS-5 Clinician-Administered PTSD Scale for DSM-5	JIF Joint Incentive Fund	STAIR Skills Training in Affective and Interpersonal Regulation
CBT Cognitive Behavioral Therapy	LIGHT Longitudinal Investigation of Gender, Health, and Trauma	STRONG STAR South Texas Research Organizational Network Guiding Studies on Trauma and Resilience
CoE Center of Excellence	mHealth Mobile Health	TBI Traumatic Brain Injury
COVID-19 Coronavirus Disease 2019	MST Military Sexual Trauma	VA Department of Veterans Affairs
CPT Cognitive Processing Therapy	NCPTSD National Center for PTSD	VA CRAFT Community Reinforcement and Family Training
CSP Cooperative Studies Program	NHRVS National Health and Resilience in Veterans Study	VHA Veterans Health Administration
CVT Clinical Video Teleconferencing	OMHSP Office of Mental Health and Suicide Prevention	webSTAIR Web-Based Skills Training in Affective and Interpersonal Regulation
DoD Department of Defense	PBI Network Practice-Based Implementation Network	WET Written Exposure Therapy
DSM-5 <i>Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition</i>	PE Prolonged Exposure	WoVeN Women Veterans Network
EBPs Evidence-Based Psychotherapies	PTSD Posttraumatic Stress Disorder	
FY Fiscal Year		

FROM THE EXECUTIVE DIRECTOR



Paula P. Schnurr, PhD
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2020 was a year of unprecedented challenges to “business as usual” – for the National Center for Posttraumatic Stress Disorder PTSD (NCPTSD), Department of Veterans Affairs (VA) and the entire country. VA clinicians dramatically increased provision of virtual and telehealth care at the start of the coronavirus

disease 2019 (COVID-19) pandemic. The country also experienced a renewed focus on race after several high-profile deaths of people of color, followed by racial justice protests and a revitalized national conversation.

The year began with good news. In December 2019, the “Healing PTSD” U.S. Postal Service stamp was introduced. To me, the stamp was a milestone in just how far we have come in recognizing the people who have had PTSD and the impact PTSD has on so many of us. Proceeds from the sale of the stamp will go to the National Center to support our work on the treatment and understanding of PTSD.

Much of the year was spent developing and refining our response to the COVID-19 pandemic. As clinicians adapted to meet the challenges posed by virtual care, our Consultation Program developed a series of webinars relevant to providing treatment during the pandemic and expanded its usual consultation services to include any issues related to addressing the mental health effects of COVID-19. Our educational team rapidly published and disseminated resources for clinicians, patients and the community, including the COVID Coach app to promote coping with the stressors created by the pandemic. More information can be found in the Promoting PTSD Education: Training, Dissemination and Communication section of this report. Our researchers have also adapted, moving many research programs to a virtual setting and studying the effects of

pandemic-related stress on Veterans, healthcare workers and people with PTSD.

In addition, we are bolstering our focus on the intersection of race and trauma. We have dedicated editions of our PTSD Research Quarterly, Clinician’s Trauma Update Online and PTSD Consultation Program webinar series on issues around race and ethnicity, minority status and prejudice. We continue to support work by our staff on these important issues.

I am pleased to announce that in 2020 we created the VET—Veteran Engagement Team—a group of Veterans who will be providing feedback on NCPTSD research and educational activities. Although the National Center has always sought feedback from Veterans on various initiatives, having a diverse group of Veterans readily available to provide input across a wide range of activities will help us ensure the relevance of our work to these key stakeholders.

I also am sad to report that we lost a member of the National Center family who has been with us from the very beginning. Ron Duman, PhD, a neuroscientist at the Clinical Neurosciences Division, died in February. Ron’s work on the molecular and neurobiological responses to stress and trauma was groundbreaking in the field of molecular psychiatry. His death is not just a loss to his family and friends, but also to the broader scientific community. He was an exceptional scientist and a wonderful person.

The challenges of this year have underscored the necessity of the work of the National Center for PTSD. I am proud of what our researchers and staff have accomplished to continue meeting the needs of Veterans in this unique year and beyond.

Paula P. Schnurr, PhD
Executive Director

TELEHEALTH AND DIGITAL INTERVENTIONS FOR PTSD

The flight from Honolulu to Hilo, Hawaii was about 55 minutes — not a long flight, but long enough to think there must be a better way. Dr. Leslie Morland, then a clinical postdoctoral fellow at NCPTSD’s Pacific Islands Division, was making weekly flights from Honolulu to deliver anger management group therapy to Veterans with PTSD living on other Hawaiian Islands. VA mandates delivery of high-quality care to all Veterans, regardless of where they live. In the late 1990s, the only way to do this in Hawaii was to fly clinicians from the main hospital on Oahu to other locations to deliver specialty mental health care.

However, the late 1990s and early 2000s were a time of rapid expansion in digital technology. Dr. Morland thought her anger management content could be delivered virtually, using then-cutting-edge video technology. She was right. Veterans easily adapted to the new approach. She noted, “We were able to maintain engagement with these Veterans without having to fly. So we helped solve the issue of access to care among rural Veterans. But, the response was that this care was ‘better than nothing,’ and that the care was not reimbursable. What if we had data that telehealth delivery is just as good as in-person care?” Dr. Morland took initiative and led a study that demonstrated that anger management group therapy delivered with video-teleconferencing was as effective as traditional in-person treatment for Veterans with PTSD.



Leslie Morland, PsyD, Investigator, Pacific Islands Division

Dr. Morland’s insight was an example of the burgeoning field of telehealth — the practice of using technology to connect a patient and a healthcare provider. The shift from in-person care to care delivered through technological means began NCPTSD’s multi-decade expansion into telehealth and digital interventions for PTSD and related problems. This shift complemented broader VA efforts to make telehealth a viable option for Veterans. Advances in technology, rigorous research and ingenuity and flexibility of Veterans and clinicians made this possible and paved the way for the VA’s expansion of telehealth during the COVID-19 pandemic.

After the initial success delivering anger management groups remotely in Hawaii, the National Center has identified ways to expand and evaluate VA telehealth offerings along the continuum of care to meet the needs of as many Veterans as possible. This includes delivering evidence-based psychotherapy via clinical video-teleconferencing (CVT), Mobile Health self-management (e.g., apps and online programs) and clinician-supported digital technologies. Work from the Dissemination & Training Division helps ensure these approaches are adopted by the field and the Veterans who need them. During the COVID-19 pandemic, the National Center has used this expertise to rapidly and effectively address the unique needs of patients and providers.



The shift from in-person care to care delivered through technological means began NCPTSD’s multi-decade expansion into telehealth and digital interventions.

Clinical Video Teleconferencing: Traditional Psychotherapy Delivered Virtually

CVT allows for real-time, face-to-face telehealth appointments through video using a computer, tablet or smartphone. In the early 2000s, office-based CVT steadily grew; Veterans would visit a local VA community-based outpatient clinic to connect with their clinician at another facility. Telehealth delivery of psychotherapy to the home began in 2013 and expanded in 2017 with the national launch of the VA Video Connect platform. This platform allows patients to engage in mental health care from home, further increasing convenience and flexibility.

Studies have consistently shown that outcomes for CVT delivery of PTSD trauma-focused psychotherapies are as good as outcomes for in-person care. Dr. Morland, who led much of the research demonstrating the efficacy of trauma-focused psychotherapies delivered by CVT, says that "rigorous studies have shown you can achieve the same clinical gains using the CVT platform." For example, in fiscal year (FY) 2020, Dr. Morland and her colleagues published the results from a study in which they compared efficacy of PE delivered in-home, in-person, through home-based telehealth, or office-based telehealth. Veterans in this study reported significant reductions in PTSD symptoms at posttreatment

and at 6-month follow-up regardless of how they received psychotherapy. Dr. Morland continues to study the ability of telehealth to deliver other psychotherapies for PTSD. She is in the final phase of a large trial examining the clinical efficacy of brief Cognitive-Behavioral Conjoint Therapy for PTSD, which is delivered to a patient with PTSD and their loved one, when conducted via home CVT versus in the office. Results are expected in FY 2021.

PTSD Self-Management via Mobile Health





In 2009, National Center investigators considered whether digital technologies could be used to support trauma survivors whenever and wherever the survivors needed it, such as in the middle of the night when awakened by a nightmare. "For several years," Dr. Eric Kuhn, an investigator at the Dissemination & Training Division and co-founder of the Mobile Mental Health Program, recollected, "we had been developing web-based tools for trauma survivors. In 2009, we noticed that many Veterans in our residential PTSD programs had smartphones. It was at that point we realized that if we were going to meet our Veterans where they were, we needed to be on their phones."

Mobile apps, sometimes described as Mobile Health or mHealth, can be used to promote self-help for PTSD and

NCPTSD Mobile Apps




The NCPTSD has created a suite of mobile apps to promote self-help and support psychotherapies for PTSD and related problems.

SELF HELP

-  PTSD Coach
-  PTSD Family Coach
-  Mindfulness Coach
-  VetChange





These apps provide support and guidance in living with PTSD.

TREATMENT COMPANIONS

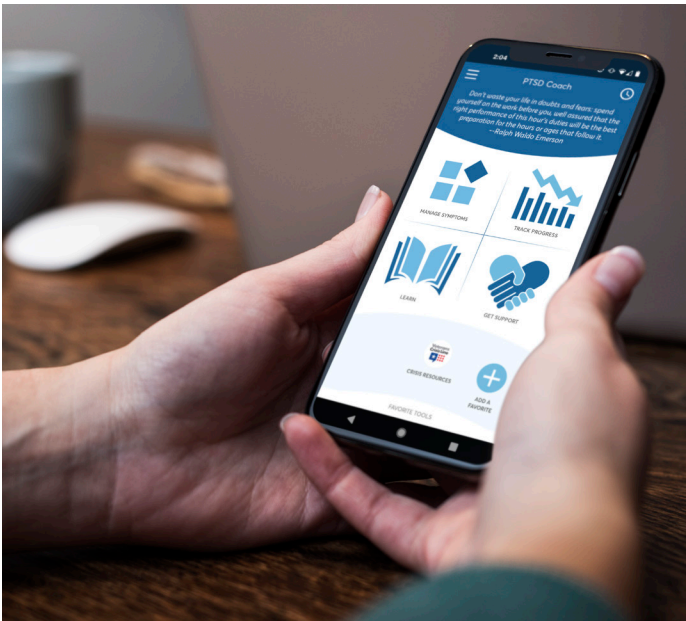
-  CPT Coach
-  PE Coach
-  CBT-i Coach
-  ACT Coach

These apps offer additional help for PTSD treatments.

RELATED

-  COVID Coach
-  Couples Coach
-  Insomnia Coach
-  StayQuit Coach

These apps help with related issues affecting people with PTSD.



PTSD Coach is the most frequently downloaded trauma-related mobile app available.

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related problems. “Advances in digital technology have afforded opportunities to reach and help trauma survivors at an unprecedented scale,” says Dr. Kuhn. “NCPTSD is a world leader in driving this revolution with its publicly available evidence-based self-management tools, including the highly-rated and widely-used PTSD Coach mobile app.” PTSD Coach, the most frequently downloaded trauma-related mobile app available, provides on-demand psychoeducation about PTSD, self-assessment with a validated measure (the PTSD Checklist for the *Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition [DSM-5]*), strategies for coping with PTSD symptoms and links to social support and professional resources. Dr. Kuhn’s research shows that PTSD Coach improves PTSD symptoms, even when used independently of other mental health care.

Self-help apps like PTSD Coach are not intended to replace specialty mental health treatment, but they can serve to educate Veterans and their families, clinicians outside of mental health, and the public about stress, trauma, PTSD and available resources. According to Dr. Pearl McGee-Vincent, the Acting Deputy Director of the Dissemination & Training Division and a key member of the NCPTSD Mobile Mental Health Program, “These apps can help Veterans who are just starting to learn about PTSD or available treatments – they provide short readings to familiarize Veterans with PTSD,

PTSD treatment, common reactions to trauma and coping skills. They can improve mental health literacy, which can be a first step in seeking care.” In an ongoing study, Dr. Kuhn is evaluating whether PTSD Coach, combined with clinician support, improves PTSD and alters use of mental health care services in Veterans treated in primary care. Dr. Kuhn is also examining strategies using Veterans’ families to increase Veterans’ engagement in care. The National Center previously developed Community Reinforcement and Family Training ([VA CRAFT](#)) for PTSD, a web-based course for family members of Veterans with PTSD. Dr. Kuhn’s new study combines VA CRAFT with VA’s Coaching Into Care initiative, which involves telephone coaching to help spouses and intimate partners of Veterans with untreated PTSD encourage their Veteran to seek mental health care. National Center staff also developed PTSD Family Coach, an app that provides support for family members of individuals with PTSD.

The NCPTSD [mobile apps portfolio](#) includes other self-help apps to address problems commonly experienced by Veterans with PTSD, such as anger (Anger and Irritability Management Skills), smoking (StayQuit Coach), relationship distress (Couples Coach) and alcohol misuse (VetChange). The National Center also created treatment companion apps intended to be used during a course of PTSD treatment. For example, PE Coach and CPT Coach help both patients and providers work through the treatment protocols by providing easy access to treatment materials, reminders to complete homework and PTSD symptom tracking. PE Coach also allows exposure sessions to be recorded.

“Advances in digital technology have afforded opportunities to reach and help trauma survivors at an unprecedented scale.”



Eric Kuhn, PhD, Investigator, Dissemination and Training Division

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Regarding mHealth's future, Dr. Kuhn says, "Researchers and clinicians are developing, testing and implementing innovative approaches to support trauma survivors using digital self-management tools to increase their use and effectiveness. Depending upon settings, available resources and type of support desired by survivors, self-management tools are successfully being supported by peers, paraprofessionals and licensed clinicians."

Going Beyond Self-Management in mHealth

Tools like PTSD Coach that support self-management can provide brief, in-the-moment support for dealing with PTSD symptoms. The National Center is also working to develop more intensive self-management programs that leverage a similar digital approach but are enhanced by participation of a therapist, peer, or trained coach. Research has shown that facilitation can enhance mHealth tools for depression and anxiety, and initial evidence suggests facilitation may be helpful for PTSD as well. Dr. Carmen McLean's team is evaluating the efficacy of Web-PE (a web-based version of Prolonged Exposure [PE] for reducing symptoms of PTSD in military personnel and Veterans. Web-PE is delivered with therapist assistance and has potential to increase the reach of PE to those who cannot otherwise access in-person care. Another study, led by Dr. Marylene Cloitre, is examining the feasibility, acceptability and effectiveness of web-based Skills Training in Affective and Interpersonal Regulation (webSTAIR), an 8-session version of Skills Training in Affective and Interpersonal Regulation (STAIR). In this study, focused on rural women Veterans with military sexual trauma (MST),

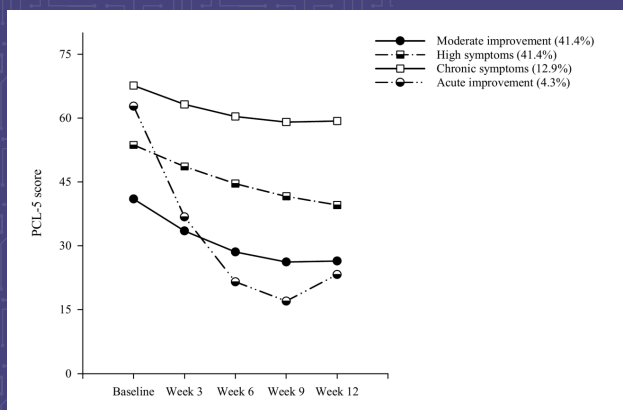


With asynchronous text messaging, communication occurs using text, photo, audio or video whenever the patient and provider choose.

webSTAIR is adapted to the web with varying levels of therapist support.

Asynchronous text messaging between a patient and provider is a new and exciting strategy for delivering psychotherapy. With this method, communication occurs using text, photo, audio or video whenever the patient and provider choose—very different from "synchronous" telehealth where live interactions are required. In FY 2020, NCPTSD investigators published the first study of asynchronous text messaging for PTSD: therapists messaged patients at least once per day, 5 days a week for 12 weeks and patients could send any number of messages to their therapist. Nearly half of patients had clinically significant improvements in PTSD symptom severity following treatment, and investigators are now planning studies to Veterans and specific evidence-based treatments for PTSD.

These innovations—clinician-supported, web-based self-management tools based on established psychotherapies and psychotherapy delivered via text messaging – help fill the gap between clinical care delivered real-time via CVT and mobile apps used independently. These approaches aim to make evidence-based PTSD care available an even broader group of patients.



Two-way Asynchronous Messaging to Treat PTSD

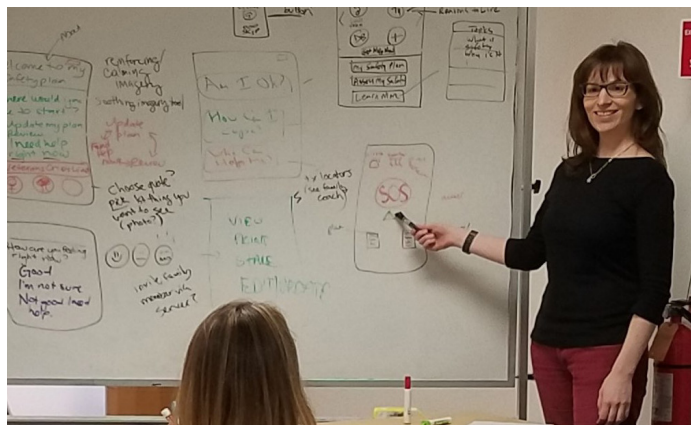
In the first study of asynchronous text messaging for PTSD, nearly half of the 475 patients had clinically significant improvements in PTSD symptom severity measured with the PTSD Symptom Checklist for *DSM-5* (PCL-5) following 12 weeks of treatment.

Malgaroli, M., Hull, T. D., Stirman, S. W., & Resick, P. (2020). Message delivery for the treatment of posttraumatic stress disorder: Longitudinal observational study of symptom trajectories. *Journal of Medical Internet Research*, 22, e15587. doi: [10.2196/15587](https://doi.org/10.2196/15587)

Optimizing the Use of Technology in PTSD Care

Developing evidence-based technological tools for treating PTSD is important, but these efforts are not truly successful until patients and providers adopt these approaches. While NCPTSD mobile apps were among the most researched and highly regarded digital tools available, many providers were unaware they existed or were not sure how to incorporate them into practice. In 2017, Dr. McGee-Vincent launched Tech into Care, which started as a collaboration with the Department of Defense (DoD) and initially worked with a small group of mental health clinicians to provide training and 12 weeks support to integrate mobile apps and online programs into care. This brief pilot led to a \$3.4 million initiative to more broadly implement Tech into Care across the Veterans Health Administration (VHA) and the Defense Health Agency.

Tech into Care trains staff in a range of care settings, such as Primary Care and Specialty Mental Health, to access and use the National Center's many online resources and apps. Great interest in NCPTSD's apps has been shown by a diverse group of care providers including chaplains, audiologists and peer support specialists. By giving staff both the language and the resources to share mobile apps with Veterans, more Veterans now have access to critical resources, such as the Veterans Crisis Line, and in-the-moment coping tools to manage distress between sessions and before or after an episode of care. Dr. McGee-Vincent says, "Providers have told us that they often recommend PTSD Coach as a resource to start learning



Pearl McGee-Vincent, PsyD, Acting Deputy Director, Dissemination and Training Division

about PTSD symptoms, effective treatments and ways to cope with in-the-moment distress in preparation for their first visit with a trauma-focused therapist."

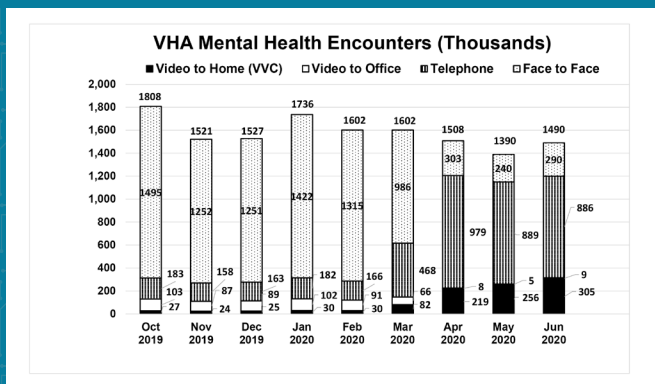
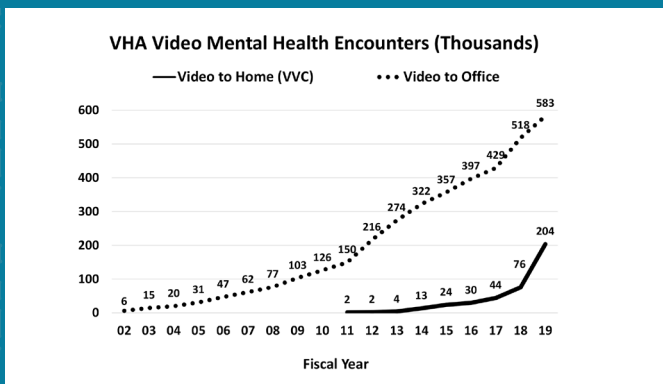
Tech into Care promotes better care for Veterans with PTSD and helps them sustain improvements over time. A provider in the initiative describes the benefits of integrating online interventions into traditional care: "I love introducing apps and online programs into a Veteran's treatment as it encourages them to see therapeutic intervention and self-progress as an endeavor to be continued outside of the therapy room. Not only does it provide supplemental support in a convenient, clear and anonymous way; it also promotes the self-efficacy needed for long term recovery."

Telehealth in the Pandemic Era: The Silver Lining

Based on its extensive experience with telehealth and digital interventions, NCPTSD was well positioned to help VHA pivot to deliver virtual mental health care on a large scale during the COVID-19 pandemic. Given the need for providers to prioritize infection prevention while addressing the increased needs for mental health care, delivery of psychotherapy by CVT dramatically increased in early 2020. VHA provided 1.2 million mental health telephone and video visits in April 2020 and reduced in-person visits by 80%. By June 2020, there was an eleven-fold increase in video visits and a five-fold increase in phone visits. Across all modalities, between April and June 2020, Veterans received almost the same average number of mental health encounters as they did before the pandemic — evidence that VHA providers transitioned quickly and effectively to providing virtual mental health care.

The rapid switch to telehealth at the beginning of the pandemic provided a real-time, unplanned implementation trial for virtual PTSD care in VHA. The PTSD Mentoring Program played a critical role in supporting the clinical infrastructure for this shift to virtual delivery of evidence-based psychotherapy for PTSD. For example, the PTSD Clinical Dashboard was updated to better capture telephone- and video-based appointments. Dr. Kelly Maieritsch, Director of the PTSD Mentoring Program, says, "PTSD specialty care was fortunate to have the resources developed by the National Center in place when providers had to quickly pivot to primarily virtual care. As we focused our efforts on helping

Virtual Mental Health Care During the COVID-19 Pandemic



Number of VHA mental health encounters delivered via clinical video teleconferencing to home or to office, FY 2002-2019. VVC: VA Video Connect.

Modality of VHA mental health encounters, October 2019 to May 2020. During this period of the pandemic, in-person contact was reduced while telephone and video contacts more than doubled.

Rosen, C. S., Morland, L. A., Glassman, L. H., Marx, B. P., Weaver, K., Smith, C. A., ... & Schnurr, P. P. (2020). Virtual mental health care in the Veterans Health Administration's immediate response to coronavirus disease-19. *American Psychologist, 76*, 26-38. doi:10.1037/amp0000751

providers navigate local challenges in the implementation of virtual care, our abundance of resources and technical support were frequently offered and greatly appreciated.”

Simultaneously, the PTSD Consultation Program provided support to clinicians in the field. For providers treating Veterans with PTSD, they continued to offer one-on-one expert consultation tailored to the evolving situation. The team addressed the challenges of treating PTSD during the pandemic in [a live webinar](#) that was attended by over 700 people in March and continues to be available for on-demand viewing. The PTSD Consultation Program also launched a [new online course, PTSD Treatment Via Telemental Health Technology](#), to help clinicians understand the latest research on telehealth for PTSD and the benefits and challenges of using video technology to provide evidence-based psychotherapy for PTSD. The National Center’s Dr. Morland, who also serves as the Director of Telemental Health at the VA San Diego Healthcare System, says, “We are constantly trying to address needs in the field to make telehealth a more viable option. Most times a provider in VA has already navigated the problems another provider is having. Rather than struggling on their own, we want providers to tap into the ample VA resources available to them, with the goal of making telehealth a more sustainable and seamless part of the mental health process for Veterans

with the overarching goal to increase access and reduce disparity of access.”

While clinicians and consultants were working to dramatically increase the amount of mental health care delivered by CVT during the early months of the pandemic, the Mobile Mental Health Program worked to develop a mobile app to help Veterans and others manage stress and access resources related to COVID-19. COVID Coach was released in mid-April 2020. Based on the original PTSD Coach app, COVID Coach was created in response to public and clinical demand for resources to help manage pandemic-related stress and mental health challenges. With 135,000 downloads by the

“PTSD specialty care was fortunate to have the resources developed by the National Center in place when providers had to quickly pivot to primarily virtual care.”



Kelly Maiertsch, PhD, Director of the PTSD Mentoring Program



Elissa McCarthy, PhD, Consultant with the PTSD Consultation Program

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end of FY 2020, COVID Coach is a cornerstone of NCPTSD's digital response to the COVID-19 pandemic.

It is hard to imagine the delivery of PTSD care ever going back to business-as-usual, in which in-office, in-person care is the primary or only option offered to Veterans seeking PTSD care. In fact, VA's Office of Connected Care has added the expansion of virtual mental health care treatment as a performance metric, and in the wake of the COVID-19 pandemic, virtual mental health care is expected to continue to be available for all outpatient mental health care to ensure flexible access for all Veterans. According to Dr. Morland, "the rapid expansion of virtual mental health care is a silver lining of the COVID-19 pandemic."

The Future of Telehealth and Digital Interventions for PTSD

The history of telehealth delivery of psychotherapy and digital self-management tools for PTSD is a story of using technological advances to better and more efficiently meet patient needs. The culmination of decades of innovation and research in concert with 2020's landscape-shifting challenges and successes provides a unique opportunity to imagine the future of digital PTSD care. This future promises increased confidence in the effectiveness of virtually-delivered PTSD care and easier access to care.

In addition to giving rural Veterans access to the best care available and providing in-the-moment self-management tools, virtually-delivered PTSD care promises to increase access for many groups of Veterans who face barriers to the standard in-person model of care delivery. For example, Veterans with disabilities, women Veterans and Veterans with jobs and families all might access care more easily through technology. According to Dr. Morland, "Our goal is to keep Veterans in their lives. We don't want treatment to pull them out of their lives, and for them to have to schedule their life around coming to the VA."

The National Center for PTSD's unique history of innovation, development and research in this field has made it a national leader in virtual PTSD care. This expertise allowed NCPTSD to greatly contribute to the increased need for virtual mental health care during the COVID-19 pandemic and positions the National Center to continue leading digital health efforts going forward.

Digital Self-Help During the COVID-19 Pandemic



In addition to COVID Coach, which was created to support self-care and mental health during the pandemic, investigators are working to create and evaluate a web-based program specifically for healthcare workers impacted by COVID-19. This program will assess users' needs and provide individualized evidence-based strategies to help them cope with challenges related to the pandemic.

ADVANCING KNOWLEDGE ABOUT PTSD: MAJOR RESEARCH INITIATIVES IN FY 2020

For over 30 years, the National Center for PTSD has been the world’s leading research center of excellence on PTSD and traumatic stress. That legacy continued in FY 2020. Investigators at the National Center participated in 146 funded studies, many in collaboration with partner organizations in the government, academic institutions and agencies outside the United States. NCPTSD investigators published 249 peer-reviewed journal articles, book chapters and books, and prepared an additional 150 in-press and advance online publications. A comprehensive listing of funded and published work can be found in Appendices C, D, and E.

National 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 Service members and Veterans. The consortium is led by the National Center and the South Texas Research Organizational Network Guiding Studies on Trauma and Resilience (STRONG STAR) network at the University of Texas Health Science Center at San Antonio. The CAP has finished its seventh year. All 11 CAP projects are completed; two of these have published their findings and the remainder are finishing data analyses.

Several projects under the VA Cooperative Studies Program (CSP) also take advantage of the National Center’s broad

reach and robust partnerships. Recruitment for CSP #2016, a multi-site, placebo-controlled CSP study to examine three commonly prescribed medications for PTSD-related insomnia (trazodone, eszopiclone and gabapentin), will launch in FY 2021. Results for CSP #591, a comparative effectiveness study of over 900 Veterans engaged in Prolonged Exposure (PE) and Cognitive Processing Therapy (CPT) at 17 VA facilities across the country, are expected in FY 2021.

The size and scope of the National Center make it well-positioned to undertake studies with large samples and long time frames. In the Longitudinal Investigation of Gender, Health and Trauma (LIGHT) study, for example, National Center researchers are examining the influence of community violence on PTSD and health outcomes, including reproductive health in women Veterans, over time. This study, launched in FY 2018, currently includes four waves of data from over 3,600 Veterans, about half of whom are women. A fifth survey is planned for winter 2021.

Research activities in the National Center are driven by [operational priorities](#): Biomarkers, Treatment, Care Delivery, Implementation and PTSD and Suicide. The following sections highlight some of the research undertaken during FY 2020. Appendix B contains descriptions of research projects that took place at each of the seven Divisions.



NATIONAL CENTER FOR PTSD OPERATIONAL PRIORITIES

Biomarkers

The National Center is dedicated to research aimed at identifying measurable biological factors that inform the diagnosis, assessment, prevention and treatment of PTSD. NCPTSD biomarker work benefits from collaborations with several other organizations, including the [Translational Research Center for Traumatic Brain Injury and Stress Disorders](#), the Psychiatric Genomics Consortium, the PTSD Working Group of the Enhancing Neuroimaging Genetics through Meta-Analysis Consortium and the Million Veteran Program.

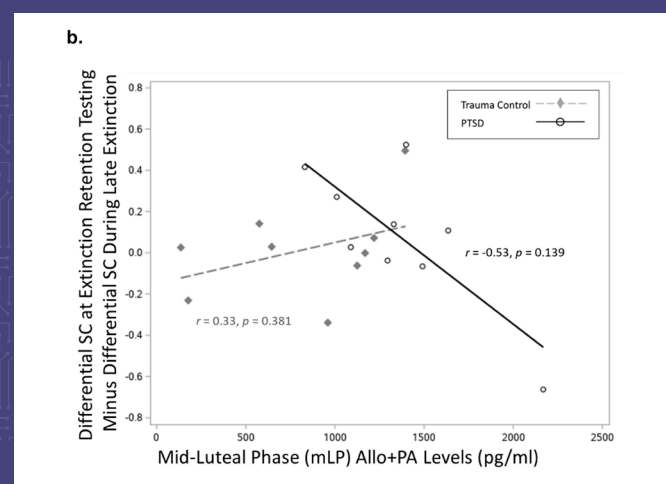
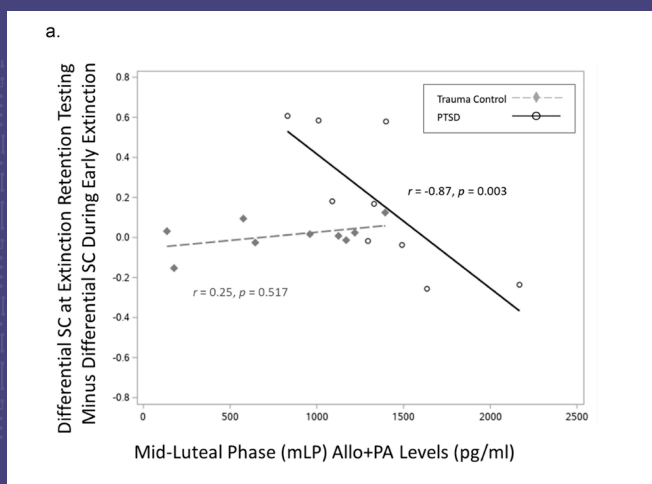
VA's [National PTSD Brain Bank](#) continues to grow under the direction of Dr. Matthew Friedman, Senior Advisor to the National Center. The current inventory includes approximately 280 brains. The Brain Bank's intramural research program has made significant progress, with several high impact articles that identify genes in specific brain regions important to the neurobiology of PTSD. In other genetics work, National Center investigators examined how specific genes were modified

by experience (epigenetics) in over 1,650,000 U.S. Veterans with PTSD. The findings, published in *Nature Neuroscience*, identified eight distinct genetic risk factors for intrusive reexperiencing symptoms; results were replicated using data from the UK Biobank.

In neuroendocrinology, recently published results reveal that lower levels of the neurohormone allopregnanolone contribute to deficits in recall of extinction learning, a key learning mechanism in recovery from PTSD, among women with PTSD. A new study is investigating the impact of intravenous allopregnanolone on extinction retention and fear memory reconsolidation, a process by which fear memories can be modified to be less distressing.

Multiple ongoing studies are examining PTSD and traumatic brain injury (TBI) to clarify their relative contributions to poor functioning and health outcomes. Studies include combat Veterans with blast-related TBI and women with PTSD secondary to intimate partner violence (IPV). Investigators are also examining neurostimulation in pre-clinical models of PTSD and blast-related TBI.

Abnormalities in Fear Learning Associated with Neurohormone Levels Among Women with PTSD



Resting plasma Allo + pregnanolone (PA) during the mid-luteal phase was differentially associated with extinction retention (with poorer retention indicated by higher values on the y-axis) measured with skin conductance (SC) at both early and late stages of extinction among women with ($n = 9$) and without PTSD ($n = 9$). Findings suggest that treatments that increase Allo + PA levels may improve PTSD.

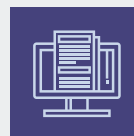
Pineles, S. L., Nillni, Y. I., Pinna, G., Webb, A., Hall, K. A. A., Fonda, J. R., ... & Rasmusson, A. M. (2020). Associations between PTSD-related extinction retention deficits in women and plasma steroids that modulate brain GABA_A and NMDA receptor activity. *Neurobiology of Stress*, *13*, 100225. doi:10.1016/j.ynstr.2020.100225

Treatment Engagement, Efficiency and Effectiveness

Development and evaluation of effective treatments, increasing engagement in evidence-based psychotherapies (EBPs) and delivering care more efficiently are longstanding goals of the National Center. Effectiveness and efficacy studies help researchers understand which treatments work best for which patients, and under which circumstances. Results for the largest known efficacy study of repeated doses of ketamine in Veterans and active duty Service members diagnosed with treatment-resistant PTSD are anticipated in 2021. A large effectiveness study will compare trauma-focused and non-trauma-focused psychotherapy for co-occurring PTSD and substance use disorders. In addition, several in-progress studies are exploring the effectiveness of combining multiple treatments for PTSD and comorbid disorders, including PE and topiramate for PTSD and Alcohol Use Disorder, ketamine and PE for PTSD and PE and Cognitive Behavioral Therapy (CBT) for Insomnia for Veterans with co-occurring PTSD and sleep problems.

An approach to understanding which treatments work best for which patients in real-world clinical settings is to examine data from anonymized VA medical records. For example, in

The PTSD-Repository



The [PTSD Trials Standardized Database Repository \(PTSD-Repository\)](#) is a large, publicly available database of over 300 variables abstracted from 318 published PTSD clinical trials. In FY 2020, National Center staff created featured stories and visualizations that provide an overview of the studies included in the PTSD-Repository and information about how investigators can use the data for their own research. Developers also published a manuscript in which they described how they created the PTSD-Repository and discuss how it can be used to advance research and education initiatives.

work completed in FY 2020, investigators used this method to compare the effectiveness of five evidence-based antidepressants for PTSD over a 10-year period of observation.

National Center investigators continue to evaluate new, shorter treatments for PTSD that may be more amenable to some patient populations and settings, such as Written Exposure Therapy (WET), which is five sessions compared to

Comparing Medications for *DSM-5* PTSD in Routine VA Practice



Methods

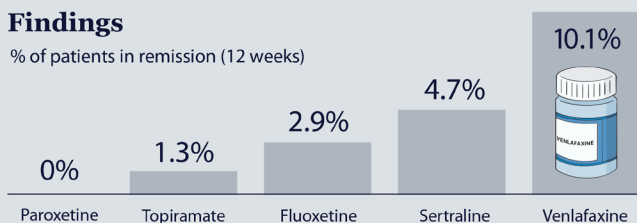
Retrospective VA chart review of Veterans with PTSD (N=834) who received an adequate medication trial (≥ 12 weeks) initiated within 2 weeks of assessment

Highlights

- Novel method to estimate medication use duration
- Unique assessment of acute psychiatric service use, which could impact suicide risk

Findings

% of patients in remission (12 weeks)



- Compared to other medications in this study, venlafaxine **may** be more likely to help VA patients with PTSD achieve remission (defined as no longer meeting *DSM-5* criteria and a PCL-5 score ≤ 18 at 12 weeks). Additional prospective research is needed to confirm this result.
- All medications studied showed a decrease in PTSD symptom score at 12 weeks.
- Stopping any of the medications before 9 months was associated with higher chance of needing acute psychiatric services.

Comparing Medications for *DSM-5* PTSD in Routine VA Practice

NCPTSD investigators used VA medical records to compare the effectiveness of evidence based antidepressants for PTSD.

Shiner, B., Leonard, C. E., Gui, J., Schnurr, P. P., Hoyt, J. E., Young-Xu, Y., & Watts, B. V. (2020) Comparing medications for *DSM-5* PTSD in routine VA practice. *Journal of Clinical Psychiatry*. 81:20m13244. doi: 10.4088/JCP.20m13244.

To read the full article, see Shiner et al. *J Clin Psychiatry* 2020;81(6):20m13244 © 2020 Copyright Physicians Postgraduate Press, Inc.

Research on Diversity, Equity and Inclusion in Relation to Trauma



Investigators are evaluating a group intervention that enhances coping skills and social support to reduce the impact of race-based stressors on health. Investigators also continued work refining a model focused on trauma recovery among sexual and gender minority people that considers their unique minority context and ongoing exposures. An assessment tool that identifies risk for mental health problems is focusing on racial and ethnic minority patients who have experienced disparities in trauma exposure and mental health care is in development.

around a dozen sessions in PE and CPT. Data analyses for a recently completed study comparing WET with CPT for PTSD are in progress. Another ongoing study is examining the efficacy of WET in comparison to PE with Veterans.

Care Delivery, Models of Care and System Factors

Effective treatments are only valuable if they are accessible to patients who might benefit. Several initiatives aimed at improving access to quality care across settings, assessing different models of delivering care and promoting use of evidence-based practices are taking place in the National Center.

Several ongoing studies are assessing the ability of telehealth and web- and mobile-based technologies to increase Veteran access to mental health care and to improve outcomes. Described in detail in the introductory section of this Annual Report, this work by the National Center has generally shown that digital interventions for PTSD can be effective in improving PTSD and related symptoms.

Many Veterans are first identified as having PTSD symptoms during their primary care visits. However, a recent NCIPTSD study suggested that only 60% of Veterans initially screened for PTSD in primary care are referred to specialty mental

Adapting Care Delivery to the COVID-19 Pandemic

National Center investigators rapidly produced multiple manuscripts to inform adaptation of mental health care delivery during the COVID-19 pandemic. These publications detail lessons learned from VA's expansion of telemental health services in response to COVID-19, describe how a psychotherapy training program was modified during the pandemic, suggest approaches for treating pandemic-related moral distress and outline best practices for PTSD with people affected by the pandemic.



health care, with lower rates of referral for Veterans in rural vs. urban clinics. Ongoing work aims to improve access to evidence-based PTSD treatments at rural VA facilities by utilizing strategies such as having external facilitators working directly with providers to promote implementation of EBPs.

Making systems-level changes to increase access to care requires significant effort and stakeholder buy-in. To allow stakeholders to experiment with such changes in a low-burden way, NCPTSD investigators are testing participatory systems dynamics modeling, which uses a computer modeling to compare the likely outcomes of potential solutions to system-level problems. These models were recently updated to address factors related to the COVID-19 pandemic. Preliminary findings indicate that this method, now being tested in two ongoing randomized controlled trials, substantially improved access to EBPs at two facilities.

Implementation

The NCPTSD implementation research portfolio includes research that aims to ensure that best practices are employed throughout the health care system and tests strategies for improving implementation of best practices. Ongoing NCPTSD studies are evaluating approaches for simplifying assessment of the quality of CBT and examining competing strategies intended to enhance and sustain the delivery of CPT. One approach emphasizes fidelity to the CPT protocol through expert consultation and online resources; the other focuses on using continuous quality improvement to improve fit and address barriers to treatment delivery.

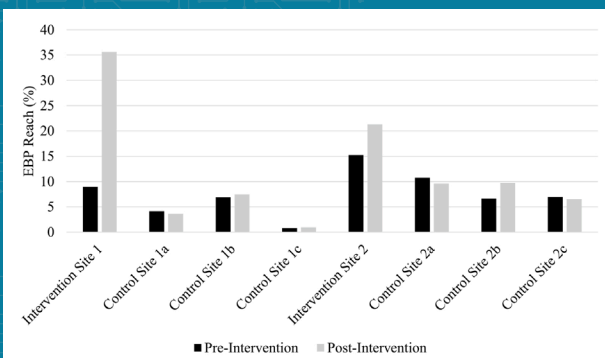
In collaboration with investigators at the Minneapolis VA, National Center investigators published findings showing



Investigators are carrying out a multi-site effectiveness-implementation clinical trial of Recovering from IPV through Strength and Empowerment (RISE), a brief counseling intervention for women who are experiencing IPV.

that an implementation intervention increased the reach of EBPs for PTSD in clinics with low use of EBPs. A trial involving toolkit-guided facilitation of PE in military bases is underway. National Center staff are also studying the implementation of intensive models of PTSD care (defined as delivery of three to five EBP sessions per week) following a successful pilot.

Investigators continued to evaluate a national rollout of IPV screening programs within women's health primary care clinics in VA. Investigators are also carrying out a multi-site effectiveness-implementation clinical trial of a brief counseling intervention, Recovering from IPV through Strength and Empowerment (RISE), for women who are experiencing IPV. A complementary project conducted with the national VHA IPV Assistance Program demonstrated the scalability of RISE in routine care and extended its use to male and non-binary Veterans.



Increasing Reach of Evidence-based Psychotherapies for PTSD

Investigators showed that an implementation intervention increased EBP reach in VA PTSD clinics.

Reprinted by permission from Springer Nature Customer Service Centre GmbH: Springer, Administration and Policy in Mental Health and Mental Health Services Research, Evaluation of an implementation intervention to increase reach of evidence-based psychotherapies for PTSD in US Veterans Health Administration PTSD clinics, Sayer N A, Bernardy N C, Yoder M, et al., Copyright © 2020, advance online publication, September 17, 2020, <https://doi.org/10.1007/s10488-020-01086-3>

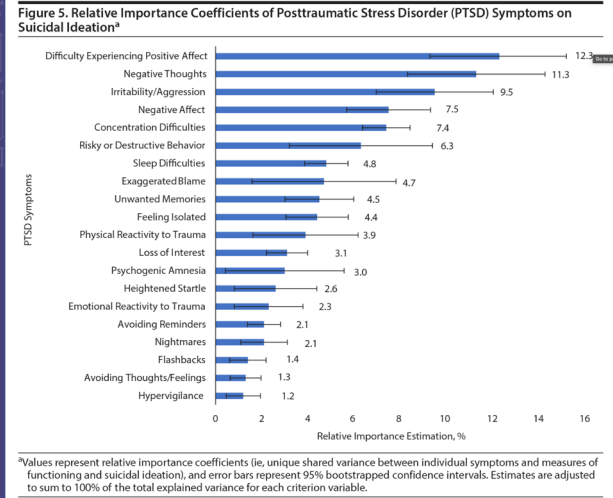
PTSD and Suicide

National Center work on PTSD and suicide covers a broad spectrum, including identification of brain-based biomarkers of suicidality, examination of psychosocial risk factors and novel treatments and evaluation of systems-levels tools for improving suicide prevention among Veterans.

Investigators are using data from the Veterans Metrics Initiative Study to predict suicidal ideation during the first three years after military service. Based on data showing that insomnia is a risk factor for suicide, another new study is conducting in-home sleep monitoring to detect suicide risk in Veterans. Data from the National Health and Resilience in Veterans Study (NHRVS), which surveyed a nationally representative sample of U.S. Veterans, showed that trouble experiencing positive feelings; negative beliefs about oneself, others, or the world; and irritability/aggression were most strongly associated with suicidal ideation.

National Center investigators are also working to develop interventions to prevent suicide and identify barriers to treatment-seeking. National Center investigators continue to test a modified version of WET for Suicide with a sample of Army soldiers and Veterans with PTSD symptoms who have been hospitalized for suicide risk. Several projects are evaluating the anti-suicidal properties of ketamine in both treatment-resistant PTSD and depression and testing how neural alterations and changes in synaptic connectivity after ketamine treatment may underlie behavioral changes.

Individual PTSD Symptoms in Relation to Suicidal Ideation among Veterans



Using data from the NHRVS, investigators examined the contribution of individual PTSD symptoms to suicidal ideation in a national representative sample of Veterans.

Kachadourian, L. K., Harpaz-Rotem, I., Tsai, J., Southwick, S. M., & Pietrzak, R. H. (2019). Posttraumatic stress disorder symptoms, functioning, and suicidal ideation in US military veterans: A symptomics approach. *The Primary Care Companion for CNS Disorders*, 21. doi:10.4088/pcc.18m02402
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Investigators are also developing and implementing an effective suicide prevention intervention for rural VA facilities to decrease suicide risk in Veterans living in rural settings.

Honors and Awards Received by National Center Staff in FY 2020



Tara Galovski, PhD

Women's Health Sciences Division

Kappa Epsilon Psi Military Sorority Award

Lorig Kachadourian, PhD

Clinical Neurosciences Division

Yale Center for Clinical Investigation Scholar Award

Ben Kelmendi, MD

Clinical Neurosciences Division

NIH Loan Repayment Award

Jillian Shipherd, PhD

Women's Health Sciences Division

Certificate of Commitment: Diversity & Inclusion Modernization Team VHA

Fellowships and Travel Awards

James Whitworth, PhD

Behavioral Science Division

Alies Muskin Career Development Leadership Program, Anxiety and Depression Association of America

PROMOTING PTSD EDUCATION: TRAINING, DISSEMINATION AND COMMUNICATION

The Education Landscape during the Coronavirus Pandemic

The COVID-19 pandemic has presented unprecedented challenges on many levels, but it has also created opportunities, encouraging us to find creative solutions to emerging problems. This is certainly true for NCPTSD's education portfolio. While COVID-19 did not upend our educational efforts, it did make us pause and consider a range of questions:

- » How can we help providers in the field pivot quickly to providing most of their PTSD care via telehealth?
- » What resources can we create to help the public successfully navigate the psychological demands of an ongoing public health crisis?
- » How do we migrate in-person training to an online format?
- » What are proven self-care strategies that can we encourage health care workers to use to prevent burnout?
- » Here, we describe how our education portfolio was shaped by the COVID-19 pandemic, a crisis that is still profoundly affecting the way we work.

The [PTSD Consultation Program](#) and the PTSD Mentoring Program were in many respects the National Center's "first responders" to the pandemic. Focusing, respectively, on individual PTSD providers in any setting and on specialty PTSD programs in VA, each was uniquely positioned to play a key role in ensuring that Veterans and the providers who treat them get the support they need.

Established in 2011 to provide free consultation to providers treating Veterans with PTSD, the **PTSD Consultation Program** began fielding COVID-19-related questions starting in the early days of the crisis and demand only grew throughout the spring of 2020. Providers wondered if it was still appropriate to deliver evidence-based treatments

The Intersection of PTSD and Racism



The PTSD Consultation Program was also a leader in the National Center's response to the call to more closely consider the impact of racism and exclusion on mental health. In order to better serve providers who had questions on these issues, the program added a consultant with expertise in the treatment of race-based trauma. The program also hosted two diversity related lectures: one on racism and trauma and another on treating LGBTQ individuals.

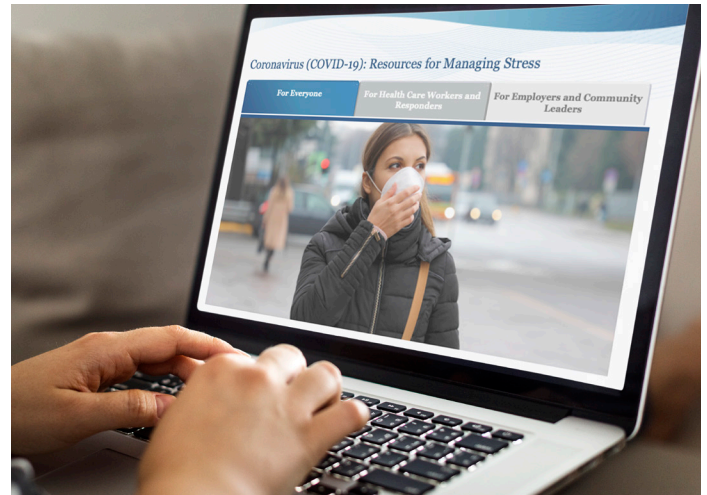
for PTSD while a pandemic raged. They needed help transitioning to delivering care virtually. VA and other hospital-based mental health providers, in particular, had to cope with their new role: acting as disaster mental health specialists for their medical colleagues, especially in those parts of the country where the pandemic was hitting the hardest. These were just some of the issues that program consultants helped providers work through.

In addition to providing the one-on-one guidance for which it is known, the PTSD Consultation Program was able to use its [monthly Lecture Series](#) as a vehicle to address COVID-related issues. Beginning in March 2020, previously scheduled lectures were postponed in favor of talks that focused on topics that are especially salient during this pandemic: self-care, treating PTSD in the context of COVID-19, coping with moral distress in health care settings and addressing intimate partner violence while the nation was in lockdown. Consultants also wrote articles and handouts for the NCPTSD website and spoke on VHA Office of Mental Health and Suicide Prevention (OMHSP) national calls.

The **PTSD Mentoring Program** fulfilled its mission to promote clinical and administrative best practices in PTSD specialty care — a mission that began with the program’s 2008 founding — by helping sites translate rapidly evolving policy into on-the-ground practice. Additionally, it provided person-to-person support to its network of mentors and mentees. As COVID-19 spread and the nation went into lockdown, a sense of urgency set in. Policy was changing rapidly, with directives, memos and briefs being promulgated continually. The Mentoring Program stepped in, distilling information and using its recently redesigned SharePoint site as a knowledge management tool. Timely email updates to leaders of PTSD specialty clinics were designed to communicate the most important points, and the team provided ongoing technical assistance to help sites operationalize directives. As needed, the PTSD Clinical Dashboard was updated with features that could capture the realities of clinical practice during a pandemic, including telephone and VA Video Connect-based telehealth.

In the past, occasional face-to-face meetings of mentors and mentees in the program have fostered collaboration and innovation. In fact, the 2019 meeting, with its focus on telemental health, meant that sites were well on the way to implementing this treatment modality before the pandemic struck. This year, however, no in-person meetings could be held, so the Mentoring Program instead hosted a smaller online implementation facilitation training in partnership with the Quality Enhancement Research Initiative (QUERI) for Team-Based Behavioral Health. These mentors will work with colleagues in the next fiscal year to use this model in their work to facilitate EBP reach.

NCPTSD has a track record of quickly developing **resources in the wake of disasters** ranging from earthquakes to mass shootings. The pandemic was no different. Starting in January



The COVID-19: Resources for Managing Stress page helps individuals access resources to learn how to cope with effects of the pandemic.

2020, when cases first began to appear in the United States, we recognized there would be an acute need for resources to address the sadness, fear, loneliness and grief engendered by the crisis. We created and posted [twenty online articles and handouts](#) for Veterans, VA providers, community and business leaders and the public at large. Starting with a core set of materials, we expanded our offerings, always aiming to provide evidence-informed information that could be applied immediately and shared widely. Many of the documents were made into PDFs for easy printing, and a subset were translated into Spanish.

Beyond the stress and fear associated with infection rates and the virus itself, isolation and loneliness clearly contribute to the decay of mental and physical health. [The Women Veterans Network \(WoVeN\)](#) is a program led by the Women’s Health Sciences Division for which the primary aim is improving members’ quality of life through establishing social support among women Veterans. The program has

Selected Resources Related to the COVID-19 Pandemic

- » [Strategies for Families to Adapt to the Coronavirus \(COVID-19\) Pandemic](#)
- » [For Leaders: Helping Employees in the Aftermath of Loss](#)
- » [Treating PTSD During the COVID-19 Virus Outbreak](#)
- » [Pensamiento útil durante el brote de coronavirus \(COVID-19\)](#)
- » [Managing Health Care Workers’ Stress Associated with the COVID-19 Virus Outbreak](#)

redoubled its efforts to meet the specific needs of members during this challenging time. Prior to the COVID-19 pandemic, WoVeN had begun a small-scale implementation of online support groups. These were rapidly scaled up, with formerly in-person groups shifted completely online and a total of 53 new online groups started. In addition, WoVeN's peer leader training program, historically conducted as large in-person group trainings held two or three times a year, was shifted to monthly online trainings. These trainings offer advantages to the in-person model, including decreased cost, improved retention and creation of a more consistent pipeline of peer leaders, without any apparent decreases in the effectiveness of the training model.

Moving from peer support to self-help, the Dissemination and Training Division, long at the forefront of creating apps, developed the [COVID Coach app](#) in record time. This tool, released in mid-April 2020, is designed to help people manage stress, track their moods and access resources during the pandemic. Its programming was based on the structure and code of the popular PTSD Coach app. The app is designed to help people manage stress, track their moods and access resources during the pandemic. Two considerations informed the decision to build the app:

- » the awareness—demonstrated in [national polling](#) early in the outbreak—that the pandemic was presenting mental health challenges for people across the country

- » the many requests from providers in the field for a tool they could offer their patients

After its release, COVID Coach immediately garnered [national news coverage](#) and overwhelmingly positive user reviews. By the end of the fiscal year it had been downloaded more than 135,000 times.

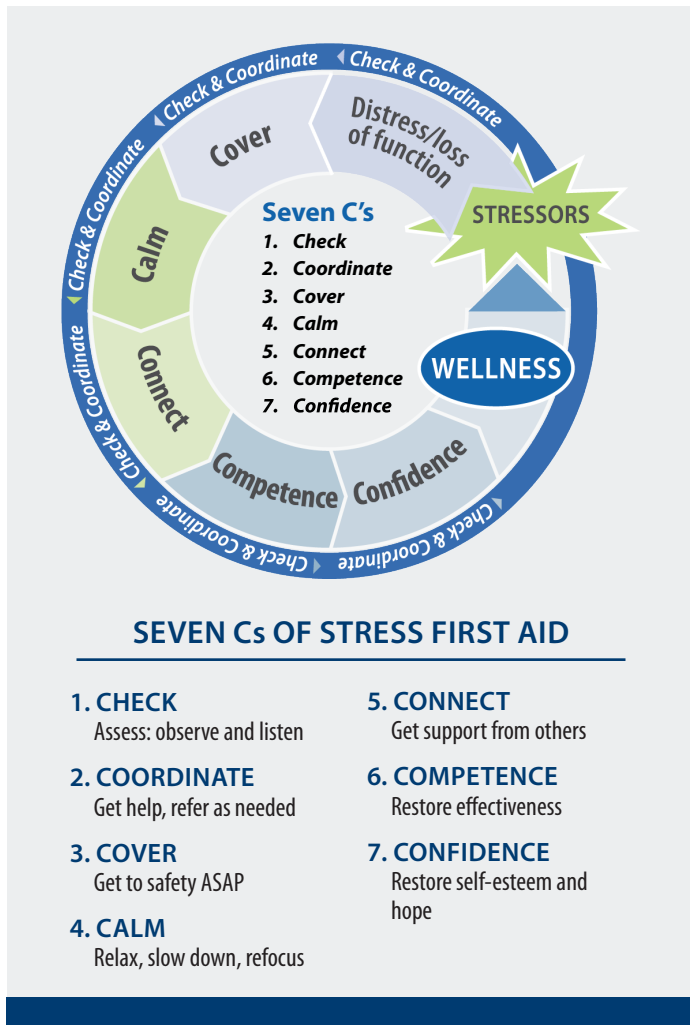
Requests from providers also played an important role in the decision to develop and disseminate materials on [Stress First Aid \(SFA\)](#). As the pandemic persisted, providers across VA told us they needed help supporting coworkers and dealing with their own stress reactions. SFA, a framework to improve recovery from stress, is a flexible, easy to implement, evidence-informed model that was originally developed for first responders and military personnel. In the context of the pandemic, NCPTSD adapted the model for mental health and medical providers. We presented the model on national calls, developed a handout for essential workers and their families and created a brief slide deck that could be used to train individuals and teams in this approach. We are continuing to create a comprehensive suite of materials that will be disseminated in FY 2021, including materials for in-person trainings (a slide deck, manual and workbook), additional tailored handouts and an online course for VA and community providers.

In addition to creating and disseminating materials on SFA, the National Center has also supported an effort to



COVID Coach App

The COVID Coach app was created to help individuals manage their response to the pandemic and learn about associated resources.



staff supplemented workshop content with a guide on transitioning from in-person to telehealth-delivered WET. As challenges arose, trainers encouraged peer-to-peer problem solving during program leader and group facilitation calls. Participants across sites shared creative tips and suggestions with each other on how to overcome barriers to care. Even in those cases when treatment was disrupted, clinicians reported that the ongoing consultation calls provided an oasis of stability during a period that was both personally and professionally challenging.

All training activities that the Dissemination and Training Division’s Practice-Based Implementation (PBI) Network has been conducting under the auspices of its **Tech into Care** initiative moved to an online-only format when the pandemic began. During the pandemic, app use has skyrocketed, so Tech into Care’s aim of training up a cadre of VA providers (“mHealth Ambassadors”) who can facilitate Veterans’ use of these tools has never been timelier. Staff across VA comprise a growing community of practice that is working to increase the uptake of mobile apps and online programs in mental health care. The PBI Network has continued its popular [continuing education lecture series](#), which is open to VA staff and community providers who are interested in integrating apps and other mHealth and telehealth modalities into care. Tech into Care also debuted an online course that provides free continuing education credits and additional [app demo videos](#) to continue to spread the reach of the mobile app portfolio.

implement and evaluate the framework in four VA sites in New Jersey, Connecticut, Minnesota and Iowa. The locations were chosen for their geographic diversity and self-identified need for strategies to support staff well-being as the pandemic was spreading across the country. For this quality improvement service project, each site will identify one or two teams that will receive up to eight sessions of training in SFA that is integrated into the teams’ usual training activities. Each team will decide what aspects of the SFA model they want to implement, based on their sites’ needs and interest.

Studying the uptake of evidence-based PTSD treatment is a key National Center activity. Our ongoing facilitated learning collaborative in WET had been designed to be fully virtual in order to avoid travel costs. This proved advantageous during the pandemic. The patient care being provided as part of the training was intended to be delivered in person, however, so when facilities moved to virtual visits, WET project

The Executive Division’s **academic detailing and facilitation project**, funded by the Office of Rural Health, works with rural VA sites across the country to increase the reach of evidence-based treatment for PTSD and discourage prescribing practices that run counter to the VA/DoD Clinical Practice Guideline. In the pandemic, in-person facilitation switched to a virtual format. There is little research on virtual facilitation and virtual academic detailing. The sites themselves had concerns about treating patients using telehealth. Nevertheless, facilitation continued, with clinics in the program seeing a 25% increase in the use of evidence-based psychotherapy. Interestingly, as treatment moved from in-person groups to individual telehealth treatment, many clinics took the opportunity to start patients on evidence-based psychotherapy rather than supportive treatment. Earlier work on the part of the PTSD Mentoring Program to include incentives for the use of EBPs—a development that facilitators made sure to mention during their outreach to

ABOUT **FACE**

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Military Sexual Trauma (MST)

If you experienced sexual assault or sexual harassment while serving in the military, healing is possible. Hear Veterans' stories and find out how treatment has changed their lives.



AboutFace's new feature on military sexual trauma.

sites—may have played a role in the increased uptake of these treatments.

Along with these initiatives, the National Center continued its efforts in PTSD awareness efforts, support for providers and researchers and development of self-help and treatment companion resources.

PTSD Awareness

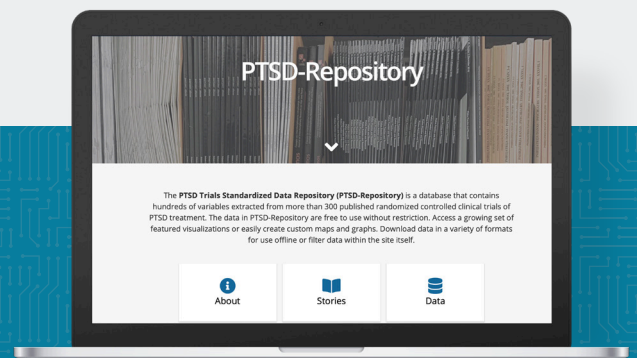
The National Center's two largest efforts in the area of increasing awareness of PTSD and PTSD treatment are [AboutFace](#) and [PTSD Awareness Month](#). This year we completed development of a new feature on MST on the AboutFace website. In keeping with the site's focus on the stories of Veterans with PTSD, the feature is built around the experiences of male and female Veterans who turned their lives around through treatment. For PTSD Awareness Month, we had our largest ever cadre of organizations and individuals sign up to partner with the National Center to host online events and share materials, reinforcing the message that effective PTSD treatments are available.

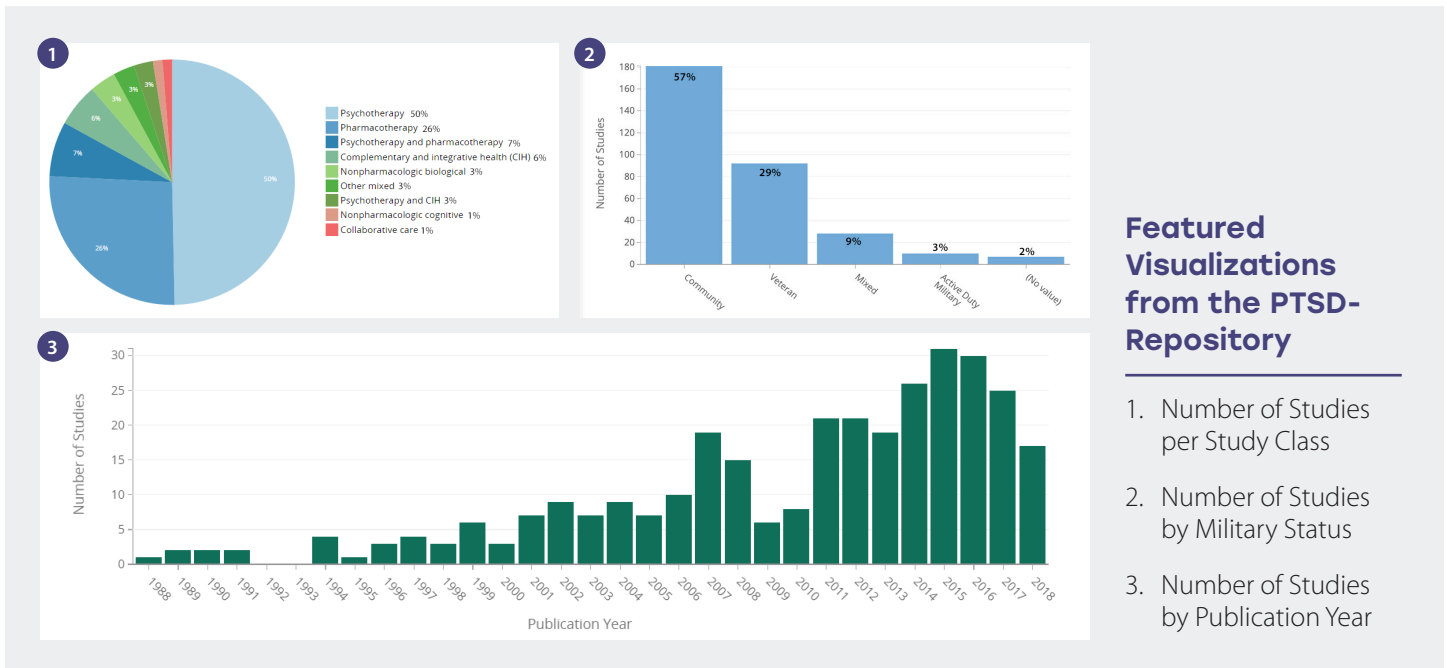
This year the National Center for PTSD launched the **PTSD-Repository**, a large publicly available database of PTSD clinical trials. The PTSD-Repository brings together data from more than 300 published studies on a wide range of treatments and will be updated annually to capture new research. The PTSD-Repository includes hundreds of variables. The information in it is wide in scope and rich in detail. The intended audience is also broad: anyone with an

interest in PTSD treatment, including not just providers, but Veterans, the general public, clinicians, researchers, educators, policymakers and the media, could learn from the PTSD-Repository. In FY 2020, National Center staff created featured stories and visualizations that provide an overview of the studies included in the PTSD-Repository and information about how investigators can use the data for their own research. More detailed stories are in development.

PTSD-Repository

The PTSD-Repository compiles data from 300+ published studies and can be used to learn more about PTSD treatment. Studies will be updated annually to capture new research.





Featured Visualizations from the PTSD-Repository

1. Number of Studies per Study Class
2. Number of Studies by Military Status
3. Number of Studies by Publication Year

Support for Providers in the Field

As described above, the PTSD Consultation and Mentoring Programs continued working with providers to promote evidence-based treatment of PTSD. Work on the redesigned **Community Provider Toolkit** continued. The revamped site was developed using a human-centered design approach that integrates the perspectives of key stakeholder groups. Meanwhile, a new podcast series for providers, with content aligned to that of the toolkit, is being recorded and will launch within the coming year.



The updated Community Provider Toolkit site.

The Dissemination and Training Division’s PBI Network began implementing a Joint Incentive Fund (JIF) quality improvement project, “Expanding Reach of VA/DoD Mobile Apps to Improve Coping and Reduce Suicide Risk.” This project is an expansion of the Tech into Care initiative, established in 2017, which works to increase the uptake of mobile apps and online programs via trainings, marketing and a VA-wide Community of Practice.

The Women’s Health Sciences Division piloted a small implementation project for RISE. The project was funded by [VHA’s Intimate Partner Violence Assistance Program](#), which, in response to participants’ positive feedback on the pilot, is interested in expanding the intervention to Veterans of all gender identities.

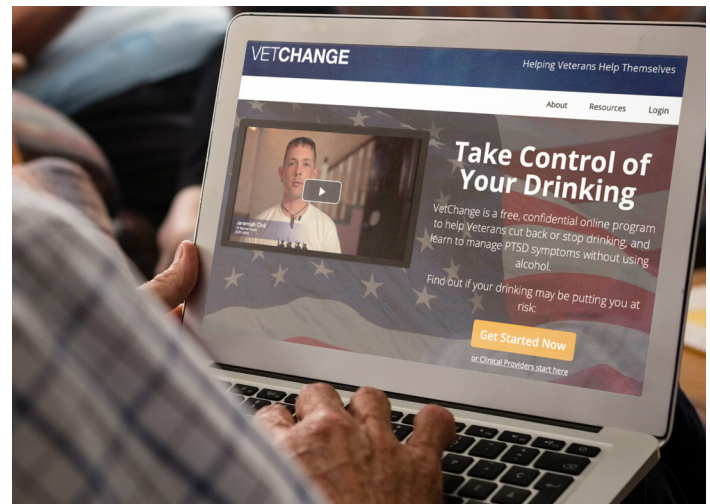
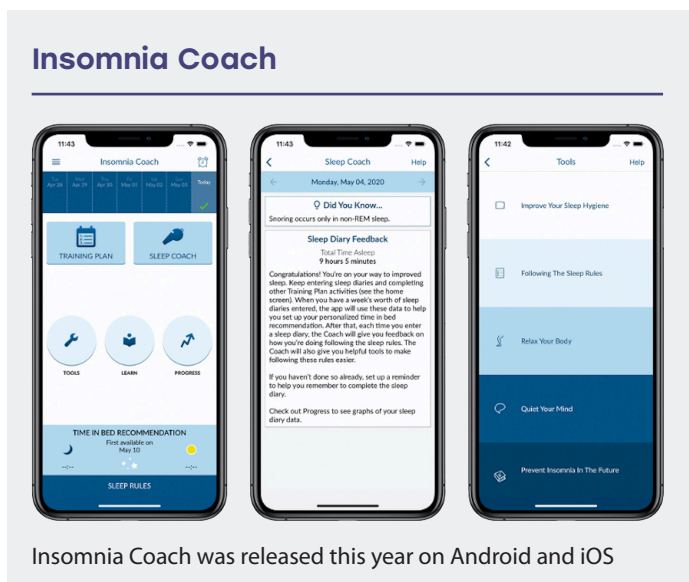
Self-Help and Treatment Companion Resources

Input from stakeholders across VA, including the Veterans Crisis Line, OMHSP and the Rocky Mountain MIRECC for Veteran Suicide Prevention informed the Dissemination and Training Division’s creation of the **Suicide Safety Planning App Module**, a digital version of the safety plan used in VA’s Safety Planning Intervention. The module gives Veterans anytime access to a high quality, personalized safety plan for suicide prevention. After extensive testing with Veterans,

subject matter experts and other stakeholders, the module went live in April 2020 as a new section in the popular PTSD Coach app. Development of a standalone Safety Plan App is underway, with an expected FY2021 release date. This year also saw the release of [Couples Coach](#), a self-help app designed to foster communication and promote problem-solving in romantic partners. **Beyond MST**, an app that fosters adaptive coping in people who have experienced military sexual trauma, continued to be refined. Finally, [Insomnia Coach](#), which is based on Cognitive Behavioral Therapy for Insomnia—one of the most effective insomnia treatments—debuted this year.

The National Center's Behavioral Science Division continues to enhance [VetChange](#), an online program that helps Veterans and Service members track their progress toward abstinence or drinking reduction goals and manage PTSD symptoms. A [research version of the site](#) now allows providers to collaborate with patients on their treatment goals and share information. The team will conduct research on this new version and also work to make it publicly available.

National Center staff and colleagues at Boston University have also partnered with Google to launch another public version of an updated VetChange program for public use. This new version allows Veterans to track their drug use in addition to their alcohol use and includes a new module designed to help users identify and manage urges to drink and use drugs more effectively. Plans are also underway to develop a version of VetChange tailored to the unique needs of women Veterans.



A collaborative research version of VetChange debuted this year.

Education Resources for Professionals

Building on the prior year's work, Executive and Behavioral Science Division staff collaborated to further refine the [Clinician-Administered PTSD Scale for DSM-5 \(CAPS-5\) Training Simulator](#), an online course that uses speech recognition and virtual patient technology to improve assessors' competence in administration of the CAPS-5. Direct feedback from users and course metrics are guiding enhancement to the current course. We are also creating a second module with a new patient; this course is designed for learners who require less guidance in administration, but still want to improve their facility with the CAPS-5. Both the updated original course and the new course will be released in early FY 2021.

The National Center wrapped up development on six new courses for the **PTSD 101 continuing education series**, covering a range of topics of interest to providers including massed delivery of EBPs, PTSD and aging and using treatment for sleep disturbances as a way to reduce PTSD symptoms and prevent suicide. The National Center also worked with the [Office of Community Care](#) on the development of a comprehensive introductory course on PTSD [for providers seeing Veterans under the auspices of the MISSION Act](#). National Center staff are also contributing their expertise on PTSD assessment to a new course on mental health examinations that is being developed by the Office of Disability Assessment.

The CAPS-5 Training Simulator new patient, Kathy.



Criterion B

Item 1 (B1): Recurrent, involuntary, and intrusive distressing memories of the traumatic event(s). Note: In children older than 6 years, repetitive play may occur in which themes or aspects of the traumatic event(s) are expressed.

In the past month, have you had any unwanted memories of (EVENT) while you were awake, so not counting dreams?(Rate 0=Absent if only during dreams)

How does it happen that you start remembering (EVENT)?

[If not clear:] *(Are these unwanted memories, or are you thinking about (EVENT) on purpose?)* (Rate 0=Absent unless perceived as involuntary and intrusive)

How much do these memories bother you?

Are you able to put them out of your mind and think about something else?

[If not clear:] *(Overall, how much of a problem is this for you? How so?)*

Circle: Distress = Minimal Clearly Present Pronounced Extreme

How often have you had these memories in the past month?

of times _____

0 Absent

1 Mild / subthreshold

2 Moderate / threshold

3 Severe / markedly elevated

4 Extreme / incapacitating

Key rating dimensions = frequency / intensity of distress

Moderate = at least 2 X month / distress clearly present, some difficulty dismissing memories

Severe = at least 2 X week / pronounced distress, considerable difficulty dismissing memories

Online Communication Resources

In FY 2020, the Resource Center staff continued to develop its new content management system to streamline the indexing and publishing of records to [PTSDpubs](#), NCPTSD’s online database of PTSD and traumatic stress literature. PTSDpubs

currently holds 63,366 records. The National Center’s new semantic software has facilitated the ability to quickly edit and update our thesaurus, providing users with more precise terminology for locating relevant research without needing to construct complex search queries. In the upcoming year the Center hopes to fully integrate auto-tagging capabilities using machine learning and to revamp its public interface.

FY 2020 Communication Resources at a Glance



WEBSITE (WWW.PTSD.VA.GOV)
8.5 million views



MOBILE APPS
676,480 downloads of 19 apps



PTSD MONTHLY UPDATE NEWSLETTER
371,651 subscribers



FACEBOOK
157,662 likes



PTSD RESEARCH QUARTERLY
58,872 subscribers



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ABOUT THE NATIONAL CENTER FOR PTSD



Quick Facts



The National Center for PTSD was formed in 1989.



It has seven Divisions across the United States, each with a distinct area of focus.



The National Center for PTSD manages the largest PTSD brain bank in the world.

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 (CoE) 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 National Center as a consortium of five Divisions.

Organization

The National Center now consists of seven VA academic CoEs 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 NCPTSD mission through specific areas of focus.

The National Center for PTSD is an integral and valued component of VA's OMHSP, which is part of VHA. OMHSP and NCPTSD receive budget support from VA, although NCPTSD also leverages this support through successful competition for extramural research funding.

LEADERSHIP IN 2020



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Expert Scientific Panel

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APPENDIX A

ACRONYMS USED IN APPENDIX B

BEAMS

Boston Early Adversity and Mortality Study

BRIDGES

Building Re-Integration Dreams and Goals to Execution and Success

BSD

Behavioral Science Division

BCOC

Community-Based Outpatient Clinic

CBT

Cognitive-Behavioral Therapy

CDW

Corporate Data Warehouse

CMARRS

Center for Mobile Applications Research Resources and Services

CND

Clinical Neurosciences Division

CoE

Center of Excellence

CPG

Clinical Practice Guideline

CPT

Cognitive Processing Therapy

COVID-19

Coronavirus Disease 2019

CSP

Cooperative Studies Program

CRAFT

Community Reinforcement and Family Training

DNA

Deoxyribonucleic Acid

DoD

Department of Defense

EBP

Evidence-Based Psychotherapy

EEG

Electroencephalogram

EMA

Ecological Momentary Assessment

ENIGMA

Enhancing Neuroimaging Genetics through Meta-Analysis

fMRI

Functional Magnetic Resonance Imaging

FY

Fiscal Year

GWAS

Genome-Wide Association Studies

IPV

Intimate Partner Violence

LGBT

Lesbian, Gay, Bisexual and Transgender

LIGHT

Longitudinal Investigation of Gender, Health and Trauma

MBC

Measurement-Based Care

MDD

Major Depressive Disorder

MISSION

Maintaining Systems and Strengthening Integrated Outside Networks

mRNA

Messenger RNA

mTBI

mild Traumatic Brain Injury

MRI

Magnetic Resonance Imaging

MST

Military Sexual Trauma

MVP

Million Veteran Program

NCPS

National Center for Patient Safety

NCPTSD

National Center for PTSD

NDHS

Neurocognition Deployment Health Study

NEPEC

Northeast Program Evaluation Center

NHRVS

National Health and Resilience in Veterans Study

NPY

Neuropeptide Y

OMHSP

Office of Mental Health and Suicide Prevention

PCL-5

PTSD Checklist

Appendix A: Acronyms used in Appendix B

PCT PTSD Clinical Team	RNA Ribonucleic Acid	VA Department of Veterans Affairs
PE Prolonged Exposure	RRTP Residential Rehabilitation Treatment Program	Project VALOR Veterans After-Discharge Longitudinal Registry
PET Positron Emission Tomography	SERV Survey of Returning Veterans	VHA Veterans Health Administration
PGC Psychiatric Genomics Consortium	SSRI Selective Serotonin Reuptake Inhibitor	VNS Vagus Nerve Stimulation
PHQ-9 Patient Health Questionnaire	STAIR Skills Training in Affective and Interpersonal Regulation	VOA Veterans Outcome Assessment
PTSD Posttraumatic Stress Disorder	STRONG STAR South Texas Research Organizational Network Guiding Studies on Trauma and Resilience	Web-PE Web Version of Prolonged Exposure
PTSD-Repository PTSD Trials Standardized Database Repository	TBI Traumatic Brain Injury	WET Written Exposure Therapy
REACH VET Recovery Engagement and Coordination for Health – Veterans Enhanced Treatment	TMS Transcranial Magnetic Stimulation	WoVeN Women Veterans Network
RISE Recovering from IPV through Strength and Empowerment	TRACTS Translational Research Center for Traumatic Brain Injury and Stress Disorders	

APPENDIX B

RESEARCH NARRATIVES BY DIVISION

Behavioral Science Division

The Behavioral Science Division (BSD) in Boston, Massachusetts, conducts research on life adjustment after military deployment and other traumatic stressors, methods to assess trauma and posttraumatic stress disorder (PTSD), innovative approaches to clinical intervention and treatment delivery and the potential neurobiological and genomic basis of PTSD and its comorbidities.

BIOMARKERS

The Division has an active portfolio of genetic and neuroimaging studies involving collaborations with investigators in the [Translational Research Center for Traumatic Brain Injury and Stress Disorders \(TRACTS\)](#), the [Department of Veterans Affairs \(VA\) National PTSD Brain Bank](#), the Million Veteran Program, the Psychiatric Genomics Consortium (PGC), Brigham and Women's Hospital and the PTSD Working Group of the ENIGMA (Enhancing Neuroimaging Genetics through Meta-Analysis) Consortium. During FY 2020, Division investigators have focused on the role of inflammation and oxidative stress in the biology of PTSD, and on the role of PTSD and other trauma-associated symptoms in accelerated aging. This has included publication of an epigenome wide association study (deoxyribonucleic acid (DNA) methylation) of PTSD across blood and brain tissue which yielded replicable findings with PGC collaborators.

Ongoing studies that examine PTSD and blast-related traumatic brain injury (TBI) in Veterans of Iraq and Afghanistan war zones aim to clarify the relative contribution of mild TBI (mTBI) and psychiatric conditions to deficits in current functioning and health outcomes. Investigators are now in the process of expanding this work to an older longitudinal cohort to study how psychiatric stress, genetic risk and peripheral biomarkers of inflammation, including as measured via small molecule array technology, are associated with subsequent health decline and neurodegeneration, including as evidenced in magnetic resonance spectroscopy.

The biomarkers examined by Division studies include brain features measured by neuroimaging, peripheral markers of inflammation and metabolic pathology, as well as specific genes, and polygenic risk scores. Also under investigation are genomic biomarkers drawn from both blood and post-mortem brain tissue, including epigenome wide-DNA methylation levels and transcriptome-wide messenger ribonucleic acid (mRNA; i.e., gene expression).

During FY 2020, Division researchers continued to use functional (resting state and task-based) and structural magnetic resonance imaging (MRI) to identify neural circuitry involved in PTSD. This includes work identifying neuroimaging and neurocognitive subtypes of PTSD and determining how these subtypes predict recovery from PTSD. Other neuroimaging work is examining how brain responses to reward and punishment can reveal circuits impacted by PTSD. They have also used magnetic resonance spectroscopy to examine neurodegeneration and neuroinflammation. Recent work also includes examining neuroimaging metrics to understand central markers of metabolic health such as cerebrovascular dysfunction in mTBI and PTSD as well as genetic and environmental moderators of these relationships. Investigators are also in the process of expanding longitudinal work to examine predictors of brain morphology and function.

TREATMENT EFFICIENCY, EFFECTIVENESS AND ENGAGEMENT

The Division's pioneering research on treatments for PTSD is focused on overcoming barriers to seeking care, reducing dropout and increasing the efficiency of care delivery. One example is the internet-based treatment [VetChange](#), which was originally designed for Iraq and Afghanistan combat Veterans who report both risky use of alcohol and PTSD-related distress. A [mobile app](#) that has key VetChange features was developed recently, in conjunction with the Dissemination and Training Division, and efforts are currently underway to integrate the mobile app and web versions to increase mobile access for real-time intervention support. In addition, a major extension of the VetChange web intervention allows for its seamless integration with in-person and virtual care with VA providers.

Other Division efforts include developing and testing efficient, therapist-delivered interventions or treatment extenders, with the goals

of finding approaches that require less professional staff time and that are easier for patients to complete. A prime example is Written Exposure Therapy (WET), a five-session exposure-based treatment for PTSD that has been shown to be highly effective with non-Veteran patients. One study comparing WET with Cognitive Processing Therapy (CPT) for PTSD among active duty Service members just finished and data analyses are in progress. Another ongoing VA-funded study is examining the efficacy of WET in comparison to Prolonged Exposure (PE) with Veterans. An implementation study is also being conducted in which VA mental health providers are being trained to deliver WET.

Research on factors that link PTSD with aggression toward intimate partners has led to the development and evaluation of an intervention, Strength at Home, that reduces or prevents aggression within at-risk military and Veteran families. Positive clinical trials have been published, and the intervention continues to be implemented across the VA health care system, with full implementation expected by summer 2021, as well as on several military installations. A randomized controlled trial of couples Strength at Home on a military installation is near completion, and a follow-up study to examine sexual aggression outcomes and suicidality was recently funded. A recent pilot study in an underserved urban civilian setting also demonstrated promising results in reducing not only intimate partner violence, but also PTSD and alcohol use problems. Another pilot study of the program for civilians is now in progress.

Division investigators have recently completed a small randomized controlled trial examining the impact of a two-session family intervention to complement the delivery of CPT or PE. The goals of the intervention are to increase family members' support for and understanding of trauma-focused treatment and to reduce levels of family accommodation around PTSD symptoms. Initial results from this small trial indicated a positive impact of the family intervention on Veterans' treatment retention, and the investigators are currently pursuing funding for a larger study.

In the area of complementary interventions, a continuing five-year study examining the impact of two 12-week group treatments on chronic pain in Gulf War Illness has converted to remote delivery in response to coronavirus disease (COVID-19) restrictions. A one-year pilot study is examining the same interventions for older, sedentary, trauma-exposed Veterans, and is the process of converting to telehealth delivery. In both studies, Tai Chi, a mind-body exercise that has been associated with physical and mental health benefits, is compared with a wellness promotion intervention that is based on an existing VA model of care entitled Whole Health.

Division investigators are partnering with researchers in the Women's Health Sciences Division to examine the effects of trauma and other high-impact stressors on PTSD and related sequelae such as substance use disorders among lesbian, gay, bisexual and transgender (LGBT) Veterans. This research aims to develop and refine conceptual models of trauma, PTSD and related impairment to inform research, treatment development and treatment planning for LGBT Veterans.

CARE DELIVERY, MODELS OF CARE AND SYSTEM FACTORS

Division investigators are examining access to VA PTSD care. Initial results suggest that only 60% of Veterans initially screened for PTSD in primary care are referred to VA mental health care, with women and minorities being more likely to be initially referred to VA care than their White male counterparts. However, primary care clinics located in rural areas are significantly less likely to refer Veterans to VA follow-up care than urban clinics, across gender and race.

Division investigators (in partnership with the Women's Division) recently received pilot funding for a study examining barriers to and facilitators of family involvement in PTSD in VA. The researchers will conduct qualitative interviews with clinicians and administrators at 10 Veterans Health Administration (VHA) facilities, half of which are performing particularly well with regard to family-inclusive PTSD care and half of which are engaging in lower rates of involvement. Interviews will allow for the identification and understanding of key determinants of family involvement and the process of implementing family involvement. Interview data will be used to inform discussions with a Stakeholder Advisory Board regarding promising implementation strategies for future testing, and a list of recommendations for providers/facilities will be generated.

PTSD AND SUICIDE

Division researchers are actively contributing to knowledge about PTSD and suicide, particularly in the domain of identifying risk factors. One recently completed project examined patterns of change in suicidal ideation over time among active duty personnel following discharge from suicide risk-related psychiatric hospitalization. Results identified discrete groups that differed in patterns of change in suicidal ideation over time and risk for subsequent suicide attempts.

In another project, in collaboration with the South Texas Research Organizational Network Guiding Studies on Trauma and Resilience (STRONG STAR) Consortium, Division investigators are continuing to test a modified version of WET for Suicide with a sample of Army soldiers and Veterans with PTSD symptoms who have been hospitalized for suicide risk. The study seeks to determine whether treating PTSD symptoms reduces the likelihood of future suicidal behavior.

OTHER IMPORTANT RESEARCH

The Division has a great deal of expertise in longitudinal, observational studies that inform the understanding of the course of PTSD and associated conditions over time. Division researchers are working on two large prospective cohort studies that collect information from strategically selected Veteran and Service member groups. The first, [Project VALOR](#) (Veterans After-Discharge Longitudinal Registry), has been working with a registry of 1,649 male and female combat Veterans who became users of VA services after 2002. The project collects data about health outcomes associated with PTSD, supplemented by clinical information from VA electronic medical records. The primary aim of Project VALOR was to examine the long-term course of PTSD symptoms. Recently published results revealed symptom course is most appropriately characterized by substantial heterogeneity. On average, Veterans experienced initial PTSD symptom severity above the diagnostic threshold following trauma exposure, which was initially stable over time and later began to gradually improve. Although results indicated symptoms eventually began to decline, this effect was gradual; most Veterans continued to meet or exceed the PTSD provisional diagnostic threshold long after trauma exposure. Predictors of symptom course included Hispanic ethnicity, postdeployment social support and cooccurring psychopathology. Findings highlight the heterogeneous nature of PTSD symptom course, the urgent need to ensure access to evidence-based care and to improve available treatments.

The second large investigation, the [Neurocognition Deployment Health Study \(NDHS\)](#), began data collection at the outset of the Iraq War in 2003. Military personnel were assessed before deployment and at several intervals afterward including a long-term follow-up, making this the first prospective longitudinal study to address the psychological impact of war zone stress. The study design allows examination of long-term emotional and neuropsychological outcomes, as well as health-related quality of life and occupational functioning. Papers have described PTSD outcomes; longitudinal neuropsychological outcomes; and relationships among emotional distress, including PTSD, TBI and neuropsychological outcomes. A related study examining family mental health outcomes had documented poorer family relationships and partner distress as a function of Service member/Veteran mental health concerns. A manuscript describing child outcomes as a function of parental PTSD and depression is under review.

Division researchers recently launched the Boston Early Adversity and Mortality Study (BEAMS), which aims to advance research on how early life conditions affect later-life health outcomes, including Alzheimer's disease and related dementias, cardiometabolic disease and mortality risk. The BEAMS team is conducting novel linkages to multiple large-scale administrative databases to gather prospective information on the early-life health, family and environmental hazards for participants and siblings from three longitudinal cohorts of men who have been followed since 1938 or 1961 to the present day. Inclusion of siblings allows the researchers to extend the cohorts to include women and allow within-family comparisons. Using the cradle-to-grave dataset created from this project, the BEAMS team will examine prospective associations linking early adversities in the psychosocial, socioeconomic and environmental domains to health outcomes in old age.

Division investigators have partnered with Boston VA Research Institute, IBM Watson, Boston University School of Public Health, Massachusetts Veterans Epidemiology Research and Information Center and the Center for Healthcare Organization and Implementation Research to conduct research on the impact of COVID-19 on opioid use disorder treatment. This research will examine rapidly evolving trends regarding treatment access and adverse outcomes among Veteran patients, and identify vulnerable subgroups, including patients with PTSD, using national medical record and administrative claims data. This work will inform policy and best-practice recommendations to improve care delivery in the COVID-19 and post-pandemic era.

Finally, one ongoing project is examining the feasibility of using automated facial affect coding software for PTSD diagnostic assessment. This study is gathering facial affect coding during a standardized trauma prompt and diagnostic assessment. Researchers will examine dynamic changes in distinct affect domains in response to the trauma prompt to examine diagnostic utility.

Clinical Neurosciences Division

The Clinical Neurosciences Division (CND) in West Haven, Connecticut, focuses on research to establish novel treatments, uncover biomarkers of disease mechanisms related to traumatic stress and investigate paradigms of risk and resilience. By leveraging an interdisciplinary approach that includes genetics, neuroimaging, treatment interventions and epidemiological studies, the CND maximizes efforts to translate discoveries into therapeutic targets for PTSD and associated comorbid conditions.

BIOMARKERS

Neurogenomics and neuroimaging guide biomarker development, including molecular, biochemical, structural and functional approaches to investigate stress-related phenotypes and to better understand the sequence of pathological events associated

with posttraumatic stress. Integrating multiple markers into a comprehensive panel, combined with behavioral data, enables faster identification of putative biomarkers, biomarker validation, earlier detection of at-risk individuals and informed decisions regarding treatment planning.

Genome-wide association studies (GWAS) are used to screen for genetic variations across large numbers of research participants with goal of uncovering markers associated with complex disease. CND researchers conducted a GWAS analysis of 166,643 United States Veterans from the Million Veteran Program (MVP) to identify genetic risk factors relevant to intrusive reexperiencing of trauma, the most characteristic symptom cluster of PTSD. This work, published in *Nature Neuroscience*, identified eight distinct regions containing risk variants for intrusive reexperiencing symptoms. Three highly significant regions include: 1) CAMKV, a synaptic protein crucial for dendritic spine maintenance; 2) chromosome 17, a region closest to KANSL1 (a chromatin regulator influencing gene expression and deoxyribonucleic acid (DNA) packaging in chromosomes) but also within a region that includes CRHR1 (the gene encoding Corticotropin Releasing Hormone Receptor 1); and 3) TCF4, a gene associated with schizophrenia and other psychiatric traits. A larger study considering all three PTSD symptom clusters, reexperiencing, hyperarousal and avoidance, is underway.

The [VA National PTSD Brain Bank](#) studies postmortem brain tissue of PTSD and major depressive disorder (MDD) donors to characterize gene expression associated with stress and suicide. This year, researchers completed work on the largest postmortem ribonucleic acid (RNA) transcriptomic study of PTSD to date. Results published in *Nature Neuroscience*, identified a highly connected set of interneuron transcripts within the most significant gene network associated with PTSD. Integration of this data with genotype data from the MVP project, identified the interneuron synaptic gene ELFN1 and a proinflammatory marker, UBA7, as conferring significant genetic liability for PTSD. DNA methylation profiles identified several other significant biomarkers for PTSD including HDAC4 and a transcriptomic sexual dimorphism, which could contribute to a higher incidence of PTSD in women. Significant divergence in molecular profiles of subjects with PTSD and MDD was observed despite high comorbidity of these disorders. These functional genomic studies link heritability for PTSD with disease state and are critical for identifying the neurobiological underpinnings of PTSD.

The CND uses multimodal neuroimaging, such as positron emission tomography (PET), magnetic resonance imaging (MRI) and spectroscopy, to investigate functional activation patterns, concentrations of neurotransmitters, the structure and shape of brain regions, brain network connections and energy demands throughout the brain. This work includes developing medically informed bioengineering approaches such as machine learning and artificial intelligence. This year, CND researchers addressed a major limitation in the field of network connectivity mapping by establishing a whole-brain connectivity atlas. This PTSD brain connectome hierarchically maps brain network architecture and enables novel machine learning and imaging methods related to behavioral outcomes, with the goal of discovering a PTSD-specific fingerprint.

CND researchers also established a robust and reproducible brain connectome fingerprint to predict treatment response of traditional and rapid acting antidepressants using longitudinal pharmaco-imaging challenges. Data suggested that both slow-acting and rapid-acting antidepressants, such as sertraline and ketamine, exert therapeutic effects by reducing internal connectivity within primary brain cortices and by increasing connectivity between executive networks and the rest of the brain.

CND researchers used spectroscopy to measure glutamate neurotransmitters and synaptic strength, as well as to determine cortical glial function. White matter microstructural alterations were uncovered in PTSD patients, including higher white-matter integrity in the inferior frontal-occipital fasciculus but lower integrity in the genu of corpus callosum. These findings are consistent with decreased association and cognition, impairments in emotion regulation and abnormal visual processing.

CND researchers previously demonstrated that Veterans have widespread reduction in cortical thickness corresponding to PTSD and severity of combat exposure. New findings revealed that antidepressant treatment increases cortical thickness, suggesting that successful treatment may reverse this abnormality.

PET researchers examined a putative marker of brain cortisol regulation with in vivo imaging of 11b-HSD1 (an enzyme that generates cortisol in the brain) and assessments of PTSD severity, threat and loss. 11b-HSD1 availability in a prefrontal-limbic circuit was significantly higher in the PTSD group compared to matched controls. However, lower prefrontal-limbic 11b-HSD1 availability was related to greater overall severity, and greater threat and loss symptoms, within the PTSD group. These findings may represent neuroadaptation of brain cortisol in individuals with chronic or more severe PTSD symptoms.

PET researchers are developing a novel ligand [¹¹C]MK-3168 to evaluate the endocannabinoid system in stress response. The endocannabinoid system is instrumental in extinction of aversive memories, providing a novel therapeutic target for PTSD. CND researchers are also evaluating the role of the endocannabinoid system in childhood trauma.

Investigators also use electroencephalogram (EEG) to evaluate changes in electrical activity in the brain pre/post pharmacotherapy treatment. Using genomic data and machine learning methods, CNS researchers are working to establish an analytic biomarker pipeline to predict ketamine treatment response via EEG patterns, with promising results from validation samples.

Studies using MRI and computational modeling to examine PTSD related brain dysfunction include: 1) a drug challenge to derive specific biomarkers of ketamine treatment via stimulation of the AMPAR neuroreceptor and to investigate how depression, PTSD and suicidality are related to these biomarkers and how they co-occur; 2) a computational model to understand how cumulative stressful experiences may contribute to PTSD and to identify patient sub-groups susceptible to PTSD; 3) a study using novel pupillary biosensors to examine stress arousal via neuron firing in the locus coeruleus (i.e. this brain region controls changes in the pupil of the eye). Data revealed that the pupillary biomarker conveys different information about brain state depending on stress level and that acetylcholine and norepinephrine interact to produce brain-wide dynamics.

PTSD AND SUICIDE

CNS researchers are investigating the use of pharmacological agents that have an acute antidepressant effect as a strategy to prevent suicide among individuals with PTSD. This work includes several projects that evaluate the anti-suicidal properties of ketamine in both treatment-resistant PTSD and depression and how neural alterations and changes in synaptic connectivity pre/post ketamine treatment, may underlie behavioral changes. Other work includes investigation of suicide risk factors among Veterans who undergo VA specialty care in PTSD clinical teams and PTSD residential treatment programs.

Data from the National Health and Resilience in Veterans Study ([NHRVS](#)), which surveyed a nationally representative sample of U.S. Veterans, demonstrated that only 36% of suicidal Veterans are currently engaged in mental health treatment. Younger age, female gender, current depression, lifetime suicide attempt history, number of traumas and medical problems were associated with increased mental health treatment. Mistrust of mental health professionals and fear that mental health treatment may harm one's reputation were associated with decreased treatment. These findings underscore the importance of multi-modal suicide prevention and engagement efforts that target need-based factors and perceptions of mental health stigma in suicidal Veterans.

NHRVS researchers also found that combat Veterans who experienced childhood sexual abuse were nearly three times more likely to contemplate suicide relative to those without such histories. Childhood sexual abuse also independently predicted lifetime suicide attempts. Further, combat Veterans who witnessed others be killed or wounded in combat had substantially increased risk for suicidal thinking and attempts, even after controlling for psychiatric histories. Collectively, these findings highlight the importance of detailed trauma history assessments in suicide prevention and treatment efforts.

NHRVS researchers employed a novel 'symptomics' approach to identify individual PTSD symptoms associated with suicidal ideation in Veterans. Trouble experiencing positive feelings; negative beliefs about oneself, others or the world; and irritability/aggression were most strongly associated with suicidal ideation. These findings underscore the importance of considering individual PTSD symptoms in assessment, monitoring and treatment approaches for PTSD.

TREATMENT EFFICIENCY, EFFECTIVENESS AND ENGAGEMENT

CNS researchers completed the largest known efficacy study of repeated doses of ketamine in Veterans and active duty Service members diagnosed with treatment resistant PTSD. Data analyses and results are anticipated by the end of 2020. Researchers also demonstrated a new approach to extend the therapeutic effects of ketamine by pretreatment with the immunosuppressant sirolimus, which may prolong the efficacy of a single dose of ketamine for at least 2 weeks.

CNS researchers are also conducting the following treatment based trials: 1) a 7-day trial of PE enhanced with a single infusion of ketamine; 2) a project examining Mindfulness Based Stress Reduction for anger and aggression in Veterans with PTSD; 3) a study examining non-suicidal self-harm in PTSD using ecological momentary assessment (EMA); 4) a trial of buprenorphine and CPT for patients diagnosed with PTSD and opiate use disorder; 5) a study that examines the effect of WET in Veterans diagnosed with PTSD and comorbid substance use disorder; 6) a study examining the potential polysomnographic signature of suicidality in PTSD; and 7) studies of the neural and anti-suicidal effects of serotonin-releasing agent 3,4-methylenedioxy-methamphetamine (MDMA) in individuals with PTSD and obsessive compulsive disorder.

CNS is also leading Cooperative Studies Program study #2016 conducted at 34 VA medical centers. This VA Cooperative Study compares three commonly prescribed pharmacotherapies for insomnia, trazodone, gabapentin and eszopiclone. Insomnia is among the most common (>80%) persisting symptom of PTSD among patients who are actively engaged in other behavioral and pharmacologic treatments. Currently, there are no medications approved for the treatment of the PTSD-related insomnia.

Dissemination and Training Division

The Dissemination and Training Division in Palo Alto, California, conducts research on patient needs and preferences, implementation science, novel and adapted treatments that attend to patient preferences and technology-based delivery of treatment.

TREATMENT EFFICIENCY, EFFECTIVENESS, AND ENGAGEMENT

A key focus of Division researchers is increasing patient engagement into care. An ongoing study is developing a brief measure of patient characteristics associated with effective engagement in care, which will guide identification of the type and amount of service resources needed to engage Veterans. A second study is focusing on racial and ethnic minority patients who have experienced disparities in trauma exposure and mental health care. The project will develop a screening tool that identifies patients at risk for subsequent mental health problems and identify resources tailored to particular patient problems and needs to increase engagement into care.

Several ongoing studies are assessing the ability of telehealth and web- and mobile-based technologies to increase Veteran access to mental health care and to improve outcomes. Telemental health services to the home are expected to increase patient engagement and access, and recently with the COVID-19 pandemic, this service has seen a dramatic increase in use. A study is underway that compares two treatments delivered to women Veterans in their homes via video teleconference: Skills Training in Affective and Interpersonal Regulation (STAIR) and Present-Centered Therapy. The goals of the study are to assess the relative effectiveness of these treatments and to identify barriers and facilitators for using video-to-home delivery of treatment.

Regarding web-based interventions, in collaboration with researchers from the Philadelphia and Minneapolis VAs, the Division has recently launched a study to test a web-based intervention developed by the National Center called Community Reinforcement and Family Training ([VA CRAFT](#)) for PTSD. This program is coupled with telephone coaching to help spouses and intimate partners of Veterans with untreated PTSD encourage their Veteran to seek mental health care. A web-based version of PE, called Web-PE, is being tested in reducing symptoms of PTSD in military personnel and Veterans. Web-PE is delivered with therapist assistance and could have significant potential to increase the reach of PE to those who cannot otherwise access traditional face-to-face care. Web-based interventions with support from VA peer support specialists are also being tested to see if such support increases adherence to online treatment. This includes a trial that is nearing completion that compares patient engagement and outcomes from using [Moving Forward](#), a VA online version of Problem Solving Therapy, with and without peer support. Finally, a noninferiority trial is evaluating the impact of WET when delivered online with peer coach support, comparing written with verbal imaginal exposure among Veterans.

Division investigators are also studying mobile mental health apps. This includes a two-site study testing the efficacy of [PTSD Coach](#) with clinician support compared with existing treatment for reducing PTSD symptoms in Veterans utilizing primary care services. It also includes a recently completed mobile cognitive control training program for the treatment of alcohol use disorder and PTSD to determine the efficacy of a novel neurocognitive intervention for improving recovery outcomes.

Several pilot studies of mobile apps have been launched or are wrapping up, including a study of [Insomnia Coach](#), an app intended for Veterans to self-manage insomnia symptoms; a study of [Couples Coach](#); two studies of [Mindfulness Coach](#) in Veterans with PTSD and as an adjunct for Veterans receiving other types of medical care, a study of a self-guided exposure therapy-based app for PTSD comparing the outcomes of those receiving versus not receiving support from a person providing reminders and reinforcement for use via the app. We are also launching two studies (one with Veteran mothers and one with VA healthcare providers) of [COVID Coach](#), a recently released app designed to help improve self-care and overall mental health during the pandemic.

In addition, to these research studies, investigators have launched a handful of evaluations of the Division's publicly available mobile apps to better understand their reach, reception, use and impact to inform their continued improvement. Finally, the Division is helping to advance the mobile and technology research of VA investigators around the nation through its Center for Mobile Applications Research Resources and Services (CMARRS).

CARE DELIVERY, MODELS OF CARE AND SYSTEM FACTORS

Division researchers rapidly produced a series of papers to inform adaption of mental health care delivery during the COVID-19 pandemic. These different papers review the mental health effects of pandemics, detail lessons learned from VA's expansion of telemental health services in response to COVID-19, describe how a psychotherapy training program was modified during the pandemic, suggest approaches for treating pandemic-related moral distress and outline best practices for deciding when to use or not use trauma-focused psychotherapies for PTSD with people affected by the pandemic.

Efforts are continuing on improving patient access to care by using participatory systems dynamics modeling, a collaborative quality improvement approach in which stakeholders identify specific system problems, use computer modeling to compare the likely outcomes of different potential solutions and then select an optimal solution to implement. These models were recently updated to address factors related to COVID-19. Preliminary pilot data indicate this method substantially improved access to evidence-based psychotherapy at two facilities. Technical Assistance Specialists in the VA Office of Mental Health and Suicide Prevention (OMHSP) have been trained in this approach and are partnering with the National Center in two randomized controlled trials testing the effects of participatory systems dynamics modeling on increasing provision of evidence-based treatments.

IMPLEMENTATION

A study evaluating how to simplify assessment of the quality of delivery of cognitive-behavioral therapy (CBT) for PTSD, depression and anxiety disorders is underway. A second ongoing study is evaluating competing strategies intended to enhance and sustain the delivery of CPT; one strategy emphasizes fidelity to the protocol through expert consultation and online resources, and the other focuses on using continuous quality-improvement strategies to improve fit and to address barriers to treatment delivery.

Investigators involved in the evaluation of the national rollout for PE therapy for PTSD are studying the effectiveness of different virtual training models on therapist delivery of PE. Another study compares methods of assessing treatment quality and fidelity, two important implementation outcomes for CBTs, including CPT. National Center staff are also supporting VA's efforts to implement measurement-based care (MBC).

In collaboration with the Minneapolis VA, investigators at two National Center Divisions completed a study which found that external facilitation guided by an implementation toolkit has increased use of evidence-based psychotherapy (EBP) in two VA PTSD clinics relative to six control sites. A larger trial involving toolkit-guided facilitation is underway in clinics in eight military bases. The study will assess whether a tailored approach combining an implementation toolkit, a guide for matching solutions to local problems and support from an external facilitator increases the use of PE more than does standard provider training alone.

PTSD AND SUICIDE

Recent research has identified insomnia as a risk factor for suicide. Division investigators have developed innovative ways to accurately monitor sleep without requiring Veterans to come to a clinic-based sleep lab. A new study leverages this technology to conduct in-home sleep monitoring to detect suicide risk in Veterans who have other risk factors for suicide.

Division staff have developed participatory system dynamics modeling tools that clinic teams can use to optimize and allocate staff resources to different clinical activities. These tools have been expanded and employed to suicide management to help teams ensure effective management of Veteran patients at high risk for suicide, without compromising overall access to or quality of care.

Evaluation Division

The Evaluation Division in West Haven, Connecticut, supports the National Center's mission through a programmatic link with VA's [Northeast Program Evaluation Center \(NEPEC\)](#). NEPEC has broad responsibilities within the VA OMHSP to evaluate their treatment programs, including those for specialized treatment of PTSD. Although researchers are primarily engaged in evaluation research, they also work on independent research projects related to the treatment of PTSD.

TREATMENT EFFICIENCY, EFFECTIVENESS, AND ENGAGEMENT

NEPEC has continued to monitor and assess PTSD treatment at VA. The monitoring includes both residential and outpatient specialty treatment programs, as well as PTSD treatment by trained providers not working within one of the specialty programs. The Evaluation Division also monitors efforts to improve psychotropic medication prescribing practices at the VHA. Two of the measures in this initiative are the use of antipsychotics to treat PTSD and the use of benzodiazepines without an appropriate diagnosis or medical indication.

In FY 2020, the PTSD evaluation launched a transition from paper and pencil form collection to the utilization of new templates in the electronic medical records system. By the end of FY 2021, NEPEC expects to collect all the evaluation and monitoring data directly from the Corporate Data Warehouse (CDW). The new templates collect data from both the outpatient PTSD Clinical Teams (PCTs) and the PTSD Domiciliaries. This transition to collecting data via electronic and administrative means reduces burden on both Veterans and providers.

Additionally, the PTSD specialty programs (both outpatient and residential) participate in Measurement Based Care (MBC) and led the adoption of this new initiative. A significant number of programs are now utilizing the PTSD Checklist (PCL-5) to assess and track Veteran-level symptoms. This shared approach of consistent measure utilization across sites and programs enables enhanced evaluation; specifically, the PTSD Evaluation Team at NEPEC is in the process of creating a newly designed long-term evaluation of PTSD treatment and recovery that follows Veterans across multiple years.

The Clay Hunt Suicide Prevention Act of 2016 required that VA employ an outside independent evaluator to determine the effectiveness, cost effectiveness and satisfaction with VA mental health programs. Evaluation Division staff served as the primary liaison to the Clay Hunt team, providing data, methodological consultation and contextual interpretation for findings of the evaluation studies. The third annual report of these findings concluded that both outpatient specialized PTSD care and residential PTSD services are effective at reducing symptoms and improving functioning in the first 90 days of treatment, that they are cost effective and that Veterans are largely satisfied with services. The evaluation studies will continue annually, with a more in-depth look at the role of concurrent mental health treatment and comorbidity as a focus of evaluation in the coming year.

Several Division investigators are using administrative data to explore treatment patterns and outcomes of PTSD care. Studies of medication use for the treatment of PTSD, as well as on correlates of self-reported symptom severity scores over time, have been published. Research continues on PTSD health services, pain management and the role of pain in the treatment of PTSD, as well as on sex differences in the health of returning Veterans. In the upcoming year the Division will further examine the role of pain in specialized PTSD treatment and in the treatment of comorbid PTSD and pain, and will continue publishing results from the Survey of Returning Veterans (SERV) interviews.

During the past year, NEPEC staff, in collaboration with others, published a manuscript on courses of suicidal ideation among Veterans receiving PTSD residential treatment. This paper examined various courses of suicidal ideation (onset, remitted, chronic and none) including the prevalence and correlates of these courses. As reducing suicide among Veterans is a top priority in the VA, this paper sought to better understand suicidal ideation and find ways to mitigate risk. This paper found the PTSD symptom improvement and PTSD symptoms at baseline were the most consistent predictors of courses of suicidal ideation.

NEPEC staff, along with other collaborators, also published a paper looking at the role of military sexual trauma (MST) history on symptom outcomes for Veterans receiving residential PTSD treatment. This investigation found that MST survivors exhibited greater treatment gains from admission to discharge, but also greater symptom exacerbation from discharge to follow-up. This indicates that considerations for MST survivors need to be made for relapse prevention and follow-up care.

Additionally during the past year, there has been quarterly publication of a new discharge report for the residential rehabilitation treatment programs (RRTPs), which enables a better understanding of the PTSD RRTP outcomes related to housing, employment, irregular discharges (e.g., rule violations, against medical advice, etc.) and program completion. This information is now collected across all RRTPs through the discharge template. The discharge template is currently undergoing a complete overhaul during which we will begin collecting information on whether Veterans received treatment for PTSD and details about this treatment. These templates will replace the scorecard that is now completed with pen and paper and will be collected for all RRTPs, not just PTSD specific bed sections.

CARE DELIVERY, MODELS OF CARE AND SYSTEM FACTORS.

The MBC in Mental Health Initiative, was formally launched by the OMHSP in June 2016. As part of Phase II of the initiative, every intensive substance abuse outpatient program and every residential treatment program was required to implement MBC. Two members of the Evaluation Division are supporting this initiative together with members of the Executive Division and the Dissemination and Training Division are involved in the senior leadership of the initiative. Additional investigators from within the National Center are closely involved in the evaluation study itself, as well as in the Communications, Education and Training and Coaching work groups.

The national Psychotropic Drug Safety Initiative continues to play a major role in the monitoring of PTSD pharmacotherapy. This study has been tracking data on changes in practice in prescribing for PTSD and has noted a continuing drop in the use of benzodiazepines among Veterans with PTSD. The Division continues its work with technical advisors at the PTSD Mentoring Program and at the OMHSP to provide technical assistance to this initiative. The Division also continues to respond to requests from specialized programs and staff in the field on policy, operations, handbook implementation and the provision of evidence-based practices.

PTSD AND SUICIDE

Suicide prevention has been a focus of the VA, with a particular emphasis on Veterans with elevated risk, such as those with PTSD. Members of the NEPEC team have published papers examining stigma as a barrier to community-based suicide prevention programs

for rural Veterans. As mentioned in the section on treatment efficacy, evaluation data has also been used to examine suicide-related outcomes among Veterans in PTSD residential programs.

The Division has enhanced its evaluation and program monitoring products to better illuminate suicide-related considerations. Working with the wait list of Veterans seeking to enter a RRTP, the system indicates if a Veteran currently has a high risk flag or has a lifetime REACH VET (Recovery Engagement and Coordination for Health—Veteran Enhanced Treatment) status, two pieces of information that are critical to determining priority admission status. The report also links directly to a dashboard that includes important information related to suicide prevention, such as recent safety plan, access to lethal means and other factors.

The RRTP workload report now also includes the prevalence of high risk flags in the six months preceding admission and the six months following discharge. We are also working to secure data from the Suicide Behavior and Overdose Report template in order to better understand these items in the context of RRTP. We are also currently developing and testing revised Screening and Status update templates that will pull in risk information so that clinicians can easily view different aspects of risk, such as recent suicide attempt, current inpatient hospitalization, overdoses, etc. In the PTSD outpatient treatment, a new dashboard to track all admissions to the PTSD clinical team was developed, and it was linked to the MBC patient health questionnaire (PHQ-9) measure to track any suicidal death or ideation in this population. Each PCT director who utilizes the PTSD Status Form template, which tracks MBC data at admission, has the capacity to pull its site data in real-time and define the observed period they are interested to best capture their site data. This dashboard allows for real time and customizable data reports.

OTHER IMPORTANT RESEARCH

Recruitment is complete for the SERV study, which is a repeated panel study of gender differences in psychiatric status and functioning among Veterans of Iraq and Afghanistan. The study recruited 850 participants, with women making up more than 40% of the sample. Participants were interviewed at three-month intervals for at least a year with follow-up rates of 80%-85%, and a sizeable subset continued interviewing for up to three years. Analyses in a number of areas have been undertaken, and 19 manuscripts have been published, are in press or are under review.

The Division is looking for investigators interested in analyzing the SERV data, or in leveraging the SERV sample in add-on or other primary data collection studies. Papers have been published on MST and PTSD as they relate to unit cohesion, gender differences in prevalence rates of disorders over time and characteristics of Veterans endorsing sex addiction items. Other paper and presentation topics include insomnia and PTSD symptoms, suicidal ideation and behaviors and behavioral addictions. SERV data and an add-on study have been used to develop a pornography addiction scale that has been testing for psychometric properties.

VETERANS OUTCOME ASSESSMENT

The PTSD Evaluation is currently analyzing Veterans Outcome Assessment (VOA) data to best model Veterans' experience when receiving PTSD Specialty care. One aim of this project as it relates to PTSD is to determine which factors are associated with better long-term outcomes. Another aim is to identify those Veterans who do not get better during the course of treatment or who experience worsening of PTSD symptoms while undergoing care at the VA. Other projects are related to Veterans seeking residential treatment in the VA system. Current evaluation has been limited to evaluating the effectiveness of PTSD treatment within PTSD specific programs. However, many sites have different administrative bed sections and treat Veterans with PTSD. As such, this new project will better understand PTSD-related outcomes across the RRTP continuum and will enable comparisons between different bed types.

Executive Division

The Executive Division in White River Junction, Vermont, provides leadership, directs program planning and promotes collaboration to facilitate optimal functioning of the other Divisions both individually and collectively. The Executive Division specializes in the development and evaluation of innovative and authoritative educational resources, in programs that disseminate and implement best management and clinical practices and in the use of technologies to reach a broad range of users. The Executive Division also oversees the administration of VA's National PTSD Brain Bank.

BIOMARKERS

Dr. Matthew Friedman, Senior Advisor to the National Center, continues to coordinate the operations of VA's first [National PTSD Brain Bank](#). The PTSD Brain Bank supports the Presidential Executive Order of August 2012 on deployment health by enabling VA to lead the nation in unique research that will facilitate deeper understanding of the causes and consequences of PTSD, as well as advancing assessment and treatment techniques.

The PTSD Brain Bank has seven parts, with facilities at five VA medical centers (Durham, North Carolina; Boston, Massachusetts; Waco, Texas; West Haven, Connecticut; and White River Junction, Vermont), the University of Miami and the Uniformed Services University of the Health Sciences. The Clinical Neurosciences Division in West Haven is the primary data analysis site; ongoing research endeavors utilizing PTSD Brain Bank tissue are described in the Clinical Neurosciences Division narrative.

The VA National PTSD Brain Bank currently has 150 living donors and approximately 280 frozen hemispheres (roughly one-third each from donors with PTSD, donors with major depression and healthy controls). The PTSD Brain Bank is collaborating with PinkConcussions to encourage donations from women with traumatic brain injury; this collaboration began in 2018 and has yielded thirty living donors. The PTSD Brain Bank is also working with the Vietnam Era Twin Registry; 8 referrals have enrolled. Staff are currently forming a relationship with the Armed Forces Retirement Home to further increase enrollment.

In collaboration with the Lieber Institute for Brain Development, National Center for PTSD (NCPTSD) investigators are using Brain Bank tissue to conduct groundbreaking research into the genetic basis of PTSD. Furthermore, control tissue is being collected via an agreement with the National Disease Research Interchange. The Brain Bank's intramural research program has made significant progress, with a number of peer reviewed (published or in press) articles on transcriptomic, synaptic and neuroinflammatory alterations in key brain regions associated with PTSD.

The Biomarkers portfolio also includes examinations of biomarkers of treatment response and neuroimaging research. Transcranial magnetic stimulation (TMS) is a device-based, Food and Drug Administration-cleared intervention for depression that is being tested as a treatment for PTSD. Executive Division investigators are currently examining electroencephalography (EEG) and functional magnetic resonance imaging (fMRI) biomarkers of response to TMS among Veterans with treatment-resistant depression.

Investigators are also evaluating the utility of other neuromodulatory therapies in pre-clinical models of PTSD and shockwave-induced traumatic brain injury. Vagus nerve stimulation (VNS) is an FDA-approved treatment for epilepsy, depression and migraine, with ongoing research for inflammatory conditions. Executive Division investigators are evaluating the utility of VNS for inflammatory-mediated neuropsychiatric consequences of PTSD and brain injury in rodent models, to inform future studies in Veterans.

TREATMENT EFFICIENCY, EFFECTIVENESS AND ENGAGEMENT

The Executive Division has a long history of participation in VA's Cooperative Studies Program (CSP). During FY 2019, CSP #591, a groundbreaking study comparing PE and CPT at 17 VA facilities across the country, was completed. The investigators enrolled 916 participants, more than the 900 that were anticipated. The primary results will be submitted for publication early in FY 2021, and many secondary manuscripts are in preparation. Findings will help VA leadership, clinicians and Veterans make informed choices about the delivery of PTSD care in VA, and will also be broadly relevant to the scientific and clinical communities outside VA.

The National Center previously developed [AboutFace](#), a public awareness campaign to help Veterans recognize PTSD and motivate them to seek treatment. Recruitment for a project in which investigators are examining the impact of AboutFace on engagement in and completion of evidence-based treatment among Veterans with PTSD is ongoing. They will also examine the impact of AboutFace on stigma and attitudes toward mental health services.

Investigators continue to focus on treatments for conditions that frequently co-occur with PTSD and to examine novel treatments for PTSD. Multiple manuscripts focused on secondary outcomes from a trial comparing two psychotherapies for comorbid alcohol use disorder and PTSD (PE and Seeking Safety), such as trauma-related guilt and insomnia, were published in FY 2020. Recruitment continues for a trial that is evaluating the combination of topiramate and PE for co-occurring PTSD and alcohol use disorder. An ongoing study is testing Cognitive Behavioral Therapy (CBT) for Insomnia versus Sleep Hygiene integrated with PE as a strategy for improving sleep problems in PTSD. Investigators also completed a pilot study showing the feasibility of obstructive sleep apnea screening and treatment in a residential treatment program for Veterans with PTSD and substance use disorders.

With respect to novel treatments, the first study of cannabidiol-enhanced PE in Veterans launched in FY 2019, with the first participant enrolled in May 2019. A trial to evaluate a brief protocol to reduce guilt and shame related to a traumatic event among Veterans of Iraq and Afghanistan finished recruitment. This project was extended such that the intervention will be tested among OEF/OIF/OND Veterans who served in Iraq and Afghanistan with guilt related to the COVID-19 pandemic.

During FY 2019 the National Center partnered with the Agency for Healthcare Research and Quality to create the [PTSD Trials Standardized Database Repository \(PTSD-Repository\)](#), a large publicly available database of PTSD clinical trials. The data were abstracted from 318 published randomized controlled trials of PTSD interventions. Data are freely available to researchers, clinicians and other stakeholders. This online repository will inform future study design and conduct and will aid researchers and policymakers in identifying

important gaps in the research. In FY 2020, National Center staff created featured stories and visualizations that provide an overview of the studies included in the PTSD-Repository and information about how investigators can use the data for their own research. More detailed stories are in development. In addition, the developers published a manuscript in which they described how they created the PTSD-Repository and discuss how it can be used to advance research and education initiatives.

CARE DELIVERY, MODELS OF CARE AND SYSTEM FACTORS

The Executive Division is working on several initiatives aimed at assessing models of care and improving evidence-based practice. Investigators continue to analyze data from a national survey that assessed whether the format of the way treatment information is presented impacts individuals' treatment preferences. The acceptability of specific treatments improved in a side-by-side comparison chart as compared to sequential text. These findings, and previous findings from the same survey, informed the development of the [PTSD Treatment Decision Aid](#). This is the first publicly available online treatment decision aid for PTSD, and it has received more than 250,000 views since its release in 2017. Ongoing work using novel informatics and operational methods includes funded work to compare the effectiveness of evidence-based antidepressants, including fluoxetine, sertraline, paroxetine and venlafaxine, in routine practice.

Executive Division investigators continue to examine the impact of facilitation and academic detailing, in which a pharmacist and psychologist reach out directly to VA clinicians in rural clinics to improve PTSD treatment practices. An ongoing initiative is focused on sharing guideline-recommended practices for PTSD with rural facilities outside New England.

Work that aims to improve access to evidence-based treatments for Veterans with PTSD at rural facilities utilizing facilitation, academic detailing and collaboration with the National Center's Mentoring Program continues. Expansion of this project includes measuring the sustainability of the implementation work done in FY 2020 and development of a learning collaborative with the Mentoring Program that focuses on facilitation skills. A second initiative was delayed because of the COVID-19 pandemic, but hopes to build a collaboration with the team's local Office of Community Care to identify providers in the area who are planning to treat Veterans through the Maintaining Systems and Strengthening Integrated Outside Networks (MISSION) Act, which allows Veterans to access care in the community. The project will also create a streamlined network with local community providers to enhance their knowledge of the 2017 VA/DoD (Department of Defense) PTSD Clinical Practice Guideline (CPG) treatment recommendations and share current best practices regarding suicide risk assessment.

IMPLEMENTATION

The Executive Division continues to support quality improvement projects aimed at increasing access to effective treatments for PTSD within the VA. A recent series of quality improvement projects established thresholds for high and low evidence-based psychotherapy (EBP) reach (i.e., access to EBPs) and identified characteristics of PTSD Clinical Teams within VA contributing to higher reach. Investigators are currently beginning the second year of a five-year project to translate the findings of this series into practice through collaboration with the PTSD Mentoring Program. This program is sponsored by the Executive Division and serves as a dissemination network targeting best practices in the administration of PTSD Clinical Teams.

The staff within the Executive Division are also studying the implementation of intensive models of PTSD care (defined as PTSD EBP protocol sessions three to five times per week) following a successful pilot within one medical facility. The goal is to implement the model in three to four more sites to examine the feasibility and effectiveness in additional sites of care.

PTSD AND SUICIDE

Executive Division researchers continue to advance the priority area of PTSD and suicide through collaborations with the National Center for Patient Safety (NCPS), OMHSP and the Center of Excellence for Prevention of Suicide (CoE). A study using semantic analysis of clinical note text to evaluate ruptures in therapeutic alliance preceding death by suicide in a VA PTSD treatment was recently published and led to funding to expand this work in the overall VA user population. Work examining a 15-year national longitudinal cohort of VA users continues to answer important questions about compositional and contextual factors accounting for rural-urban differences in death by suicide. Finally, based on previous work showing elevated risk of suicide during high-risk care transitions, investigators are developing and implementing an effective suicide prevention intervention for rural VA facilities to decrease suicide risk in Veterans living in rural settings. A new project is aimed at further developing this intervention by adding mHealth features. Importantly the team has successfully transitioned to a virtual enrollment format during the COVID-19 pandemic.

Appendix B: Research Narratives By Division

Pacific Islands Division

The Pacific Islands Division in Honolulu, Hawaii, was created to advance PTSD work in the Pacific Rim; to focus on improving access to care by increasing understanding of cultural attitudes and the bases of racial and ethnic disparities in treatment; and to evaluate the use of advanced technology, such as telemedicine, to reach out to Veterans who are otherwise unable to access adequate care.

TREATMENT EFFICIENCY, EFFECTIVENESS AND ENGAGEMENT

Three major projects are aimed at evaluating different methods of delivering PTSD treatment. Investigators are in the final phase of a large trial that examines the clinical efficacy of brief Cognitive-Behavioral Conjoint Therapy and compares home-based care to traditional office-based care. An additional trial in collaboration with the Dissemination and Training Division is looking at home-based STAIR treatment for women Veterans who have experienced MST. A third study is also a collaboration, involving a multi-site trial comparing standard PE with PE incorporating a partner.

OTHER IMPORTANT RESEARCH

Several ongoing studies examine the prevalence of PTSD, response to treatment and presence of related mental health comorbidities in ethnic minority populations. These studies identify unique risk and resilience correlates of PTSD among ethnically and racially diverse Veterans, and the effects of those correlates on Veterans' response to evidence-based PTSD treatments.

Researchers are continuing a study initiated in FY 2017 that uses data from the Honolulu Asian-Aging project to look at the effects of military service combat exposure in particular on late-life dementia, as well as on marital and family structures, mental health and physical health among Japanese-American men.

An ongoing project conducted in conjunction with the Military Family Research Institute at Purdue University examines sociocultural and community influences on mental health decision-making among male and female African-American, Asian-American, Latino and non-Latino white Veterans who are starting PTSD care in a VA mental health clinic. This mixed-methods study uses qualitative phone interviews, follow-up surveys and census information. Initial analyses have examined privacy rules and boundary management among women Veterans. More recent analyses have characterized Veterans' mental health social support confidante network structure, quality and function.

The Division is also working on a national qualitative study examining dropout from evidence-based treatments, in collaboration with investigators from the Women's Health Sciences Division and Minneapolis Health Services Research & Development Center of Innovation. Finally, a statistical methodology project is underway to develop an estimation method to delineate individual factor contributions in observational studies, where models include functional data as either an outcome or as one of a large number of covariates.

Women's Health Sciences Division

The Women's Health Sciences Division in Boston, Massachusetts, specializes in the study of women Veterans and non-Veterans, with a particular focus on understanding sex and gender differences in trauma exposure and posttrauma psychopathology.

BIOMARKERS

Research on biomarkers includes studies aimed at explaining the basic biological processes underlying PTSD with particular relevance to women. One study is examining the role of neurobiological and psychosocial factors that affect negative pregnancy outcomes among women with PTSD. A second study, currently in the data analysis phase, examines sex hormones and derivatives associated with decreased retention of extinction learning across the menstrual cycle in women with PTSD. Recently published results reveal that allopregnanolone, an anxiolytic metabolite of progesterone, contributes to deficits in recall of extinction learning exhibited by women with PTSD. In an effort to improve the effectiveness of PTSD treatments, a new study is investigating the impact of intravenous allopregnanolone on extinction retention and fear memory reconsolidation.

Studies examining the role of biomarkers in intervention efforts also include a study investigating whether a specific electrophysiological response pattern to a series of loud tones is predictive of clinical responses to selective serotonin reuptake inhibitors (SSRIs). Investigators are also working on a series of studies looking into the role of progressive exercise training in reducing symptoms of comorbid chronic pain and PTSD, perhaps by improving participants' capacity to release pain- and stress-reducing neurohormones such as allopregnanolone and neuropeptide Y (NPY) through achieving exercise maintenance.

Division researchers have also recently concluded a pioneering study in the area of head injury in women suffering from PTSD secondary to intimate partner violence (IPV). The aim is to understand the interactive biological and psychological mechanisms that underlie comorbid PTSD and TBI. Investigators are analyzing data to identify sex differences across domains of measurement (psychiatric, psychosocial, neuropsychological, blood-based biomarkers and imaging) by comparing this sample with comparable male samples.

PTSD AND SUICIDE

Division investigators are examining associations between trauma history, PTSD and suicidal behavior among Veterans in a secondary analysis of data from The Veterans Metrics Initiative Study, a longitudinal study of recently separated male and female Veterans. The aims of this newly funded investigation include identifying factors in place at the time of military separation as well as post-separation life circumstances (e.g., health, vocation, finances and social relationships) as predictors of change in suicidal ideation during the first three years after leaving military service.

TREATMENT EFFICIENCY, EFFECTIVENESS AND ENGAGEMENT

With support from the [South Texas Research Organizational Network Guiding Studies on Trauma and Resilience \(STRONG STAR\)](#) Consortium, investigators are testing the efficacy of CPT delivered in an intensive outpatient format with active-duty Service members. Investigators recently completed a pilot study of this intensive outpatient format of CPT, delivered in one week, for female survivors of intimate partner violence with PTSD and traumatic brain injuries. Additional efforts to improve the effectiveness of CPT include a large-scale study designed to test the impact of a case-formulation enhanced version of CPT on treatment adherence, functioning and PTSD symptoms. Other intervention studies on traumatized populations include an open trial to test the effectiveness of a therapist-assisted self-management intervention intended to increase self-efficacy and facilitate greater community engagement following a successful course of PTSD treatment and a comparative effectiveness study of trauma-focused versus non-trauma-focused therapy for the treatment of Veterans with PTSD and substance use disorders.

The Division is also focused on intervention research among those who have not necessarily been diagnosed with PTSD. Researchers continue to test the effectiveness of a national network of peer-facilitated support groups for women Veterans, titled [WoVeN: The Women Veterans Network](#), which is intended to increase social connections and support and to improve well-being. Recent efforts have focused on a comparison of groups offered in person to groups offered via a videoconferencing platform, and the expansion of peer-support services to women transitioning out of active duty military service through the complementary [BRIDGES \(Building Re-Integration from Dreams and Goals to Execution and Success\)](#) program that is designed to partner women Veterans with women Service members during reintegration to civilian life.

CARE DELIVERY, MODELS OF CARE, AND SYSTEM FACTORS

Relevant research within the Women's Health Sciences Division has focused on understanding Veterans' experiences at the time they separate from service and their implications for Veterans' service use. The [Veterans Metric Initiative](#) Study is a large-scale investigation of newly separated Service members' reintegration experiences and use of transition programs, services and supports in the first three years after separation. Comparisons between female and male Veterans suggest that female Veterans experience unique areas of risk, including greater likelihood of experiencing depression and anxiety, and greater declines in well-being. Investigators also continue to analyze data from a study of the effects of deployment stressors and resulting mental health conditions on Veterans' quality of life and health care needs. Recent findings suggest that healthy work functioning in recently returned women Veterans may be important to prevent a cascade of negative effects on mental health as well as psychosocial functioning in other domains, highlighting the potential value in mental health treatment efforts that target resilience in the work setting.

The Division's focus on care delivery also emphasizes care for conditions with particular relevance to women Veterans. Two studies are investigating VHA health care use related to eating disorders, in a nationally representative sample of male and female Veterans and a large cohort of post-9/11 male and female Veterans. These investigations are also examining barriers to mental health care use, both in general and specifically related to eating disorders. A newly initiated follow-up study is focused on the impact of the COVID-19 pandemic on respondents' mental health symptoms with a specific focus on eating disorders.

Other key work has focused on research with important subpopulations within the Veteran community, including a focus on Veterans of color and sexual/gender minority Veterans. An ongoing longitudinal study (Longitudinal Investigation of Gender, Health and Trauma, or LIGHT) in which investigators over-sampled for women, individuals in high crime communities and racial and ethnic minority Veterans seeks to assess the impact of community and gun violence on trajectories of mental health and in health care utilization. This study includes a host of potential risk (including perceived discrimination and race-based stress) and resilience factors (e.g. social support) that may influence these associations. In terms of potential interventions to support Veterans of color, Division investigators

are evaluating the impact of a group intervention that aims to reduce the impact of race-based stressors on health through the provision of evidence-based content to enhance coping skills and social support. Division investigators also continued work refining a model focused on trauma recovery among sexual and gender minority people that considers their unique minority context and ongoing exposures. Ongoing work in this area is focused on conceptualizing the sequelae of discrimination, minority stress and microaggressions among transgender trauma survivors. The health of older women Veterans is another area of focus, including a study examining the impact of military and other lifetime stress exposures and mental health, with a focus on PTSD, later-life health and related quality of life in Vietnam-era women Veterans. Current analyses are focused on cardiovascular disease risk among this population.

IMPLEMENTATION

The Division is also focused on implementation efforts associated with IPV screening and intervention. For example, investigators are evaluating a national rollout of IPV screening programs within women's health primary care clinics to determine implementation outcomes and the clinical effectiveness of IPV screening programs. In the area of IPV interventions, researchers continued a multi-site effectiveness-implementation clinical trial of a brief counseling intervention, Recovering from IPV through Strength and Empowerment (RISE), for women who are experiencing violence in their intimate relationships. This study incorporates a hybrid methodology to inform both the effectiveness of the intervention and expansion of the intervention throughout VA. A complimentary pilot implementation feasibility project conducted with the national VHA IPV Assistance Program demonstrated the scalability of RISE in routine care and extended its use to male and non-binary Veterans.

Division investigators are conducting a range of implementation studies focusing on evidence-based practices for specific patient populations and settings, including an examination of Written Exposure Therapy, a brief PTSD treatment, for pregnant women with comorbid PTSD and substance use disorder who are engaged in prenatal care within a high-risk obstetrical and addiction recovery program; the project is using a hybrid effectiveness implementation design. Another effort involves a qualitative study investigating mental health clinicians' experiences with delivering VHA's evidence-based psychotherapies in metro and non-metro community-based outpatient clinics (CBOC). This investigation will inform the scale-out of evidence-based psychotherapies in these unique settings.

Appendix C: Fiscal Year 2020 Funding

APPENDIX C

FISCAL YEAR 2020 FUNDING

VA Cooperative Studies Program (CSP)

Principal Investigator	Research Title	Years	Current Funding	Total Funding
Krystal	CSP #2016: National Adaptive Trial for PTSD Related Insomnia (NAP)	2018-2023	\$6,100,692	\$24,467,860
Schnurr, Chard, & Ruzek (Marx & Maieritsch - Site PIs)	CSP #591: Comparative Effectiveness Research in Veterans with PTSD (CERV-PTSD)	2013-2021	\$193,712	\$9,048,760

Other VA Sources

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Averill	Structural and Functional Correlates of Suicidality in Veterans with PTSD	CSR&D (CDA)	2019-2023	\$239,731	\$1,680,000
Barnes & Borges (Walser – Site PI)	Thriving in the Midst of Moral Pain: The Acceptability and Feasibility of Acceptance and Commitment Therapy for Moral Injury Among Warzone Veterans	RR&D	2019-2022	\$51,488*	\$572,495
Bernardy	Expanding Rural Access to Effective PTSD Care through Outreach	ORH	2020-2022	\$380,000	\$760,000
Bernardy	PTSD Facilitation to Vermont & New Hampshire Community Providers	ORH	2020-2022	\$41,500	\$83,000
Bovin	From Screening to Treatment: Mapping Access to Care Pathways for Veterans who Screen Positive for PTSD	HSR&D	2019-2020	\$98,767	\$98,767
Cloitre	Connecting Women to Care: Home-based Psychotherapy for Women with MST Living in Rural Areas	HSR&D	2018-2022	\$241,497	\$1,095,979
Cloitre	webSTAIR Enterprise-Wide Initiative & Program Evaluation	ORH	2017-2022	\$2,025,000	\$7,329,369
Colvonen	The Impact of Integrated CBT-I and PE on Sleep and PTSD Outcomes	RR&D (CDA)	2017-2021	\$180,000	\$950,687
Esterman	Connectome-Based Fingerprinting of Clinical and Functional Outcomes in Veterans	RR&D	2018-2020	\$99,610	\$199,220
Esterman	Defining Biotypes of PTSD With Resting-State Connectivity	CSR&D	2018-2022	\$287,467	\$1,008,084
Galovski & Kehle-Forbes	Personalizing Cognitive Processing Therapy with a Case Formulation Approach to Intentionally Target Impairment in Psychosocial Functioning Associated with PTSD	RR&D	2020-2024	\$1,194,890	\$1,194,890
Girgenti	Single Cell Molecular Mechanisms in PTSD and Suicide	VISN 1 (CDA)	2019-2021	\$128,475	\$263,886
Grubaugh & Hamblen	A Randomized Controlled Trial of AboutFace: A Novel Video Storytelling Resource to Improve Access, Engagement, and Utilization of Mental Health Treatment among Veterans with PTSD	HSR&D	2018-2022	\$215,215	\$1,001,900

Appendix C: Fiscal Year 2020 Funding

(Other VA Sources, continued)

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Hamilton & Kimerling	Enhancing the Mental and Physical Health of Women through Engagement and Retention (EMPOWER)	QUERI	2015-2020	\$830,000	\$4,150,000
Harpaz-Rotem & Pietrzak	Fear Reversal Learning in Combat-Related PTSD: A Multi-Model fMRI-PET Approach	CSR&D	2019-2024	\$275,150	\$1,100,602
Holtzheimer	Assessing an Electroencephalography Biomarker of Response to Transcranial Magnetic Stimulation for Major Depression	CSR&D	2020-2025	\$1,196,697	\$5,429,619
Iverson	Increasing Reach of Evidence-Based Psychotherapies in CBOCs: Identifying Needs and Strategies for Scale Out	HSR&D	2020-2021	\$98,534	\$98,534
Iverson	Recovering from Intimate Partner Violence Through Strengths and Empowerment (RISE): Tailoring and Evaluating a Patient-Centered Counseling Intervention for Women Veterans	HSR&D	2018-2021	\$240,000	\$975,643
Iverson & Miller	Addressing Intimate Partner Violence Among Women Veterans: Evaluating the Impact and Effectiveness of VHA's Response	HSR&D	2020-2023	\$300,000	\$1,099,580
Kachadourian	Mindfulness Treatment for Anger in Veterans with PTSD	CSR&D (CDA)	2017-2021	\$129,304	\$732,428
Kehle-Forbes	Pilot Test of a Self-Management Program for Completers of Trauma-Focused Therapy	RR&D	2018-2020	\$94,233	\$196,495
Kimerling	Development of a Patient-Reported Measure to Assess Healthcare Engagement	HSR&D	2018-2022	\$200,453	\$960,248
Krystal & Abdallah	CAP-Ketamine for Antidepressant-Resistant PTSD: A Translational Neuroscience, Biomarker-Informed Clinical Trial**	VA/DoD	2016-2020	\$488,000	\$1,588,594
Kuhn & Owen	Mobile Apps Research Resources and Services	HSR&D	2018-2021	\$238,000	\$350,000
Kuhn & Possemato	An RCT of a Primary Care-Based PTSD Intervention: Clinician-Supported PTSD Coach	HSR&D	2017-2021	\$241,295	\$1,154,683
Kuhn & Sayers	A Randomized Controlled Trial of Coaching Into Care with VA-CRAFT to Promote Veteran Engagement in PTSD Care	VA HSR&D	2020-2024	\$21,952	\$1,193,618
Loflin	Cannabidiol as an Adjunctive to Prolonged Exposure for the Treatment of PTSD	CSR&D (CDA)	2019-2024	\$231,902	\$1,310,332
Logue	Early Cognitive Impairment as a Function of Alzheimer's Disease and Trauma	BLR&D	2019-2021	\$147,368	\$296,877
Logue	Genetic and Epigenetic Biomarkers of PTSD	BLR&D	2017-2020	\$143,601	\$610,600
McCaslin	Development of a Provider Tool to Increase Culturally Competent and Patient-Centered Care: The Military Culture and Experience Index	Ci2i, VA Palo Alto HCS	2021-2022	\$0	\$20,379
McClendon	Talking about Racism: Evaluation of a Group Intervention to Reduce Race-based Stress among Veterans of Color	VISN 1 (CDA)	2020-2022	\$80,653	\$178,478
McClendon, Cohen, Almklov & Russell	Assessing an Electronic Self-Administered Method for Collecting Self-Reported Race and Ethnicity Data in VA Medical Centers (Phase II)	HSR&D	2020-2020	\$63,105	\$63,105
Miller	Magnetic Resonance Spectroscopy and Genetic Analysis of Oxidative Stress in OEF/OIF Veterans with PTSD and TBI	CSR&D	2018-2021	\$165,000	\$645,000
Mitchell	Eating Disorders among Veterans: Risk, Resilience and Service Use	HSR&D	2019-2021	\$263,320	\$543,819
Morland	An Integrative Technology Approach to Home-based Conjoint Therapy for PTSD	RR&D	2016-2020	\$259,500	\$1,038,000
Moye, Pless Kaiser, & Sager	Late Life PTSD Educational Program for VHA and Non-VHA Rural Health Providers	ORH	2020-2020	\$30,000	\$300,000
Niles & Mori	Novel Interventions for Gulf War Veterans' Illnesses	CSR&D	2016-2021	\$326,532	\$1,664,578

Appendix C: Fiscal Year 2020 Funding

(Other VA Sources, continued)

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Noller	Neuromodulation to Alter Acute Inflammation and Neuropsychiatric Deficits Following Traumatic Brain Injury	VISN 1 (CDA)	2021-2023	\$0	\$183,623
Norman	Topiramate and Prolonged Exposure for Alcohol Use Disorder and PTSD	RR&D	2018-2022	\$149,648	\$927,733
Oslin (Gelernter & Ranganathan -Site Pls)	PRIME Care (PRrecision medicine in Mental health Care)	HSR&D	2017-2022	\$75,701*	\$11,306,320
Peterson & Keane	Consortium to Alleviate PTSD	VA/DoD	2013-2020	\$1,495,175	VA: \$21,000,000
Petrakis	Optimal Treatment of Veterans with PTSD and Comorbid Opiate Use Disorder	CSR&D	2018-2023	\$150,000	\$750,000
Pineles	An Electrophysiological Predictor of SSRI Response in Veterans with PTSD	CSR&D	2019-2023	\$149,795	\$599,531
Pless Kaiser	Improving Psychosocial Functioning in Older Veterans with PTSD	RR&D (CDA)	2017-2022	\$186,287	\$809,149
Sayer & Wiltsey Stirman	Shared Contributions to Outcomes and Retention in EBPs for PTSD (SCORE PTSD)	HSR&D	2017-2020	\$331,723	\$1,020,028
Scioli	Neurobiological and Psychological Benefits of Exercise in Chronic Pain and PTSD	RR&D (CDA)	2013-2020	\$0	\$953,342
Scioli	Neurobiological and Psychological Benefits of Exercise in Fibromyalgia and PTSD	VA RR&D	2018-2020	\$0	\$199,904
Scioli & Gerber	Understanding VA Treatment Barriers for Women Veterans with Fibromyalgia: What do Women Veterans Want and Need?	VACO	2020-2021	\$0	\$30,000
Shiner	An Ecological Approach to Understanding Rural Veteran Suicide	ORH	2020-2021	\$258,257	\$516,716
Shiner	Patient Safety Center of Inquiry: Prevention of Suicide (Renewal)	NCPS	2019-2021	\$246,163	\$526,809
Shiner	Suicide Prevention in Rural Veterans During High-Risk Care Transition Scenarios	ORH	2020-2023	\$566,214	\$2,215,257
Sloan	An Efficient Exposure-Based Treatment for PTSD Compared to Prolonged Exposure: A Noninferiority Trial	CSR&D	2019-2023	\$414,987	\$1,762,404
Sullivan	Neural Metabolic Stress in mTBI and PTSD	CSR&D (CDA)	2018-2023	\$170,127	\$877,915
Thompson-Hollands	An Adjunctive Family Intervention for Individual PTSD Treatment	CSR&D (CDA)	2017-2021	\$187,802	\$743,010
Thompson-Hollands	Reaping the Wisdom of Positive Deviants to Increase the Reach of Family Involvement in PTSD Treatment	HSR&D	2020-2021	\$103,578	\$103,578
Vogt	Development and Validation of Well-Being Indicators for use in Evaluating VA Whole Health Care	EPCC/ QUERI	2020-2021	\$154,767	\$178,693
Vogt	Risk and Resilience Factors related to Suicidal Ideation during Transition from Military to Civilian Life: Secondary Analyses of the TVMI Cohort Study	HSR&D	2020-2022	\$23,220	\$356,266
Wolf	PTSD-Related Accelerated Aging in DNA Methylation and Risk for Metabolic Syndrome	CSR&D	2016-2020	\$150,000	\$600,000
Wolf	Presidential Early Career Awards for Scientists and Engineers Funding	CSR&D	2016-2021	\$25,000	\$125,000
Zimmerman	Participatory System Dynamics vs Usual Quality Improvement: Is Staff Use of Simulation an Effective, Scalable and Affordable Way to Improve Timely Veteran Access to High-quality Mental Health Care?	HSR&D	2020-2023	\$374,402	\$1,198,168

Appendix C: Fiscal Year 2020 Funding

(Other VA Sources, continued)

BLR&D Biomedical Laboratory Research & Development Service; CAP Consortium to Alleviate PTSD; CBOC community-based outpatient clinic; CBT-I Cognitive-Behavioral Therapy for Insomnia; CDA Career Development Award; Ci2i HSR&D Center of Excellence; CSR&D Clinical Science Research and Development Service; DoD Department of Defense; EPCC Center for Evaluating Patient-Centered Care; fMRI-PET functional magnetic resonance imaging-positron emission tomography; HCS healthcare system; HSR&D Health Services Research and Development Service; MST military sexual trauma; mTBI mild traumatic brain injury; NCPS National Center for Patient Safety; OEF/OIF Operation Enduring Freedom/Operation Iraqi Freedom; ORH Office of Rural Health; QUERI Quality Enhancement Research Initiative; RCT randomized controlled trial; RR&D Rehabilitation Research and Development Service; SSRI selective serotonin reuptake inhibitor; TVMI The Veterans Metric Initiative; VACO VA Central Office; VA Department of Veterans Affairs; VA CRAFT Community Reinforcement And Family Training; VHA Veterans Health Administration VISN Veterans Integrated Service Network

**Indicates FY 2020 funds allocated to funded site PI.

**Sub-award within the total \$21 million CAP award to VA; total CAPS award including DoD funds = \$42,000,000.

National Institutes of Health (NIH)

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Abdallah	Glial and Synaptic Functions in Major Depression	NIMH	2017-2022	\$311,527	\$2,493,229
Agarwal (Gelernter – Site PI)	Psychiatric Genomics Consortium: Find Actionable Variation	PGC via NIH et al.	2016-2021	\$164,363*	\$932,488
Bohnert (Kuhn – Site PI)	Testing a PTSD m-Health Intervention to Improve Alcohol Treatment Outcomes	NIAAA	2020-2025	\$0*	\$3,043,387
Carlson	Development of a Risk Factor Screen for Mental Health Problems after Sudden Illness or Injury	NIMHD	2018-2022	\$610,092	\$2,277,710
Clouston & Pietrzak	A Life Course Approach to Integrating Trauma and Cognitive Aging: A Cohort of 9/11 Responders	NIAAA	2015-2020	\$573,065	\$2,865,325
Cosgrove	Imaging Molecular Mechanisms of Tobacco Smoking Withdrawal	NIDA	2016-2020	\$447,737	\$2,238,685
Cosgrove & Pietrzak	Imaging Microglial Activation in PTSD using PET	NIMH	2017-2022	\$499,999	\$825,495
Davis	Dysregulation in mGluR5 as a Marker of BPD and Suicide Related Endophenotypes	NIMH (K)	2018-2023	\$196,278	\$983,483
Duman	Role of GABA Interneurons in Rapid Antidepressant Actions of NMDA Receptor Blockade	NIMH	2017-2022	\$510,206	\$2,340,351
Esterlis	PET-fMRI Study of Glutamate and Frontal Function in Bi- and Uni-polar Depression	NIMH	2015-2020	\$496,729	\$2,146,470
Esterlis	In Vivo Imaging of a Neural Marker of Suicidal Behavior in Bipolar Disorder	NIMH	2018-2023	\$704,411	\$3,935,570
Esterlis & Pietrzak	Depression and Accelerated Brain Aging: A PET Imaging Study	NIMH	2018-2023	\$0	\$4,051,532
Feder & Pietrzak	Neuroimaging of Resilience in World Trade Center Responders: A Focus on Emotional Processing, Reward and Social Cognition	CDC/NIOSH	2017-2021	\$599,086	\$2,398,856
Fichtenholtz (Sippel , Collaborator)	Neural Mechanisms of Emotional Vigilance in Posttraumatic Stress Disorder	NIH/NH-INBRE	2018-2020	\$3,600*	\$84,501
Gradus	Characterizing Trauma Outcomes: From Pre-Trauma Risk to Post-Trauma Sequelae	NIMH	2017-2021	\$31,000	\$1,303,518
Gradus & Shiner	Identification of Novel Agents to Treat PTSD using Clinical Data	NIH NIMH	2020-2024	\$650,498	\$2,468,676
Halko (Esterman – Site PI)	Dose Dependent Response of Cerebellar Transcranial Magnetic Stimulation	NIH NIMH	2016-2020	\$21,600*	\$1,706,740
Harpaz-Rotem & Hampson	Neurofeedback of Amygdala Activity for PTSD	NIMH	2018-2020	\$344,563	\$1,154,286
Harpaz-Rotem & Schiller	Fear Learning and Reconsolidation After Trauma Exposure: A Computational Approach	NIMH	2015-2020	\$0	\$1,830,328

Appendix C: Fiscal Year 2020 Funding

(National Institutes of Health (NIH), continued)

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Hayes (Miller – Site PI)	Neuroimaging and Molecular Markers of AD and Neurodegenerative Disease after Concussion	NIA	2019-2024	\$245,187	\$1,205,642
Kaye	Determining the Role of Noradrenergic Heterogeneity in Innate Threat Response	NIH (K)	2020-2025	\$48,735	\$974,740
Keane	Postdoctoral Training in PTSD	NIMH	2016-2020	\$242,965	\$1,021,231
Lee, L.	Lifespan Effects of Biologically Embedded Stress on Health	NIA (K)	2015-2020	\$129,363	\$644,743
Lee, L. & Mroczek	Boston Early Adversity and Mortality Study (BEAMS): Linking Administrative Data to Long-Term Longitudinal Studies	NIA	2019-2024	\$752,220	\$3,528,185
Levy	Individual Differences in Decision Making Under Uncertainty	NIMH	2019-2024	\$729,930	\$3,337,954
Malison & Gelernter	Identifying Methamphetamine Risk Variants by Extreme Phenotype Exome Sequencing	NIDA	2015-2020	\$600,000	\$2,595,844
Morey (Logue – Site PI)	Trauma and Genomics Modulate Brain Structure across Common Psychiatric Disorders	NIMH	2017-2021	\$520,253*	\$2,096,864
Morris & Cosgrove	Imaging Sex Differences in Smoking-Induced Dopamine Release via Novel PET Methods	NIDA	2015-2020	\$439,638	\$2,198,190
Nilni	PTSD-Related Neurobiological Mediators of Negative Pregnancy Outcomes	NICHD (K)	2017-2021	\$153,933	\$615,735
Pless Kaiser & Niles	A Randomized Pilot Trial of Tai Chi Compared to Wellness Education for Older Veterans	NIA/Boston Roybal Center	2018-2019	\$26,985	\$26,985
Ranganathan	Multimodal Imaging of Recovery from Cannabis Dependence	NIDA	2016-2021	\$448,267	\$1,756,541
Ranganathan & Radhakrishnan	Effect of Cannabidiol on Microglial Activation and Central Pain Sensitization	NIMH	2019-2021	\$150,000	\$275,000
Rasmusson	Facilitation of Reconsolidation Blockade and Extinction Retention in PTSD by Intravenous Allopregnanolone	NIMH	2021-2025	\$0	\$4,050,378
Scioli	Neurobiological Mediators of Self-Regulatory and Reward-Based Motivational Predictors of Exercise Maintenance in Chronic Pain and PTSD	NCCIH	2018-2021	\$171,257	\$346,500
Smith & Krystal	Yale Clinical and Translational Science Award (CTSA)	NIMH	2016-2021	\$8,657,777	\$44,547,832
Smith (Kuhn – Site PI)	A SMART Design to Facilitate PTSD Symptom Management Strategies among Cancer Survivors	NCI	2020-2025	\$38,078	\$2,342,355
Smith & Logue	The Impact of Traumatic Stress on the Methylome: Implications for PTSD	NIMH	2016-2020	\$559,082	\$2,479,996
Williams (Holtzheimer – Site PI)	Mechanistic Circuit Markers of Transcranial Magnetic Stimulation Outcomes in Pharmacoresistant Depression	NIMH	2020-2024	\$83,020	\$1,996,000
Wiltsey Stirman	Leveraging Routine Clinical Materials and Mobile Technology to Assess CBT Quality	NIMH	2017-2021	\$632,907	\$2,607,817
Wiltsey Stirman & Monson	Improving and Sustaining CPT for PTSD in Mental Health Systems	NIMH	2016-2020	\$433,423	\$1,615,257
Wolf	Longitudinal Neurometabolic Outcomes of Traumatic Stress-Related Accelerated Cellular Aging	NIA	2020-2025	\$423,508	\$1,694,033
Wolf	Neurobiological Correlates of Accelerated Cellular Aging	NIA	2019-2021	\$189,000	\$346,500
Woodward & Khan	In-Home Sleep Monitoring to Detect Suicide Risk in Veterans	NIMH	2020-2022	\$53,802	\$416,632
Zimmerman	Participatory System Dynamics for Evidence-based Addiction and Mental Healthcare	NIDA	2016-2020	\$0	\$398,960
Zimmerman	Participatory System Dynamics vs Audit and Feedback: A Cluster Randomized Trial of Mechanisms of Implementation Change to Expand Reach of Evidence-based Addiction and Mental Health Care	NIDA	2019-2023	\$577,049	\$2,864,531

Appendix C: Fiscal Year 2020 Funding

(National Institutes of Health (NIH), continued)

CDC Centers for Disease Control and Prevention; CTSI Clinical and Translational Science Institute; K Career Development Award; NCCIH National Center for Complementary and Integrative Health; NH-INBRE New Hampshire IDeA Network of Biomedical Research Excellence; NIA National Institute on Aging; NIAAA National Institute on Alcohol Abuse and Alcoholism; NICHD National Institute of Child Health and Human Development; NIDA National Institute on Drug Abuse; NIH National Institutes of Health; NIMH National Institute of Mental Health; NIMHD National Institute on Minority Health and Health Disparities; NIOSH National Institute for Occupational Safety and Health; PGC Psychiatric Genomics Consortium

*Indicates FY 2020 funds allocated to funded site PI or collaborator.

Department of Defense (DOD)

Principal Investigator	Research Title	Years	Current Funding	Total Funding
Chard & Marx	Psychometric Evaluation of the Clinician Administered PTSD Scale for DSM-5 (CAPS-5) and the PTSD Symptom Scale Interview for DSM-5 (PSSI-5) in an Active Duty and Military Veteran Sample	2018-2020	\$1,067,635	\$3,235,388
Marx	Decreasing Suicide Risk among Service Members with Posttraumatic Stress	2019-2021	\$635,195	\$1,269,741
McLean & Rosen	Targeted Strategies to Accelerate Evidence-Based Psychotherapies Implementation in Military Settings	2017-2021	\$1,834,162	\$8,265,060
Mitchell & Cooper	Eating Disorders in Veterans: Prevalence, Comorbidity, Risk and Healthcare Use	2018-2021	\$529,281	\$1,463,890
Norman	Trauma Informed Guilt Reduction (TriGR) Intervention	2015-2019	\$467,692	\$1,989,870
Shiner	Comparative Effectiveness of Psychotropic Medications for PTSD in Clinical Practice	2017-2020	\$343,956	\$1,160,375
Sloan	Brief Treatment for PTSD: Enhancing Treatment Engagement and Retention	2015-2020	\$65,000	\$2,226,872
Taft	Strength at Home Couples Program to Prevent Military Partner Violence	2015-2019	\$140,480	\$708,905
Wachen	Massed Cognitive Processing Therapy for Combat-related PTSD	2017-2021	\$903,277	\$3,282,395

Other Non-VA Sources

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Averill	Brain Connectivity Networks and Predictors of Rapid Improvement in Suicidal Ideation Among Veterans	American Foundation for Suicide Prevention	2018-2020	\$40,000	\$90,000
Berke, Livingston, Ruben & Shipherd	Social Reactions to Transgender Trauma and Discrimination	Palm Center Small Research Grant	2019-2020	\$1,000	\$1,000
Colvonen	Examining OSA Screening on a SARRTP SUD and PTSD Residential Treatment Unit	Academic Senate Grant	2019-2021	\$0	\$10,000
Esterlis	Evaluation of a Novel Target for the Treatment of Chronic Pain in Women	Women's Health Research Yale School of Medicine	2019-2020	\$49,700	\$49,700
Esterlis	Evaluation of Glutamatergic System in Adolescent Depression	Nancy Taylor Foundation	2018-2020	\$108,000	\$216,000
Galovski & Street	Building Re-integration from Dreams and Goals to Execution and Success (BRIDGES)	Walmart Foundation	2020-2021	\$99,777	\$99,777

Appendix C: Fiscal Year 2020 Funding

(Other Non-VA Sources, continued)

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Galovski & Street	Core Support - Women Veterans Network (WoVeN)	Oak Foundation	2020-2022	\$200,000	\$200,000
Galovski & Street	Women Veterans Network (WoVeN)	Bob Woodruff Foundation	2020-2021	\$179,740	\$179,740
Galovski & Street	Women Veterans Network (WoVeN) - Phase 2	Walmart Foundation	2018-2020	\$62,011	\$250,782
Galovski & Street	Women Veterans Network (WoVeN) Training Peer Trainers to Increase Reach, Sustainability	Oak Foundation	2019-2020	\$37,500	\$50,000
Girgenti	Sex-specific Molecular Mechanisms in PTSD	Brain and Behavior Research Foundation	2020-2022	\$0	\$70,000
Harpaz-Rotem	Enhancing Prolonged Exposure Therapy with Ketamine	American Brain Society	2020-2025	\$6,000	\$50,000
Kachadourian	Non-Suicidal Self Injury in Military Veterans with PTSD: An Ecological Momentary Assessment Study	Yale Center for Clinical Investigation	2020-2022	\$20,000	\$40,000
Kaye	Circuit of Mechanisms of a Pupillary Biomarker for Stress-Induced Hyperarousal	Brain and Behavior Research Foundation	2019-2021	\$35,000	\$70,000
Kehle-Forbes & Hagedorn (Norman – Site PI)	Comparative Effectiveness of Trauma-Focused and Non-trauma-focused Treatment Strategies for PTSD Among Those with Co-occurring SUD (COMPASS)	PCORI	2020-2024	\$640,395	\$4,998,798
Levy	Decision Making Under Uncertainty Across the Lifespan: Cognitive, Motivational and Neural Bases	National Science Foundation	2018-2020	\$224,771	\$696,038
McGovern & Heinz	Evaluating the Sonoma Wildfire Mental Health Collaborative: A study of direct care and technology partnerships to support mental health among disaster survivors	Healthcare Foundation of Northern Sonoma County	2019-2020	\$99,981	\$99,981
Nilni & Valentine	A Pragmatic Effectiveness Trial of a Brief Exposure Therapy for PTSD on Substance Use and Mental Health Morbidity and Mortality During the Perinatal Period	Grayken Center for Addiction	2019-2021	\$75,000	\$150,000
Okamura	Participatory System Dynamics Modeling	SAMHSA	2020-2024	\$449,016	\$1,868,991
Petrakis	Kappa Opioid Receptor Antagonist for the Treatment of Alcohol Use Disorder and Comorbid PTSD - Planning Grant	Pharmacotherapies for Alcohol and Substance Use Disorders Consortium	2018-2020	\$189,794	\$576,152
Sareen (Pietrzak - Site PI)	Defining the Longitudinal Course, Outcomes, and Treatment Needs of Vulnerable Canadians with Posttraumatic Stress Disorder	Canadian Institutes of Health Research	2015-2022	\$340,868	\$2,386,073
Sippel	Social Approach and Avoidance in PTSD: Implications for Social Functioning	Geisel School of Medicine Gary Tucker Junior Investigator Research Award	2019-2020	\$19,961	\$39,922
Taft	Implementation of VA Rollout of Strength at Home	Bob Woodruff Foundation	2019-2020	\$189,673	\$642,118
Taft	Strength at Home: Promoting Healthy Relationships, Healing Trauma, Breaking the Cycle of Violence	Mother Cabrini Health Foundation	2020-2020	\$185,463	\$185,463
Vogt	The Veterans Metrics Initiative: Linking Program Components to Post-Military Well-Being	Consortium of Public and Private Funding, including VA HSR&D	2015-2020	\$1,341,242	\$5,914,960
Weisberg & Livingston	Impact of Covid-19-Related Medication-Assisted Treatment Policy Changes on Patients with Opioid Use Disorders	PCORI	2020-2022	\$1,300,203	\$2,300,203

Appendix C: Fiscal Year 2020 Funding

(Other Non-VA Sources, continued)

Principal Investigator	Research Title	Funding Source	Years	Current Funding	Total Funding
Wiltsey Stirman	Gavin Farrell Foundation CPT Training Initiative	Gavin Farrell Foundation	2019-2020	\$64,090	\$64,090
Wiltsey Stirman & Kaysen	A Web-Based Intervention for Healthcare Workers Impacted by COVID-19	Huang Family Foundation	2020-2021	\$1,000,000	\$1,300,000
Wolf	The Utility of MMPI-2 RF in Informing VA Pain Clinic Care	University of Minnesota Press, Test Division	2016-2022	\$0	\$24,000

HSR&D Health Services Research and Development; MMPI-2 RF Minnesota Multiphasic Personality Inventory-2 Restructured Form; OSA obstructive sleep apnea; PCORI Patient-Centered Outcomes Research Institute; SAMHSA Substance Abuse and Mental Health Services Administration; SARRTP Substance Abuse Recovery and Rehabilitation Treatment Program; SUD substance use disorder; VA Department of Veterans Affairs

Projects Pending Funding

Principal Investigator	Research Title	Years	Current Funding	Total Funding
Bean & Scioli	The VA REAP Center for Rehabilitative Care: Optimizing Mobility, the Mind, and Motivation	VA RR&D	2021-2025	\$1,570,721
Bovin	Understanding Pathways to Care for Veterans who Screen Positive for PTSD: The PTSD Access To Healthcare (PATH) Study	VA HSR&D	2021-2024	\$1,029,762
Colvonen	Examining Early Intervention OSA PAP Treatment on Long-Term Outcomes in Veterans with SUD/PTSD in a Residential Treatment Program	VA RR&D	2021-2026	\$1,378,365
Esterman & Lee, D.	Identifying Neural Fingerprints of Suicidality	VA RR&D	2021-2023	\$199,746
Harpaz-Rotem	Comparing the Long-Term Effectiveness of Evidence-Based Treatment for PTSD	PCORI	2020-2024	\$860,000
Holtzheimer	Deep Brain Stimulation to Delineate Dysregulated Cortical-Limbic Circuitry After Shockwave-Induced TBI	VA BLR&D	2021-2025	\$1,200,000
Iverson	IPV Intervention Development, Dissemination and Implementation Hub	IPVAP Innovation Hub	2021-2021	\$332,000
Kaye	SCREAM: A Platform for Decomposing Stress into Circuit Programs	NIH Director's New Innovator Award	2021-2026	\$1,500,000
Kehle-Forbes	Empowering Veterans to Self-Manage PTSD Symptoms Following Completion of Trauma-Focused Therapy	VA HSR&D	2021-2025	\$1,348,344
Kelmendi	The Neural Correlates of the Effects of Psilocybin in OCD: A Randomized Controlled Trial	NIMH K	2020-2024	\$778,392
Livingston	Brief Technology-Based Intervention to Reduce Alcohol Use, Relapse Risk, and PTSD Symptoms Following Discharge from Inpatient Detoxification	NIAAA	2020-2025	\$915,375
Livingston & Lee, D.	Cognitive Behavioral Therapy for Suicide Prevention: Does Treatment Help Those Who Need It Most?	Boston University CTSI Pilot Awards Program	2020-2022	\$47,570
McLean	Increasing Reach and Optimizing Outcomes for PTSD Care in Rural Texas: An Adaptive Randomized Controlled Trial	NIMH	2021-2025	\$3,127,613
McLean & Janhke	An Efficient 2-Day Treatment for Posttraumatic Injury for Firefighters	FEMA	2020-2023	\$1,495,970
Neylan, Woodward & Huber	Maladaptive Myelination in PTSD: An In Vivo MRI and PTSD Brain Bank Study	NIMH	2020-2025	\$2,954,845

Appendix C: Fiscal Year 2020 Funding

(Projects Pending Funding, continued)

Principal Investigator	Research Title	Years	Current Funding	Total Funding
Niles & Mori	Comparing Tai Chi and Present Centered Therapy to Address Functioning in Posttraumatic Stress Disorder	VA RR&D	2020-2024	\$1,122,535
Norman & Hein	Massed Prolonged Exposure for PTSD in Residential Substance Use Disorders Treatment	NIDA	2020-2025	\$3,129,750
Pineles & Pace-Schott	Circadian Influence on Fear Extinction Resulting from Prolonged Exposure Therapy for PTSD	NIMH	2021-2025	\$2,822,278
Pless Kaiser, Spiro, Moye & Meis	Improving Psychosocial Functioning of Older Veterans with PTSD and Their Families	VA RR&D	2021-2026	\$1,131,621
Shiner	Clinical Effectiveness of Long-Acting Injectable Naltrexone for Posttraumatic Stress Disorder and Alcohol Use Disorder	DoD	2021-2022	\$368,069
Sippel	A Test of Oxytocin as an Enhancer of Couples Therapy for PTSD: Effects on Social Functioning	VA RR&D CDA	2021-2026	\$826,479
Smith	Long-Term Health Impact of Vietnam Era Service: Examining Gender Differences in Risk of Mortality and Chronic Disease	VA CSR&D	2021-2023	\$383,456
Smith & Elbogen (Kuhn - Site PI)	Integrating Digital Health Approaches for Pain Management in Breast Cancer Patients	NCI	2021-2023	\$552,140
Smith & Elbogen (Kuhn - Site PI)	Integrating Technological Approaches for Pain Management in Adult Survivors of Childhood Cancer	NCI	2021-2026	\$3,100,860
Spoont	Social Determinant Contributions to PTSD Treatment Outcome Disparities: A Prospective, Multilevel Evaluation	VA HSR&D	2020-2024	\$1,199,956
Sripada (Kuhn - Site PI)	Testing Adaptive Interventions to Improve PTSD Treatment Outcomes in Federally Qualified Health Centers	NIMH	2021-2025	\$2,500,000
Sullivan	Cross-sectional and Longitudinal Associations between Telomere Length, PTSD and Brain Morphology	Telomere Research Network	2020-2020	\$4,000
Taft	Adjunctive Motivational Alcohol Intervention to Prevent Intimate Partner Violence	VA CSR&D	2021-2025	\$1,304,582
Taft	Strength at Home Implementation and Evaluation	IPVAP Innovation Hub	2021-2022	\$309,128
Whitworth	Impact of Lifestyle on Cardiovascular and Metabolic Risk Factors in Trauma Exposed Post-9/11 Veterans	VA RR&D CDA	2021-2026	\$914,156
Wiltsey Stirman & Rosen	Leadership and Organizational Change for Implementation in VA Mental Health	VA HSR&D	2020-2024	\$1,577,081
Wolf	Traumatic Stress-Related Accelerated Aging Across the Peripheral and Central Nervous Systems	1907 Trailblazer Award	2021-2023	\$120,000
Zimmerman	COVID-19 Administrative Supplement to Participatory System Dynamics vs Audit and Feedback: A Cluster Randomized Trial of Mechanisms of Implementation Change to Expand Reach of Evidence-Based Addiction and Mental Health Care	NIDA	2020-2022	\$200,000

Appendix C: Fiscal Year 2020 Funding

(Projects Pending Funding, continued)

HSR&D Health Services Research and Development Service; IPV intimate partner violence; IPVAP VA Intimate Partner Violence Assistance Program; LOCI-LO Leadership and Organizational Change for Implementation for Learning Organizations; MRI magnetic resonance imaging; NCI National Cancer Institute; NIAAA National Institute on Alcohol Abuse and Alcoholism; NIDA National Institute on Drug Abuse; NIH National Institutes of Health; NIMH National Institute of Mental Health; OCD obsessive-compulsive disorder; OSA obstructive sleep apnea; PAP positive airway pressure; PCORI Patient-Centered Outcomes Research Institute; PTSD Posttraumatic Stress Disorder; REAP Research Enhancement Award Program; RR&D Rehabilitation Research and Development Service; SCREAM Stress Circuit Response and Epigenetic Activity Modeling; SUD Substance Use Disorder; TBI traumatic brain injury; VA Veterans Affairs

APPENDIX D

PUBLICATIONS BY NATIONAL CENTER STAFF

1. **Abdallah, C.** (2020). (2R,6R)-hydroxynorketamine (HNK) plasma level predicts poor antidepressant response: Is this the end of the HNK pipeline? *Neuropsychopharmacology, 45*, 1245-1246. doi:10.1038/s41386-020-0668-1
2. **Abdallah, C., Averill, L.,** Gueorguieva, R., Goktas, S., **Purohit, P., Ranganathan, M.,** D'Souza, D. C., Sherif, M., Formica, R., **Southwick, S. M., Duman, R., Sanacora, G., & Krystal, J. H.** (2020). Modulation of the antidepressant effects of ketamine by the mTORC1 inhibitor rapamycin. *Neuropsychopharmacology, 45*, 990-997. doi:10.1038/s41386-020-0644-9
3. **Akiki, T., & Abdallah, C.** (2019). Determining the hierarchical architecture of the human brain using subject-level clustering of functional networks. *Scientific Reports, 9*, 19290. doi:10.1038/s41598-019-55738-y
4. Alpert, E., Hayes, A. M., **Barnes, J. B., & Sloan, D. M.** (2020). Predictors of dropout in Cognitive Processing Therapy for PTSD: An examination of trauma narrative content. *Behavior Therapy, 51*, 774-788. doi:10.1016/j.beth.2019.11.003
5. **Arditte Hall, K.,** Davison, E., **Galovski, T. E., Vasterling, J. J., & Pineles, S. L.** (2019). Relations between trauma-related rumination and symptoms of posttraumatic stress and depression in treatment-seeking female veterans. *Journal of Traumatic Studies, 32*, 260-268. doi:10.1002/jts.22385
6. **Arditte Hall, K., Healy, E., & Galovski, T. E.** (2020). The sequelae of sexual assault. In W. O'Donohue, P. Schewe, & C. Cummings (Eds.), *Handbook of sexual assault and sexual assault prevention* (pp. 277-292). New York, NY: Springer. doi:10.1007/978-3-030-23645-8_16
7. Arenson, M., **McCaslin, S. E., & Cohen, B.** (2019). Predictors of multiple domains of functioning in veterans with posttraumatic stress disorder: Results from the Mind Your Heart Study. *Depression and Anxiety, 36*, 1026-1035. doi:10.1002/da.22945
8. Aronson, K. R., Perkins, D. F., Morgan, N. R., Bleser, J. A., **Vogt, D.,** Copeland, L. A., Finley, E. P., & Gilman, C. L. (2020). Use of health services among post-9/11 veterans with mental health conditions within 90 days of separation from the military. *Psychiatric Services, 71*, 670-677. doi:10.1176/appi.ps.201900326FIX
9. Aronson, K. R., Perkins, W. S., Morgan, N. R., Bleser, J. A., **Vogt, D.,** Copeland, L. A., Finley, E. P., & Gilman, C. (2020). The impact of adverse childhood experiences (ACEs) and combat exposure on mental health conditions among new post-9/11 veterans. *Psychological Trauma: Theory, Research, Practice, and Policy, 12*, 698-706. doi:10.1037/tra0000614
10. Aronson, K., Perkins, W. S., Morgan, N., Bleser, J., **Vogt, D.,** Copeland, L., Finley, E., & Gilman, C. (2019). Post-9/11 veteran transitions to civilian life: Predictors of the use of employment programs. *Journal of Veterans Studies, 5*, 14. doi:10.21061/jvs.v5i1.127
11. **Averill, C. L., Abdallah, C., & Averill, L.** (2019). When the "golden chain" breaks: Sleep disturbance and the vicious cycle of chronic stress. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging, 4*, 1018-1020. doi:10.1016/j.bpsc.2019.10.004
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13. **Averill, L., Abdallah, C.,** Fenton, L. R., Fasula, M. K., Jiang, L., Rothman, D. L., Mason, G. F., & **Sanacora, G.** (2020). Early life stress and glutamate neurotransmission in major depressive disorder. *European Neuropsychopharmacology, 35*, 71-80. doi:10.1016/j.euroneuro.2020.03.015
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Appendix D: Publications by National Center Staff

16. **Azevedo, K. J.**, Ramirez, J., Kumar, A., LeFevre, A., Factor, A., Hailu, E., Lindley, S., & **Jain, S.** (2020). Rethinking violence prevention in rural and underserved communities: How veteran peer support groups help participants deal with sequelae from violent traumatic experiences. *The Journal of Rural Health, 36*, 266-273. doi:10.1111/jrh.12362
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19. Belsher, B., Beech, E., Evatt, D., Smolenski, D., Shea, M., Otto, J., **Rosen, C. S.**, & **Schnurr, P. P.** (2019). Present Centered Therapy (PCT) for post-traumatic stress disorder (PTSD) in adults. *Cochrane Database of Systematic Reviews*. doi:10.1002/14651858.CD012898.pub2
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22. Borges, L. M., Barnes, S. M., Farnsworth, J., **Drescher, K.**, & **Walsler, R. D.** (2020). A contextual behavioral approach for responding to moral dilemmas in the age of COVID-19. *Journal of Contextual Behavioral Science, 17*, 95-101. doi:10.1016/j.jcbs.2020.06.006
23. Bosch, J., **Mackintosh, M.**, Wells, S. Y., Wickramasinghe, I., & **Morland, L. A.** (2020). PTSD treatment response and quality of life in women with childhood trauma histories. *Psychological Trauma: Theory, Research, Practice, and Policy, 12*, 55-63. doi:10.1037/tra0000468
24. **Bovin, M. J.**, Miller, C. J., Koenig, C. J., Lipschitz, J. M., Zamora, K. A., Wright, P. B., Pyne, J. M., & Burgess, J. F. (2019). Veterans' experiences initiating VA-based mental health care. *Psychological Services, 16*, 612-620. doi:10.1037/ser0000233
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27. Brooks Holliday, S., Hepner, K., Farmer, C., Ivany, C., Iyiewuare, P., **McGee-Vincent, P.**, **McCaslin, S. E.**, & **Rosen, C. S.** (2020). A qualitative evaluation of Veterans Health Administration's implementation of measurement-based care in behavioral health. *Psychological Services, 17*, 271-281. doi:10.1037/ser0000390
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34. Clarke-Walper, K., Penix, E. A., Trachtenberg, F., **Simon, E. P.**, Coleman, J., Magnavita, A., **Ortigo, K. M.**, **Regala, S. L.**, Marceau, L., **Ruzek, J. I.**, Rosen, R. C., & Wilk, J. E. (2020). Efficacy of a web-based tool in reducing burnout among behavioral health clinicians: Results from the PTSD Clinicians Exchange. *Psychiatric Research and Clinical Practice, 2*, 3-9. doi:10.1176/appi.prcp.20190004
35. **Cloitre, M.** (2020). ICD-11 complex post-traumatic stress disorder: Simplifying diagnosis in trauma populations. *The British Journal of Psychiatry, 216*, 129-131. doi:10.1192/bjp.2020.43
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39. **Cloitre, M.**, Karatzias, T., & Ford, J. (2020). Treatment of complex PTSD. In D. Forbes (Ed.), *Effective treatments for PTSD: Practice guidelines for the International Society for Traumatic Stress Studies* (pp. 287-313). New York, NY: Guilford Press.
40. Coleman, J. L., Marceau, L., Zinzivage, R., Magnavita, A. M., Ambrosoli, J. A., Shi, L., **Simon, E. P.**, **Ortigo, K. M.**, Clarke-Walper, K., Penix, E., Wilk, J., **Ruzek, J. I.**, & Rosen, R. C. (2020). Understanding how clinicians use a new web-based tool for disseminating evidence-based practices for the treatment of PTSD: The PTSD clinicians exchange. *Military Medicine, 185* (Supplement_1), 286-295. doi:10.1093/milmed/usz313
41. **Colvonen, P.**, Rivera, G., & Park, J. (2020). Sleep disorders, consequences, and treatment in veterans. In K. Sedky (Ed.), *Sleep medicine and mental health: A guide for psychiatrists and other healthcare professionals* (pp. 320-332). Switzerland, AG: Springer International. doi:10.1007/978-3-030-44447-1
42. **Colvonen, P.**, Straus, L., Drummond, S., Angkaw, A., & **Norman, S. B.** (2020). Examining sleep over time in a randomized control trial comparing two integrated PTSD and alcohol use disorder treatments. *Drug and Alcohol Dependence*. doi:10.1016/j.drugalcdep.2020.107905
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45. Copeland, L., Finley, E., **Vogt, D.**, Perkins, W. S., & **Nilni, Y. I.** (2020). Gender differences in newly separated veterans' use of healthcare. *The American Journal of Managed Care, 26*, 97-104. doi:10.37765/ajmc.2020.42633
46. Coventry, P., Meader, N., Melton, H., Temple, M., Dale, H., Wright, K., **Cloitre, M.**, Karatzias, T., Bisson, J., Roberts, N., Brown, J., Barbui, C., Churchill, R., Lovell, K., McMillan, D., & Gilbody, S. (2020). Psychological and pharmacological interventions for posttraumatic stress disorder and comorbid mental health problems following complex traumatic events: Systematic review and component network meta-analysis. *PLoS Medicine*. doi:10.1371/journal.pmed.1003262
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50. Danitz, S., **Wiltsey Stirman, S.**, Grillo, A., Dichter, M., Driscoll, M., Gerber, M., Gregor, K., Hamilton, A., & **Iverson, K. M.** (2019). When user-centered design meets implementation science: Integrating provider perspectives in the development of an intimate partner violence intervention for women treated in the United States' largest integrated healthcare system. *BMC Women's Health, 19*, 145-155. doi:10.1186/s12905-019-0837-8

Appendix D: Publications by National Center Staff

51. Davis, A., **Averill, L.**, Sepeda, N., Barsuglia, J., & **Amoroso, T.** (2020). Psychedelic treatment for trauma-related psychological and cognitive impairment among U.S. special operations forces veterans. *Chronic Stress*. doi:10.1177/2470547020939564
52. Desai, M. U., Pavlo, A., Davidson, L., **Harpaz-Rotem, I.**, & Rosenheck, R. A. (2019). Context matters: Social, cultural, and political dimensions of PTSD among Vietnam veterans. *Ethical Human Psychology and Psychiatry*, *20*, 113-119. doi:10.1891/1559-4343.20.2.113
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54. Dillon, K., Hale, W. J., LoSavio, S. T., **Wachen, J. S.**, Pruiksma, K. E., Yarvis, J. S., Mintz, J., Litz, B. T., Peterson, A. L., Resick, P. A., & STRONG STAR Consortium (2020). Weekly changes in blame and PTSD among active-duty military personnel receiving Cognitive Processing Therapy. *Behavior Therapy*, *51*, 386-400. doi:10.1016/j.beth.2019.06.008
55. Dillon, K., Van Voorhees, E., Dennis, P. A., Glenn, J. J., Wilks, C. R., **Morland, L. A.**, Beckham, J., & Elbogen, E. (2020). Anger mediates the relationship between posttraumatic stress disorder and suicidal ideation in veterans. *Journal of Affective Disorders*, *269*, 117-124. doi:10.1016/j.jad.2020.03.053
56. Dollar, K., Kirchner, J. E., DePhillippis, D., Ritchie, M. J., **McGee-Vincent, P.**, & Resnick, S. G. (2020). Steps for implementing measurement-based care: Implementation planning guide development and use in quality improvement. *Psychological Services*, *17*, 247-261. doi:10.1037/ser0000368
57. Donaldson, M., Neumark-Sztainer, D., Gaugler, J., Groessl, E., **Kehle-Forbes, S.**, Polusny, M., & Krebs, E. (2020). Yoga practice among veterans with and without chronic pain. *Medical Care*, *58*, S133-S141. doi:10.1097/MLR.0000000000001331
58. Dunn, E., Marini, S., Davis, K. A., Soare, T. W., Zhu, Y., Suderman, M. J., Simpkin, A. J., Smith, A., **Wolf, E. J.**, & Relton, C. L. (2020). Adversity exposure during sensitive periods predicts accelerated epigenetic aging in children. *Psychoneuroendocrinology*, *113*, 104484. doi:10.1016/j.psyneuen.2019.104484
59. Duval, E. R., Sheynin, J., King, A. P., Phan, K. L., Simon, N. M., Martis, B., Porter, K. E., **Norman, S. B.**, Liberzon, I., & Rauch, S. (2020). Neural function during emotion processing and modulation associated with treatment response in a randomized clinical trial for posttraumatic stress disorder. *Depression and Anxiety*, *37*, 670-681. doi:10.1002/da.23022
60. **Eftekhari, A.**, **Crowley, J. J.**, **Mackintosh, M.**, & **Rosen, C. S.** (2020). Predicting treatment dropout among veterans receiving Prolonged Exposure therapy. *Psychological Trauma: Theory, Research, Practice, and Policy*, *12*, 405-412. doi:10.1037/tra0000484
61. Ellickson-Larew, S., Escarfulleri, S., & **Wolf, E. J.** (2020). The dissociative subtype of posttraumatic stress disorder: Forensic considerations and recent controversies. *Psychological Injury and Law*, *13*, 178-186. doi:10.1007/s12207-020-09381-y
62. Erbes, C., **Kuhn, E. R.**, Polusny, M., **Ruzek, J. I.**, **Spoont, M.**, Meis, L. A., Gifford, E., Campbell, E. H., & Taylor, B. C. (2020). A pilot trial of online training for family well-being and veteran treatment initiation for PTSD. *Military Medicine*, *185*, 401-408. doi:10.1093/milmed/usz326
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65. Farmer, C., Rossi, F., Michael, E., & **Kimerling, R.** (2020). Psychotherapy utilization, preferences, and retention among women veterans with post-traumatic stress disorder. *Women's Health Issues*, *30*, 366-373. doi:10.1016/j.whi.2020.06.003
66. Finley, E. P., Garcia, H. A., Ramirez, V. A., Haro, E. K., Mignogna, J., DeBeer, B., & **Wiltsey Stirman, S.** (2019). Treatment selection among posttraumatic stress disorder (PTSD) specialty care providers in the Veterans Health Administration: A thematic analysis. *Psychological Trauma: Theory, Research, Practice, and Policy*, *12*, 251-259. doi:10.1037/tra0000477
67. Fitzpatrick, S., Dworkin, E. R., **Zimmerman, L. E.**, Javorka, M., & Kaysen, D. (2020). Stressors and drinking in sexual minority women: The mediating role of emotion dysregulation. *Psychology of Sexual Orientation and Gender Diversity*, *7*, 46-54. doi:10.1037/sgd0000351
68. Fleming, C. E., Hawrilenko, M., **Wachen, J. S.**, Peterson, A. L., Yarvis, J. S., Borah, A., Litz, B. T., Young-McCaughan, S., Hale, W. J., Mintz, J., Resick, P. A., & The STRONG STAR Consortium (2020). It's about time: Examining the role of session timing in Cognitive Processing Therapy in active duty military personnel. *Journal of Behavioral and Cognitive Therapy*, *30*, 231-239. doi:10.1016/j.jbct.2020.04.001

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69. Foa, E., **McLean, C. P.**, Brown, L., Zang, Y., Rosenfield, D., Zandberg, L., Ealey, W., Hanson, B., Hunter, L., Lillard, I., Patterson, T., Rosado, J., Scott, V., Weber, C., Wise, J., Zamora, C., Mintz, J., Young-McCaughan, S., Peterson, A., & STRONG Star Consortium (2020). The effects of a Prolonged Exposure workshop with and without consultation on provider and patient outcomes: A randomized implementation trial. *Implementation Science, 15*, 59. doi:10.1186/s13012-020-01014-x
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217. Song, J., **Johnson, C. M.**, Shields, N., Masina, T., Monson, C. M., & **Wiltsey Stirman, S.** (2020). Patterns of change in physical functioning and posttraumatic stress disorder with Cognitive Processing Therapy in a randomized controlled implementation trial. *European Journal of Psychotraumatology, 11*, 1801166. doi:10.1080/20008198.20.1801166

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218. Stokes, C., Alonso, J., Andrade, L., Atwoli, L., Cardoso, G., Chiu, W., Dinolova, R., Gureje, O., Karam, A., Karam, E., Kessler, R., Chatterji, S., King, A., Lee, S., Mneimneh, Z., Oladeji, B., Petukhova, M., Rapsey, C., Sampson, N., ... **Street, A. E.**, ... & Bossarte, R. M. (2020). Pre-marital predictors of marital violence in the WHO World Mental Health (WMH) Surveys. *Social Psychiatry and Psychiatric Epidemiology*, *55*, 393-405. doi:10.1007/s00127-019-01703-z
219. Straus, E., **Norman, S. B.**, & **Pietrzak, R. H.** (2020). Determinants of new-onset alcohol use disorder in U.S. military veterans: Results from the National Health and Resilience in Veterans Study. *Addictive Behaviors*, *105*, 106313. doi:10.1016/j.addbeh.2020.106313
220. **Sullivan, D. R.**, **Morrison, F. G.**, **Wolf, E. J.**, **Logue, M. W.**, **Salat, D.**, Fonda, J. R., Fortier, C. B., Stone, A., Schichman, S., Milberg, W., McGlinchey, R., & **Miller, M. W.** (2019). The PPM1F gene moderates the association between PTSD and cortical thickness. *Journal of Affective Disorders*, *249*, 201-209. doi:10.1016/j.jad.2019.08.055
221. **Thompson-Hollands, J.**, **Marx, B. P.**, & **Keane, T. M.** (2020). Enhancing outcomes for PTSD treatment: Commentary on "Treatment augmentation for posttraumatic stress disorder: A systematic review". *Clinical Psychology: Science and Practice*, *27*, e12326. doi:10.1111/cpsp.12326
222. Tripp, J. C., Worley, M. J., Straus, E., Angkaw, A. C., Trim, R. S., & **Norman, S. B.** (2020). Bidirectional relationship of posttraumatic stress disorder (PTSD) symptom severity and alcohol use over the course of integrated treatment. *Psychology of Addictive Behaviors*, *34*, 506-511. doi:10.1037/adb0000564
223. Tripp, J., Angkaw, A., **Schnurr, P. P.**, Trim, R., **Haller, M.**, **Davis, B.**, & **Norman, S. B.** (2020). Residual symptoms of posttraumatic stress disorder and alcohol use disorder following integrated exposure treatment versus coping skills treatment. *Journal of Traumatic Stress*, *33*, 477-487. doi:10.1002/jts.22552
224. Tsai, J., Szymkowiak, D., & **Pietrzak, R. H.** (2020). Delayed homelessness after military discharge: Examination of a sleeper effect. *American Journal of Preventive Medicine*, *59*, 109-117. doi:10.1016/j.amepre.2020.03.001
225. Valenstein-Mah, H., Greer, N., McKenzie, L., Hansen, L., Strom, T., **Wiltsey Stirman, S.**, Wilt, T., & **Kehle-Forbes, S.** (2020). Effectiveness of training methods for delivery of evidence-based psychotherapies: A systematic review. *Implementation Science*, *15*, 40. doi:10.1186/s13012-020-00998-w
226. Valenstein-Mah, H., **Kehle-Forbes, S.**, Nelson, D., Danan, E. R., **Vogt, D.**, & **Spoont, M.** (2019). Gender differences in rates and predictors of individual psychotherapy initiation and completion among Veterans Health Administration users recently diagnosed with PTSD. *Psychological Trauma: Theory, Research, Practice, and Policy*, *11*, 811-819. doi:10.1037/tra0000428
227. Valentine, S., Woulfe, J., & **Shipherd, J. C.** (2019). An evidence-based approach to conceptualizing trauma responses among transgender and gender non-conforming (TGNC) adults. In J. E. Pachankis & S. A. Safren (Eds.), *Handbook of evidence-based mental health practice with LGBT clients* (pp. 268-290). New York, NY: Oxford University Press. doi:10.1093/med-psych/9780190669300.001.0001
228. van Rooij, S., & **Holtzheimer, P. E.** (2019). Deep brain stimulation for depression: Optimism for continued investigation. *Clinical Pharmacology & Therapeutics*, *106*, 706-708. doi:10.1002/cpt.1573
229. **Vogt, D.**, Tyrell, F., **Bramande, E.**, **Nillni, Y. I.**, **Taverna, E.**, Finley, E., Perkins, D., & Copeland, L. (2020). U.S. military veterans' health and well-being in the first year after service. *American Journal of Preventive Medicine*, *58*, 352-360. doi:10.1016/j.amepre.2019.10.016
230. **Walser, R. D.** (2019). *The heart of ACT: Developing a flexible, process-based and client centered practice*. Oakland, CA: New Harbinger.
231. Walter, K. H., Glassman, L. H., Wells, S. Y., Thorp, S. R., & **Morland, L. A.** (2020). The impact of depression severity on treatment outcomes among older male combat veterans with posttraumatic stress disorder. *Journal of Traumatic Stress*, *33*, 345-352. doi:10.1002/jts.22503
232. Walters, E. M., Jenkins, M. M., Nappi, C. M., **Clark, J.**, Lies, J., **Norman, S. B.**, & Drummond, S. P. (2020). The impact of Prolonged Exposure on sleep and enhancing treatment outcomes with evidence-based sleep interventions: A pilot study. *Psychological Trauma: Theory, Research, Practice, and Policy*, *12*, 175-185. doi:10.1037/tra0000478
233. Wells, S., **Morland, L. A.**, Wilhite, E., Grubbs, K., Rauch, S., Acierno, R., & **McLean, C. P.** (2020). Delivering Prolonged Exposure therapy via videoconferencing during the COVID-19 Pandemic: An overview of the research and special considerations for providers. *Journal of Traumatic Stress*, *33*, 380-390. doi:10.1002/jts.22573
234. Wharton, E., **Edwards, K. S.**, **Juhasz, K. M.**, & **Walser, R. D.** (2019). Acceptance-based interventions in the treatment of PTSD: Group and individual pilot data using Acceptance and Commitment Therapy. *Journal of Contextual Behavioral Science*, *14*, 55-64. doi:10.1016/j.jcbs.2019.09.006

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235. **Whitworth, J., Hayes, S.**, Andrews, R., Fonda, J., Beck, B., Hanlon, L., Fortier, C., Milberg, W., & McGlinchey, R. (2020). Cardiorespiratory fitness is associated with better cardiometabolic health and lower PTSD severity in post-9/11 veterans. *Military Medicine*, *185*, e592-e596. doi:10.1093/milmed/usaa005
236. **Whitworth, J.**, Nosrat, S., SantaBarbara, N. J., & Ciccolo, J. T. (2019). Feasibility of resistance exercise for posttraumatic stress and anxiety symptoms: A randomized controlled pilot study. *Journal of Traumatic Stress*, *32*, 977-984. doi:10.1002/jts.22464
237. Williams, A. M., **Galovski, T. E.**, & Resick, P. A. (2019). Cognitive Processing Therapy. In B. A. Moore & W. E. Penk (Eds.), *Treating PTSD in military personnel: A clinical handbook (2nd ed)* (pp. 63-77). New York, NY: Guilford.
238. Williston, S., **Bramande, E., Vogt, D., Iverson, K. M., & Fox-Galalis, A. B.** (2020). An examination of the roles of mental health literacy, treatment-seeking stigma, and perceived need for care in female veterans' service use. *Psychiatric Services*, *71*, 144-150. doi:10.1176/appi.ps.201800405
239. Wilson, S., Hintz, E., MacDermid Wadsworth, S., Topp, D., Southwell, K., & **Spoont, M.** (2019). Female U.S. military veterans' (non)disclosure of mental health issues with family and friends: Privacy rules and boundary management. *Health Communication*, *36*, 412-423. doi:10.1080/10410236.2019.1693128
240. Worley, C. B., LoSavio, S. T., Aajmain, S. T., **Rosen, C. S., Wiltsey Stirman, S., & Sloan, D. M.** (2020). Training during a pandemic: Successes, challenges, and practical guidance from a virtual facilitated learning collaborative training program for Written Exposure Therapy. *Journal of Traumatic Stress*, *33*, 634-642. doi:10.1002/jts.22589
241. Youn, S., **Mackintosh, M., Wiltsey Stirman, S.**, Patrick, K., Aguilar Silvan, Y., Bartuska, A., Shtasel, D., & Marques, L. (2019). Client-level predictors of treatment engagement, outcome and dropout: Moving beyond demographics. *General Psychiatry*, *32*, e100153. doi:10.1136/gpsych-2019-100153
242. **Zelkowitz, R.**, & Cole, D. (2020). Longitudinal relations of self-criticism with disordered eating behaviors and nonsuicidal self-injury. *International Journal of Eating Disorders*, *53*, 1097-1107. doi:10.1002/eat.23284
243. Zhang, Y., **Avery, T.**, Vakhtin, A., Mathersul, D., Tranvinh, E., Wintermark, M., Massaband, P., Ashford, J. W., Bayley, P., & Furst, A. (2020). Brainstem atrophy in Gulf War illness. *NeuroToxicology*, *78*, 71-79. doi:10.1016/j.neuro.2020.02.006
244. Zhou, H., Sealock, J., Sanchez-Roige, S., Clarke, T., Levey, D., Cheng, Z., Li, B., Polimanti, R., Kember, R., Smith, R., Thygesen, J., Morgan, M., Atkinson, S., Thursz, M., Nyegaard, M., Mattheisen, M., Børghlum, A., Johnson, E., Justice, A., ... **Gelernter, J.** (2020). Genome-wide meta-analysis of problematic alcohol use in 435,563 individuals yields insights into biology and relationships with other traits. *Nature Neuroscience*, *23*, 809-818. doi:10.1038/s41593-020-0643-5
245. Zulman, D., Wong, E., Slightam, C., Gregory, A., Jacobs, J., **Kimerling, R.**, Blonigen, D., Peters, J., & Heyworth, L. (2019). Making connections: Nationwide implementation of video telehealth tablets to address access barriers in veterans. *JAMIA Open*, *2*, 323-329. doi:10.1093/jamiaopen/ooz024
246. Zuromski, K., Bernecker, S., Chu, C., Wilks, C., Gutierrez, P. M., Joiner, T., Liu, H., Naifeh, J., Nock, M., Sampson, N., Zaslavsky, A., Stein, M., Ursano, R., Kessler, R., Heeringa, S., Wagner, J., Cox, K., Aliaga, P., Benedek, D., ... **Jain, S.**, ... & Zaslavsky, A. (2020). Pre-deployment predictors of suicide attempt during and after combat deployment: Results from the Army Study to Assess Risk and Resilience in Servicemembers. *Journal of Psychiatric Research*, *121*, 214-221. doi:10.1016/j.jpsychires.2019.12.003

APPENDIX E

IN-PRESS PUBLICATIONS BY NATIONAL CENTER STAFF

1. **Abdallah, C., & Krystal, J. H.** (2020). Ketamine and rapid acting antidepressants: Are we ready to cure, rather than treat depression? *Behavioural Brain Research*. Advance online publication. doi:10.1016/j.bbr.2020.112628
2. Adams, T., Forte, J., Fogle, B., **Southwick, S., & Pietrzak, R. H.** (2020). Self-reported exercise frequency and PTSD: Results from the National Health and Resilience in Veterans Study. *Acta Psychiatrica Scandinavica*. Advance online publication. doi:10.1111/acps.13234
3. **Arditte Hall, K., & Mitchell, K. S.** (2020). The Affective Control Scale: Factor structure and associations with posttraumatic stress symptoms in trauma-exposed male veterans. *Psychological Trauma: Theory, Research, Practice, and Policy*. Advance online publication. doi:10.1037/tra0000575
4. **Arditte Hall, K.,** Werner, K. B., Griffin, M. G., & **Galovski, T. E.** (2020). The effects of Cognitive Processing Therapy + hypnosis on objective sleep quality in women with posttraumatic stress disorder. *Psychological Trauma: Theory, Research, Practice, and Policy*. Advance online publication. doi:10.1037/tra0000970
5. **Avery, T.,** Schulz-Heik, R., Friedman, M., Mahoney, L., Ahmed, N., & Bayley, P. (2020). Clinical yoga program utilization in a large health care system. *Psychological Services*. Advance online publication. doi:10.1037/ser0000420
6. Awasthi, S., Pan, H., LeDoux, J. E., **Cloitre, M.,** Altemus, M., McEwen, B., Silbersweig, D., & Stern, E. (2020). The bed nucleus of the stria terminalis and functionally linked neurocircuitry modulate emotion processing and HPA axis dysfunction in posttraumatic stress disorder. *NeuroImage: Clinical*. Advance online publication. doi:10.1016/j.nicl.2020.102442
7. **Banducci, A. N., Mahoney, C. T., & Street, A. E.** (in press). Military sexual trauma. In C. H. Warner & C. Castro (Eds.), *Veteran and military mental health: The psychiatrist's role*. Washington, DC: American Psychiatric Association.
8. **Banducci, A. N., McCaughey, V., Gradus, J. L., & Street, A. E.** (2019). The associations between deployment experiences, PTSD, and alcohol use among male and female veterans. *Addictive Behaviors*. Advance online publication. doi:10.1016/j.addbeh.2019.106032
9. Beidas, R., & **Wiltsey Stirman, S.** (2020). Realizing the promise of learning organizations to transform mental health care: Telepsychiatry care as an exemplar. *Psychiatric Services*. Advance online publication. doi:10.1176/appi.ps.202000257
10. Blonigen, D. M., Harris-Olenak, B., **Kuhn, E. R.,** Timko, C., Humphreys, K., & Dulin, P. (2020). Using peers to increase veterans' engagement in a smartphone application for unhealthy alcohol use: A pilot study of acceptability and utility. *Psychology of Addictive Behaviors*. Advance online publication. doi:10.1037/adb0000598
11. Blosnich, J. R., Boyer, T. L., Brown, G. R., Kauth, M. R., & **Shipperd, J. C.** (in press). Differences in methods of suicide death among transgender and non-transgender veterans. *Medical Care*.
12. Boness, C., Hershenberg, R., Kaye, J., **Mackintosh, M.,** Grasso, D., Noser, A., & Raffa, S. (2020). An evaluation of cognitive behavioral therapy for insomnia: A systematic review and application of Tolin's Criteria for empirically supported treatments. *Clinical Psychology: Science and Practice*. Advance online publication. doi:10.1111/cpsp.12348
13. Chen, C., Salim, R., Rodriguez, J., Singh, R., Schechter, C., Dasaro, C., Todd, A., Crane, M., Moline, J., Udasin, I., Harrison, D., Luft, B., **Southwick, S., Pietrzak, R. H.,** & Feder, A. (2020). The burden of subthreshold posttraumatic stress disorder in World Trade Center responders in the second decade after 9/11. *The Journal of Clinical Psychiatry*. Advance online publication. doi:10.4088/JCP.19m12881
14. Carvalho, C., Wendt, F., Maihofer, A., Stein, D., Stein, M., Sumner, J., Hemmings, S., Nievergelt, C., Koenen, K., **Gelernter, J.,** Belanger, S., & Polimanti, R. (2020). Dissecting the genetic association of C-reactive protein with PTSD, traumatic events, and social support. *Neuropsychopharmacology*. doi:10.1038/s41386-020-0655-6
15. **Colvonen, P.,** Almklov, E., Tripp, J., Ulmer, C., Pittman, J., & Afari, N. (in press). Prevalence rates and correlates of insomnia disorder in post 9/11 veterans enrolling in VA healthcare. *SLEEP*.

Appendix E: In-Press Publications by National Center Staff

16. Crowe, C., Collie, C., **Johnson, C. M.**, & **Wiltsey Stirman, S.** (in press). An intervention mapping process to increase evidence-based psychotherapy within a complex healthcare system. *American Psychologist*.
17. **Davison, E., Spiro, A.**, & **Pless Kaiser, A.** (in press). The reemergence of trauma in aging U.S. military veterans: Engaging with the past. *Trauma & Gewalt*.
18. Dennis, E. L., Disner, S. G., Fani, N., Salminen, L. E., **Logue, M. W.**, Clarke, E., Haswell, C., **Averill, C. L.**, Baugh, L. A., Bomyea, J., Bruce, S. E., Cha, J., Choi, K., Davenport, N. D., Densmore, M., Plessis, S., Forster, G. L., Frijling, J. L., Gönenc, A., Gruber, S., ... **Hayes, J. P.**, ... **Krystal, J. H.**, ... **Sullivan, D. R.**, ... **Abdallah, C.**, & Morey, R. (2019). Altered white matter microstructural organization in post-traumatic stress disorder across 3,049 adults: Results from the PGC-ENIGMA PTSD consortium. *Molecular Psychiatry*. Advance online publication. doi:10.1038/s41380-019-0631-x
19. Dillon, K., Medenblik, A. M., Mosher, T. M., Elbogen, E., **Morland, L. A.**, & Beckham, J. (2020). Using interpretation bias modification to reduce anger in veterans with posttraumatic stress disorder: A pilot study. *Journal of Traumatic Stress*. Advance online publication. doi:10.1002/jts.22525
20. Dufort, V. M., **Bernardy, N. C.**, Maguen, S., Hoyt, J. E., Litt, E., Patterson, O. V., Leonard, C., & **Shiner, B.** (in press). Geographic variation in initiation of evidence-based psychotherapy among veterans with PTSD. *Military Medicine*.
21. **Dutra, S., Lee, D. J., Marx, B. P.**, & **Keane, T. M.** (in press). Assessment of posttraumatic stress disorder. In D. M. Benedek & G. H. Wynn (Eds.), *Clinical manual for assessment of PTSD*. Washington, DC: American Psychiatric Press.
22. Enggasser, J., Brief, D. J., **Livingston, N.**, Ameral, V., Helmuth, E., Rosenbloom, D., Litwack, S., Roy, M., Solhan, M., & **Keane, T. M.** (in press). Public implementation of a web-based program for veterans with risky alcohol use and PTSD: A RE-AIM evaluation of VetChange. *Journal of Substance Abuse Treatment*.
23. **Esterman, M.**, Stumps, A., Jagger-Rickels, A., Rothlein, D., DeGutis, J., Fortenbaugh, F., Romer, A., Milberg, W., **Marx, B. P.**, & McGlinchey, R. (in press). Evaluating the evidence for a neuroimaging subtype of posttraumatic stress disorder. *Science Translational Medicine*.
24. Fina, B. A., Wright, E. C., **Norman, S. B.**, Acierio, R., **Cuccurullo, L. J.**, Dondanville, K. A., Moring, J. C., Brown, L. A., & Foa, E. B. (2020). Conducting Prolonged Exposure for PTSD during the COVID-19 pandemic: Considerations for treatment. *Cognitive Behavioral Practice*. Advance online publication. doi:10.1016/j.cbpra.2020.09.003
25. Fortier, C. B., **Whitworth, J.**, Fonda, J. R., Currao, A., Beck, B. M., Levin, L., **Esterman, M.**, Milberg, W. P., & McGlinchey, R. E. (2020). Early adolescent binge drinking increases risk of psychopathology in post-9/11 veterans and mild traumatic brain injury exacerbates symptom severity. *Alcohol and Alcoholism*. Advance online publication. doi:10.1093/alcalc/aga075
26. **Franz, M., Pless Kaiser, A.**, Phillips, R., **Lee, L. O., Lawrence, A., Taft, C. T., & Vasterling, J. J.** (2020). Associations of warzone veteran mental health with partner mental health and family functioning: Family Foundations Study. *Depression and Anxiety*. Advance online publication. doi:10.1002/da.23083
27. **Friedman, M. J.** (in press). PTSD in DSM-5: New wines in an old bottle? In G. H. Wynn & D. M. Benedek (Eds.), *Posttraumatic stress disorders, (2nd ed.)*. Washington, DC: American Psychiatric Publishing.
28. **Friedman, M. J.**, & Sonis, J. H. (in press). What psychologists should know about pharmacotherapy for PTSD. In R. Halfond, V. Wright, & L. Bufka (Eds.), *PTSD casebook*. Washington, DC: American Psychological Association.
29. **Friedman, M. J., Keane, T. M., & Schnurr, P. P.** (in press). *Handbook of PTSD: Science and practice, 3rd edition*. New York, NY: Guilford.
30. **Galovski, T. E., Smith, B. N.**, Micol, R. L., & **Resick, P. A.** (in press). Interpersonal violence and head injury: The effects of treatment for PTSD. *Psychological Trauma: Theory, Research, Practice, and Policy*.
31. Gilbar, O., **Taft, C. T.**, & Dekel, R. (2020). Male intimate partner violence: Examining the roles of childhood trauma, PTSD symptoms, and dominance. *Journal of Family Psychology*. Advance online publication. doi:10.1037/fam0000669
32. **Gnall, K., Cole, H. E.**, Creech, S. K., & **Taft, C. T.** (in press). Client experiences of the Strength at Home Intimate Partner Violence Program: A qualitative analysis. *Partner Abuse*.
33. **Gradus, J. L.**, Rosellini, A. J., Horvath-Puho, E., Jiang, T., **Street, A. E.**, Galatzer-Levy, I., Lash, T. L., & Sørensen, H. T. (in press). Predicting sex-specific non-fatal suicide attempt risk using machine learning and data from Danish national registries. *American Journal of Epidemiology*.
34. **Grillo, A.**, Danitz, S. B., Dichter, M. E., Driscoll, M., Gerber, M. R., Hamilton, A. B., **Wiltsey Stirman, S.**, & **Iverson, K. M.** (2019). Strides toward recovery from intimate partner violence: Elucidating patient-centered outcomes to optimize a brief counseling intervention for women. *Journal of Interpersonal Violence*. Advance online publication. doi:10.1177/0886260519840408

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35. Gulliver, S. B., Zimering, R. T., **Knight, J. A.**, Morissette, S. B., Kamholz, B. W., Pennington, M. L., Dobani, F., Carpenter, T. P., Kimbrel, N. A., **Keane, T. M.**, & Meyer, E. C. (in press). A prospective study of firefighters' PTSD and depression symptoms: The first three years of service. *Psychological Trauma: Theory, Research, Practice and Policy*.
36. Hagerty, S. L., Wielgosz, J., Kraemer, J., Nguyen, H., Loew, D., & **Kaysen, D. L.** (2020). Best practices for approaching Cognitive Processing Therapy and Prolonged Exposure during the COVID-19 pandemic. *Journal of Traumatic Stress*. Advance online publication. doi:10.1002/jts.22583
37. Hahn, C., Turchik, J., & **Kimerling, R.** (2020). A latent class analysis of mental health beliefs related to military sexual trauma. *Journal of Traumatic Stress*. Advance online publication. doi:10.1002/jts.22585
38. Harlé, K. M., Simmons, A. N., **Norman, S. B.**, & Spadoni, A. D. (2020). Neural affective mechanisms associated with treatment responsiveness in veterans with PTSD and comorbid alcohol use disorder. *Psychiatry Research: Neuroimaging*. Advance online publication. doi:10.1016/j.psychres.2020.111172
39. Haviland, M., **Nillni, Y. I.**, Fox, M., Savitz, D., Hatch, E., Rothman, K., Hacker, M., Wang, T., & Wise, L. (2020). Psychotropic medication use during pregnancy and gestational age at delivery. *Annals of Epidemiology*. Advance online publication. doi:10.1016/j.annepidem.2020.08.010
40. Herbert, M., Malaktaris, A., Lyons, R., & **Norman, S. B.** (2020). Trauma related guilt and pain among veterans with PTSD. *Psychiatry Research*. Advance online publication. doi:10.1016/j.psychres.2020.112820
41. Herzog, S., Fogle, B. M., **Harpaz-Rotem, I.**, Tsai, J., DePierro, J., & **Pietrzak, R. H.** (2020). Dissociative symptoms predict risk for the development of PTSD: Results from the National Health and Resilience in Veterans Study. *Journal of Psychiatric Research*. Advance online publication. doi:10.1016/j.jpsychires.2020.09.018
42. Hill, M. L., Nichter, B. M., **Norman, S. B.**, **Loflin, M. J.**, & **Pietrzak, R. H.** (in press). Burden of cannabis use and disorder in the U.S. veteran population: Psychiatric comorbidity, suicidality, and service utilization. *Journal of Affective Disorders*.
43. **Holmes, S.**, Gallezot, J., **Davis, M.**, **DellaGioia, N.**, Matuskey, D., Nabulsi, N., **Krystal, J. H.**, Javitch, J., DeLorenzo, C., Carson, R., & **Esterlis, I.** (2019). Measuring the effects of ketamine on mGluR5 using [18F]FPEB and PET. *Journal of Cerebral Blood Flow & Metabolism*. Advance online publication. doi:10.1177/0271678X19886316
44. Huckins, J., DaSilva, A., Hedlund, E., Murphy, E., Rogers, C., Wang, W., Obuchi, M., **Holtzheimer, P. E.**, Wagner, D., & Campbell, A. (2020). Causal factors of anxiety and depression in college students: Longitudinal ecological momentary assessment and causal analysis using Peter and Clark Momentary Conditional Independence. *JMIR Mental Health*. Advance online publication. doi:10.2196/16684
45. Huckins, J., daSilva, A., Wang, W., Hedlund, E., Rogers, C., Nepal, S., Wu, J., Obuchi, M., Murphy, E., Meyer, M., Wagner, D., **Holtzheimer, P. E.**, & Campbell, A. (2020). Mental health and behavior of college students during the early phases of the COVID-19 pandemic: Longitudinal smartphone and ecological momentary assessment study. *Journal of Medical Internet Research*. Advance online publication. doi:10.2196/20185
46. Huckins, L. M., Breen, M. S., Chatzinakos, C., Hartmann, J., Klengel, T., Almeida, A., Dobbyn, A., Kiran, G., Hoffman, G. E., Klengel, C., **Logue, M. W.**, ... **Miller, M. W.**, ... & Daskalakis, N. P. (2020). Analysis of genetically regulated gene expression identifies a prefrontal PTSD gene, SNRNP35, specific to military cohorts. *Cell Reports*. Advance online publication. doi:10.1016/j.celrep.2020.107716
47. Hyland, P., Karatzias, T., Shevlin, M., McElroy, E., Ben-Ezra, M., **Cloitre, M.**, & Brewin, C. R. (2020). Does requiring trauma exposure affect rates of ICD-11 PTSD and complex PTSD? Implications for DSM-5. *Psychological Trauma: Theory, Research, Practice, and Policy*.
48. **Jamison, A. L.**, Slightam, C., Bertram, F., Kim, S., & Roth, W. (2019). Randomized clinical trial of capnometry-assisted respiratory training in veterans with posttraumatic stress disorder hyperarousal. *Psychological Trauma: Theory, Research, Practice, and Policy*. Advance online publication. doi:10.1037/tra0000525
49. Jiang, T., Dutra, S., **Lee, D. J.**, Rosellini, A., Gauthier, G., **Keane, T. M.**, Gradus, J., & **Marx, B. P.** (2020). Toward reduced burden in evidence-based assessment of PTSD: A machine learning study. *Assessment*. Advance online publication. doi:10.1177/1073191120947797
50. Johnson, J., Hailemariam, M., Zlotnick, C., Richie, F., Sinclair, J., Chuong, A., & **Wiltsey Stirman, S.** (in press). Mixed methods analysis of implementation of Interpersonal Psychotherapy (IPT) for major depressive disorder in a Hybrid Type I Randomized Trial. *Administration and Policy in Mental Health Services and Mental Health Services Research*.
51. Karatzias, T., Shevlin, M., Ford, J. D., Fyvie, C., Grandison, G., Hyland, P., & **Cloitre, M.** (in press). Childhood trauma, attachment orientation and complex PTSD (CPTSD) symptoms in a clinical sample: Implications for treatment. *Development and Psychopathology*.

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52. **Kehle-Forbes, S.**, Chen, S., Polusny, M., Lynch, K., Koffel, E., Ingram, E., Foa, E., Van Horn, D., Drapkin, M., Yusko, D., & Oslin, D. W. (2019). A randomized controlled trial evaluating integrated versus phased application of evidence-based psychotherapies for military veterans with comorbid PTSD and substance use disorders. *Drug and Alcohol Dependence*. Advance online publication. doi:10.1016/j.drugalcdep.2019.107647
53. **Kehle-Forbes, S.**, Gerould, H., Polusny, M. A., Sayer, N. A., & Partin, M. R. (2020). "It leaves me very skeptical": Messaging in marketing Prolonged Exposure and Cognitive Processing Therapy to veterans with PTSD. *Psychological Trauma: Theory, Research, Practice, and Policy*. Advance online publication. doi:10.1037/tra0000550
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55. Khan, A., Holder, N., Li, Y., **Shiner, B.**, Madden, E., Seal, K. H., Neylan, T. C., & Maguen, S. (in press). How do gender and military sexual trauma impact PTSD symptoms in Cognitive Processing Therapy and Prolonged Exposure? *Journal of Psychiatric Research*.
56. Kim, B., Fonda, J., Hauger, R. L., Pinna, G., Anderson, G., Valovski, I., & **Rasmusson, A. M.** (2020). Composite contributions of cerebrospinal fluid GABAergic neurosteroids, neuropeptide Y and interleukin-6 to PTSD symptom severity in men with PTSD. *Neurobiology of Stress*. Advance online publication. doi:10.1016/j.ynstr.2020.100220
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58. **Kimerling, R.**, Weitlauf, J., & **Street, A. E.** (in press). Gender issues in PTSD. In **M. J. Friedman, T. M. Keane, P. P. Schnurr, & P. A. Resick** (Eds.), *Handbook of PTSD*. New York, NY: Guilford Press.
59. **Klein, A., Bovin, M. J., Keane, T. M., & Marx, B. P.** (in press). The role of negative affect in differentiating PTSD, depression, and their comorbidity among United States veterans. *Journal of Traumatic Stress*.
60. **La Bash, H., & Wiltsey Stirman, S.** (in press). Dissemination and implementation of evidence-based interventions for adults with PTSD. In **D. M. Sloan & J. G. Beck** (Eds.), *The Oxford handbook of traumatic stress disorders, 2nd edition*. New York, NY: Oxford University Press.
61. **LaMotte, A. D., Pless Kaiser, A., Lee, L. O., Supelana, C., Taft, C. T., & Vasterling, J. J.** (2020). Factors influencing family environment reporting concordance among war zone veterans and their partners. *Assessment*. Advance online publication. doi:10.1177%2F1073191120922619
62. Landes, S. J., **Smith, B. N.**, Matthieu, M. M., McBain, S. A., & Ray, E. S. (2019). Challenges and potential solutions to implementing phone coaching in dialectical behavior therapy. *Cognitive and Behavioral Practice*. Advance online publication. doi:10.1016/j.cbpra.2019.10.005
63. Lang, A. J., & **Niles, B. L.** (in press). Complementary, alternative and integrative interventions. In J. I. Bisson & D. Forbes (Eds.), *Effective treatments for PTSD, 3rd ed.* New York, NY: Guilford Press.
64. Larsen, S. E., **Mackintosh, M., La Bash, H., Evans, W., Suvak, M. K., Shields, N., Lane, J., Sijercic, I., Monson, C. M., & Wiltsey Stirman, S.** (2020). Temporary PTSD symptom increases among individuals receiving CPT in a hybrid effectiveness-implementation trial: Potential predictors and association with overall symptom change trajectory. *Psychological Trauma: Theory, Research, Practice, and Policy*. Advance online publication. doi:10.1037/tra0000545
65. Larsen, S., **Sippel, L. M., & Schnurr, P. P.** (2020). Let's all get on the same page: A commentary on "Defining response and nonresponse to PTSD treatments: A systematic review". *Clinical Psychology: Science and Practice*. Advance online publication. doi:10.1111/cpsp.12364
66. **Lee, D. J.**, Bryan, C., & Rudd, M. (2020). Longitudinal suicide ideation trajectories in a clinical trial of brief CBT for U.S. military personnel recently discharged from psychiatric hospitalization. *Psychiatry Research*. Advance online publication. doi:10.1016/j.psychres.2020.113335
67. Li, G., Raffield, L., **Logue, M. W., Miller, M. W., Santos, H. P., O'Shea, T. M., Fryh, R. C., & Li, Y.** (in press). CUE: CpG impUtation Ensemble for DNA methylation levels across the Human Methylation450 (HM450) and EPIC (HM850) BeadChip platforms. *Epigenetics*.
68. Lord, K. A., Suvak, M. K., **Holmes, S., Shields, N., Sijercic, I., Wagner, A. C., Wiltsey Stirman, S., & Monson, C.** (in press). Bidirectional relationships between posttraumatic stress disorder (PTSD) and social functioning during Cognitive Processing Therapy. *Behavior Therapy*.
69. Lungu, A., Boone, M., Chen, S. Y., Chen, C., & **Walser, R. D.** (in press). Effectiveness of a cognitive behavioral coaching program delivered via video in real world settings. *Telemedicine and eHealth*.

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70. Lyons, R., **Haller, M.**, Rivera, G., & **Norman, S. B.** (2020). Negative affect mediates the association between posttraumatic cognitions and craving in veterans with posttraumatic stress disorder and alcohol use disorder. *Journal of Dual Diagnosis*. Advance online publication. doi:10.1080/15504263.2020.1741754
71. **Macia, K. S.**, Moschetto, J. M., Wickham, R. E., Brown, L. M., & Waelde, L. C. (in press). Cumulative trauma and chronic homelessness among veterans: The role of responses to intrusions and emotion regulation. *Journal of Traumatic Stress*.
72. **Macia, K. S.**, Raines, A. M., **Maieritsch, K. P.**, & Franklin, C. L. (in press). PTSD networks of veterans with combat versus non-combat types of index trauma. *Journal of Affective Disorders*.
73. **Mahoney, C. T.**, Lynch, S. M., & Benight, C. C. (2019). The indirect effect of coping self-efficacy on the relation between sexual violence and PTSD symptoms. *Journal of Interpersonal Violence*. Advance online publication. doi:10.1177/0886260519881525
74. **Mahoney, C. T.**, **Moshier, S. J.**, Rosen, R. C., **Keane, T. M.**, & **Marx, B. P.** (in press). Heightened healthcare utilization and risk of mental disorders among veterans with comorbid opioid use disorder and posttraumatic stress disorder. *Addictive Behaviors*.
75. **Mahoney, C. T.**, Shayani, D. R., & **Iverson, K. M.** (2020). Differential indirect effects of past-year intimate partner violence on the association between military sexual trauma and PTSD symptom clusters. *Traumatology*. Advance online publication. doi:10.1037/trm0000242
76. **Mahoney, C. T.**, Zweig, I., **Marx, B. P.**, & **Keane, T. M.** (in press). Cross-lagged effects of posttraumatic stress disorder symptom severity and cigarette smoking among OEF/OIF/OND veterans. *Depression and Anxiety*.
77. Malgaroli, M., Hull, D., Kao, J., **Wiltsey Stirman, S.**, & Resick, P. (in press). Telemental health interventions for PTSD delivered via asynchronous messaging: Trajectories of treatment outcomes. *Journal of Medical Internet Research*.
78. Martin, P. I., Naeser, M. A., Chao, L., Krengel, M. H., Ho, M. D., Yee, M., Lew, R., **Knight, J. A.**, & Hamblin, M. R. (in press). Transcranial photobiomodulation to improve cognition in Gulf War Illness. *Frontiers in Neurology/Neurorehabilitation*.
79. **Marx, B. P.**, **Thompson-Hollands, J.**, **Lee, D. J.**, **Resick, P. A.**, & **Sloan, D. M.** (2020). Estimated intelligence moderates Cognitive Processing Therapy outcome for posttraumatic stress symptoms. *Behavior Therapy*. Advance online publication. doi:10.1016/j.beth.2020.03.008
80. **McClendon, J.**, Copeland, L., Finley, E., & **Vogt, D.** (in press). Patterns and correlates of racial/ethnic disparities in posttraumatic stress disorder screening among recently separated veterans. *Journal of Anxiety Disorders*.
81. **McClendon, J.**, Kressin, N., Copeland, L. A., Finley, E. P., & **Vogt, D.** (in press). The impact of discriminatory stress on changes in posttraumatic stress severity at the intersection of race/ethnicity and gender. *Journal of Trauma & Dissociation*.
82. McGeary, D., **Resick, P. A.**, Penzien, D., Eappen, B. C., Jaramillo, C., McGeary, C., Nabit, Y., Peterson, A., Young-McCaughan, S., **Keane, T. M.**, Reed, D. E., Morin, D. J., Sico, J., Pangarkar, S., Thoule, M., & Consortium to Alleviate PTSD (in press). Reason to doubt the ICHD-3 inclusion criteria for posttraumatic headaches: A nested cohort study. *Cephalalgia*.
83. **McLean, C. P.** (2020). Introduction to the special issue: The impact and treatment of sleep disturbance. *Behavior Therapy*. Advance online publication. doi:10.1016/j.beth.2020.02.004
84. Miles, S., Kent, T., Stanley, M. A., Thompson, K. E., Sharp, C., **Niles, B. L.**, Young-McCaughan, S., Mintz, J., Roache, J., Litz, B., Hale, W., Stanford, M., **Keane, T. M.**, & Peterson, A. (2020). Manage emotions to reduce aggression. *Journal of Nervous & Mental Disease*. Advance online publication. doi:10.1097/NMD.0000000000001229
85. Miller, C., Baumann, A., & **Wiltsey Stirman, S.** (in press). Iterative decision-making for evaluation of adaptations (IDEA): A decision tree for balancing adaptation, fidelity, and intervention impact. *Journal of Community Psychology*.
86. **Mitchell, K. S.**, **Scioli, E. R.**, **Galovski, T. E.**, Belfer, P. L., & Cooper, Z. (in press). Posttraumatic stress disorder and eating disorders: Maintaining mechanisms and treatment targets. *Eating Disorders: The Journal of Treatment and Prevention*.
87. Montgomery, A. E., **Shipherd, J. C.**, Kauth, M. R., Harris, K. W., & Blosnich, J. (in press). Use of Veterans Health Administration Homeless Programs among transgender and non-transgender veterans experiencing self-reported housing instability. *Journal of Health Care for the Poor and Underserved*.
88. **Morland, L. A.**, **Mackintosh, M.**, Glassman, L. H., & **Schnurr, P. P.** (in press). Clinical interventions for problematic anger. In A. B. Adler & D. Forbes (Eds.), *Anger at work: Advancing prevention, intervention, and treatment in high-risk occupations*. Washington, DC: American Psychiatric Association.

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89. Nichter, B., Hill, M., **Norman, S. B., Haller, M., & Pietrzak, R. H.** (in press). Mental health treatment utilization among U.S. military veterans with suicidal ideation: Results from the National Health and Resilience in Veterans Study. *Journal of Psychiatric Research*.
90. Nievergelt, C., Maihofer, A., Klengel, T., Atkinson, E., Chen, C., Choi, K., Coleman, J., Dalvie, S., Duncan, L., **Gelernter, J., Levey, D., Logue, M. W., ... Johnson, C. M., ... Norman, S. B., ... Wolf, E. J., ... & Koenen, K.** (2019). International meta-analysis of PTSD genome-wide association studies identifies sex- and ancestry-specific genetic risk loci. *Nature Communications*. Advance online publication. doi:10.1038/s41467-019-12576-w
91. **Niles, B. L.**, Williston, S. K., & Mori, D. L. (in press). Mindfulness approaches to treating complex PTSD. In C. Courtois & J. D. Ford (Eds.), *Treating complex traumatic stress disorders 2nd ed.* New York, NY: Guilford Press.
92. **Ortigo, K. M., Bauer, A., & Cloitre, M.** (in press). Skills Training in Affective and Interpersonal Regulation (STAIR) narrative therapy: Making meaning while learning skills. In M. Tull & N. Kimbrel (Eds.), *Emotion in posttraumatic stress disorder*. New York, NY: Guilford Press.
93. Pace, B. T., Song, J., Suvak, M. K., Shields, N., Monson, C. M., & **Wiltsey Stirman, S.** (in press). Therapist self-efficacy in delivering Cognitive Processing Therapy. *Cognitive Behavioral Practice*. doi:10.1016/j.cbpra.2020.08.002
94. Pacella-LaBarbara, M. L., Suffoletto, B. P., **Kuhn, E. R.**, Germain, A., Jaramillo, S., Repine, M., & Callaway, C. W. (2020). A pilot randomized controlled trial of the PTSD Coach app following motor vehicle crash-related injury. *Academic Emergency Medicine*. Advance online publication. doi:10.1111/acem.14000
95. Park, C. L., **Pless Kaiser, A.**, Finkelstein-Fox, L., **Spiro, A.**, & **Wachen, J. S.** (in press). Risk and resilience factors for traumatic stress disorders. In G. Beck & D. Sloan (Eds.), *Oxford handbook of traumatic stress disorders*. New York, NY: Oxford University Press.
96. Perkins, W. S., Aronson, K. R., Morgan, N., Bleser, J., **Vogt, D.**, Copeland, L. A., Finley, E. P., & Gilman, C. L. (in press). Veterans' use of programs and services as they transition to civilian life: Baseline assessment for the Veteran Metrics Initiative. *Journal of Social Service Research*.
97. **Petrakis, I., Ralevski, E.**, Arias, A., **DeNegre, D.**, Newcomb, J., Gianoli, M., **McCarthy, E., Meshberg-Cohen, S.**, & Yoon, G. (2020). Zonisamide as an adjunctive treatment to Cognitive Processing Therapy for veterans with posttraumatic stress disorder and comorbid alcohol use disorder: A pilot study. *The American Journal on Addictions*. Advance online publication. doi:10.1111/ajad.13061
98. **Pietrzak, R. H.**, Huang, Y., Corsi-Travali, S., Zheng, M., Lin, S., Henry, S., Potenza, M., Piomelli, D., Carson, R., & Neumeister, A. (2020). Retraction note: Cannabinoid type 1 receptor availability in the amygdala mediates threat processing in trauma survivors. *Neuropsychopharmacology*. Advance online publication. doi:10.1038/s41386-020-00818-1
99. **Pineles, S. L., Nillni, Y. I.**, Pinna, G., Webb, A., **Arditte Hall, K.**, Fonda, J. R., Irvine, J., **King, M. W.**, Hauger, R. L., **Resick, P. A.**, Orr, S. P., & **Rasmusson, A. M.** (in press). Associations between PTSD related extinction retention deficits in women and plasma steroids that modulate brain GABA A and NMDA receptor activity. *Neurobiology of Stress*.
100. Raines, A. M., **Macia, K. S.**, Currier, J., Compton, S. E., Ennis, C. R., Constans, J., & Franklin, C. L. (2020). Spiritual struggles and suicidal ideation in veterans seeking outpatient treatment: The mediating role of perceived burdensomeness. *Psychology of Religion and Spirituality*. Advance online publication. doi:10.1037/rel0000311
101. **Reuman, L.**, & **Thompson-Hollands, J.** (2020). Family accommodation in PTSD: Proposed considerations and distinctions from the established transdiagnostic literature. *Clinical Psychology: Science and Practice*. Advance online publication. doi:10.1111/CPSP.12375
102. **Reuman, L., Thompson-Hollands, J.**, & Abramowitz, J. S. (in press). Better together: A review and recommendations to optimize research on family involvement in CBT for anxiety and related disorders. *Behavior Therapy*.
103. Richardson, C. B., Chesnut, R. P., Morgan, N. R., Bleser, J. A., Perkins, W. S., **Vogt, D.**, Copeland, L. A., & Finley, E. (2019). Examining the factor structure of the Moral Injury Events Scale in a veteran sample. *Military Medicine*. Advance online publication. doi:10.1093/milmed/usz129
104. Riva-Posse, P., Crowell, A., Wright, K., Waters, A., Choi, K., Garlow, S., **Holtzheimer, P. E.**, Gross, R., & Mayberg, H. (2020). Rapid antidepressant effects of deep brain stimulation and their relation to surgical protocol. *Biological Psychiatry*. Advance online publication. doi:10.1016/j.biopsych.2020.03.017
105. **Rosen, C. S., Morland, L. A., Marx, B. P.**, Glassman, L. H., Weaver, K., Smith, C. A., Pollack, S., & **Schnurr, P. P.** (in press). Virtual mental health care in the Veterans Health Administration's immediate response to COVID-19. *American Psychologist*.
106. Salas, J., **Norman, S. B.**, Tuerk, P. W., van den Berk-Clark, C., Cohen, B. E., Schneider, F. D., Chard, K. M., Lustman, P. J., **Schnurr, P. P., Friedman, M. J.**, Grucza, R., & Scherrer, J. F. (2020). PTSD improvement and substance use disorder treatment utilization in veterans: Evidence from medical record data. *Drug and Alcohol Dependence*. Advance online publication. doi:10.1016/j.drugalcdep.2020.108365

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107. Sayer, N. A., **Bernardy, N. C., Yoder, M. S., Hamblen, J. L., Rosen, C. S., Ackland, P. E., Kehle-Forbes, S., Clothier, B., Schnurr, P. P., Orazem, R. J., & Noorbaloochi, S.** (2020). Evaluation of an implementation intervention to increase reach of evidence-based psychotherapies for PTSD in U.S. Veterans Health Administration PTSD clinics. *Administration and Policy in Mental Health and Mental Health Services Research*. Advance online publication. doi:10.1007/s10488-020-01086-3
108. Scherrer, J. F., Salas, J., Schneider, D., **Friedman, M. J.**, van den Berk-Clark, C., Chard, K. M., **Norman, S. B.**, Lustman, P. J., Tuerk, P., **Schnurr, P. P.**, & Cohen, B. E. (2020). PTSD improvement and incident cardiovascular disease in more than 1,000 veterans. *Journal of Psychosomatic Research*. Advance online publication. doi:10.1016/j.jpsychores.2020.110128
109. Schimmenti, A., Sideli, L., La Barbera, D., La Cascia, C., Waelde, L. C., & **Carlson, E. B.** (2020). Psychometric properties of the Dissociative Symptoms Scale (DSS) in Italian outpatients and community adults. *Journal of Trauma & Dissociation*. Advance online publication. doi:10.1080/15299732.2020.1760170
110. **Schnurr, P. P., & Hamblen, J. L.** (in press). PTSD treatment research: An overview and evaluation. In J. G. Beck & D. M. Slone (Eds.), *The Oxford handbook of traumatic stress disorders, 2nd ed.* New York, NY: Oxford University Press.
111. **Schnurr, P. P., Wachen, J. S.**, Green, B. L., & Kaltman, S. (in press). Trauma exposure, PTSD, and physical health. In **M. J. Friedman, P. P. Schnurr, & T. M. Keane** (Eds.), *PTSD: Science and practice—A comprehensive handbook, 3rd edition.* New York, NY: Guilford.
112. Schreiner, A. M., **Livingston, N., Heilman, M.**, Lynch, Vittorio, L., Brief, Rubin, A., Enggasser, J. L., Roy, M., Solhan, M., **Helmuth, E.**, Rosenbloom, D., & **Keane, T. M.** (2020). Understanding motives for and against hazardous drinking and change among returning veterans. *Psychological Services*. Advance online publication. doi:10.1037/ser0000423
113. **Shiner, B.**, Leonard, C. E., Gui, J., **Schnurr, P. P.**, Hoyt, J. E., Young-Xu, Y., & Watts, B. V. (in press). Comparing medications for DSM-5 PTSD in routine VA practice. *Journal of Clinical Psychiatry*.
114. **Shiner, B.**, Leonard, C., Gui, J., **Cornelius, S. L., Gradus, J. L., Schnurr, P. P.**, & Watts, B. (2020). Measurement strategies for evidence-based antidepressants for posttraumatic stress disorder delivery: Trends and associations with patient-reported outcomes. *Administration and Policy in Mental Health and Mental Health Services Research*. Advance online publication. doi:10.1007/s10488-020-01047-w
115. **Shor, R., Lee, D. J., Thompson-Hollands, J., & Sloan, D. M.** (in press). Psychometric properties of the Posttraumatic Avoidance Behaviour Questionnaire among a treatment-seeking adult sample. *Psychological Trauma: Theory, Research, Practice, and Policy*.
116. Song, J., Garcia, H. A., Finley, E. P., & **Wiltsey Stirman, S.** (2020). Graduate training and provider concerns about distress and comprehension in PTSD treatment choice: A mediation analysis. *Psychological Services*. Advance online publication. doi:10.1037/ser0000429
117. Sorrentino, A. E., **Iverson, K. M.**, Tuepker, A., True, G., Cusack, M., Newell, S., & Ditcher, M. E. (2020). Mental health care in the context of intimate partner violence: Survivor perspectives. *Psychological Services*. Advance online publication. doi:10.1037/ser0000427
118. Spies, J.-P., Woud, M. L., Kessler, H., Rau, H., Willmund, G. D., Köhler, K., Herpertz, S., Blackwell, S. E., **Bovin, M. J., Marx, B. P.**, & Cwik, J. C. (in press). Psychometric properties of the German version of the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5) in clinical routine settings: Study design and protocol of a multitrait-multimethod study. *BMJ Open*.
119. **Spoont, M.**, Nelson, D. B., **Kehle-Forbes, S.**, Meis, L., Murdoch, M., **Rosen, C. S.**, & Sayer, N. (2020). Racial and ethnic disparities in clinical outcomes six months after receiving a PTSD diagnosis in Veterans Health Administration. *Psychological Services*. Advance online publication. doi:org/10.1037/ser0000463
120. Stone, L., **Girgenti, M. J.**, Wang, J., Ji, D., Zhao, H., **Krystal, J. H.**, & **Duman, R.** (2020). Cortical transcriptomic alterations in association with appetitive neuropeptides and body mass index in posttraumatic stress disorder. *International Journal of Neuropsychopharmacology*. Advance online publication. doi:10.1093/ijnp/pyaa072
121. Straud, C. L., Dondanville, K., Hale, W., **Wachen, J. S.**, Mintz, J., Litz, B. T., Roache, J., Yarvis, J., Young-McCaughan, S., Peterson, A. L., Resick, P., & STRONG STAR Consortium (2020). The impact of hazardous drinking among active duty military with posttraumatic stress disorder: Does Cognitive Processing Therapy format matter? *Journal of Traumatic Stress*. Advance online publication. doi:10.1002/jts.22609
122. **Street, A. E.**, Shin, M., Marchany, K., **McCaughey, V., Bell, M. E.**, & Hamilton, A. (2019). Veterans' perspectives on military sexual trauma-related communication with VHA providers. *Psychological Services*. Advance online publication. doi:10.1037/ser0000395

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123. **Sullivan, D. R., Miller, M. W., Wolf, E. J., Logue, M. W.,** Robinson, M. E., Fortier, C. B., Fonda, J. R., Wang, D. J. J., Milberg, W. P., McGlinchey, R. E., & **Salat, D.** (2020). Cerebral perfusion is associated with blast exposure in military personnel without moderate or severe TBI. *Journal of Cerebral Blood Flow and Metabolism*. Advance online publication. doi:10.1177/0271678X20935190
124. **Sullivan, D. R., Salat, D., Wolf, E. J., Logue, M. W.,** Fortier, C. B., Fonda, J. R., DeGutis, J., **Esterman, M.,** Milberg, W. P., McGlinchey, R. E., & **Miller, M. W.** (2020). Interpersonal early life trauma is associated with increased cerebral perfusion and poorer memory performance in post-9/11 veterans. *NeuroImage: Clinical*. Advance online publication. doi:10.1016/j.nicl.2020.102365
125. **Taft, C. T., Davis, M.,** Franz, M. R., & Johnson, G. (in press). Trauma-informed and oppression-sensitive intervention for those who engage in intimate partner violence. In J. Devaney, C. Bradbury-Jones, S. Holt, & C. Øverlien (Eds.), *The Routledge handbook of domestic violence and abuse*. London, UK: Taylor & Francis.
126. **Taft, C. T.,** Gilbar, O., & Davis, M. (2020). Commentary on Augsburg and Maercker—Posttraumatic stress disorder and aggression: What the data tell us and where we go from here. *Clinical Psychology Science and Practice*. Advance online publication. doi:10.1111/cpsp.12327
127. Taylor, D. J., Pruiksma, K. E., Hale, W. J., **McLean, C. P.,** Zandberg, L., Brown, L., Mintz, J., Young-McCaughan, S., Peterson, A. L., Yarvis, J. S., Dondanville, K. A., Litz, B. T., Roache, J. D., Foa, E. B., & STRONG STAR Consortium (2020). Sleep problems in active duty military personnel seeking treatment for posttraumatic stress disorder: Presence, change, and impact on outcomes. *Sleep*. Advance online publication. doi:10.1093/sleep/zsaa065
128. **Thompson-Hollands, J.,** Burmeister, L. B., **Rosen, C. S.,** O'Dougherty, M., Erickson, E. P. G., & Meis, L. A. (2019). Veterans with poor PTSD treatment adherence: Exploring their loved ones' experience of PTSD and understanding of PTSD treatment. *Psychological Services*. Advance online publication. doi:10.1037/ser0000389
129. **Thompson-Hollands, J., Lee, L. O., & Schnurr, P. P.** (in press). Military PTSD. In C. Castro & C. Warner (Eds.), *Mental healthcare for military and veteran personnel*. Washington, DC: American Psychiatric Association.
130. **Thompson-Hollands, J., Marx, B. P., Lee, D. J., & Sloan, D. M.** (in press). Longitudinal change in self-reported peritraumatic dissociation during and after a course of PTSD treatment: Contributions of symptom severity and time. *Psychological Trauma: Theory, Research, Practice, and Policy*.
131. **Thompson-Hollands, J.,** Strage, M., DeVoe, E., Beidas, R., & **Sloan, D. M.** (2020). Development of a brief adjunctive intervention for family members of veterans in individual PTSD treatment. *Cognitive and Behavioral Practice*. Advance online publication. doi:10.1016/j.cbpra.2020.06.007
132. Tripp, J. C., **Haller, M.,** Trim, R. S., Straus, E., Bryan, C. J., Davis, B. C., Lyons, R., **Hamblen, J. L., & Norman, S. B.** (2020). Does exposure exacerbate symptoms in veterans with PTSD and alcohol use disorder? *Psychological Trauma: Theory, Research, Practice, and Policy*. Advance online publication. doi:10.1037/tra0000634
133. Tripp, J. C., **Norman, S. B.,** Kim, H. M., Venners, M. R., Martis, B., Simon, N. M., Stein, M. B., & Allard, C. B. (2020). Residual symptoms of PTSD following sertraline plus enhanced medication management, sertraline plus PE, and PE plus placebo. *Psychiatry Research*. Advance online publication. doi:10.1016/j.psychres.2020.113279
134. Tsai, J., Huang, M., Wilkinson, S., Edelen, C., Rosenheck, R. A., & **Holtzheimer, P. E.** (2020). A measure to assess perceptions and knowledge about electroconvulsive therapy. *The Journal of ECT*. Advance online publication. doi:10.1097/YCT.0000000000000609
135. Tsai, J., Schick, V., Hernandez, B., & **Pietrzak, R. H.** (2020). Is homelessness a traumatic event? Results from the 2019–2020 National Health and Resilience in Veterans Study. *Depression and Anxiety*. Advance online publication. doi:10.1002/da.23098
136. **Vasterling, J. J.,** Jacob, S., & **Rasmusson, A. M.** (in press). PTSD. In J. M. Silver, T. W. McAllister, & D. B. Archiniegas (Eds.), *APA textbook of traumatic brain injury (3rd ed.)*. Arlington, VA: American Psychiatric Publishing.
137. Vogel, S. C., **Esterman, M.,** DeGutis, J., Wilmer, J. B., Ressler, K. J., & Germine, L. T. (2020). Childhood adversity and dimensional variations in adult sustained attention. *Frontiers in Psychology*. Advance online publication. doi:10.3389/fpsyg.2020.00691
138. **Wachen, J. S.,** Evans, W. R., Blankenship, A. E., & Jacoby, V. (in press). Cognitive Processing Therapy for moral injury. In J. Currier, K. Drescher, & J. Nieuwsma (Eds.), *Addressing moral injury in clinical practice*. Washington, DC: American Psychological Association.
139. **Walser, R. D., & McGee-Vincent, P.** (in press). How to develop your abilities as an ACT therapist. In P. Lucena-Santos, S. A. Carvalho, J. Pinto-Gouveia, M. S. Oliveira, & J. Pistorello (Eds.), *Manual prático internacional de Terapia de Aceitação e Compromisso [International practical handbook of Acceptance and Commitment Therapy]*. Novo Hamburgo, RS: Sinopsys.

Appendix E: In-Press Publications by National Center Staff

140. **Walsler, R. D.**, & Wharton, E. (in press). Acceptance and Commitment Therapy: Using mindfulness and values in the treatment of moral injury. In M. Currier, K. D. Drescher, & J. A. Nieuwsma (Eds.), *Addressing moral injury in clinical practice*. Washington, DC: American Psychological Association.
141. **Wells, S.**, Dietch, J. R., Edner, B. J., Glassman, L., Thorp, S. R., Morland, L. A., & Aarons, G. A. (in press). Examining and abbreviating the Insomnia Severity Index in older adult male veterans with posttraumatic stress disorder (PTSD). *Behavioral Sleep Medicine*.
142. Williston, S. K., Grossman, D., Mori, D. L., & **Niles, B. L.** (in press). Mindfulness interventions in the treatment of posttraumatic stress disorder. *Professional Psychology: Research and Practice*.
143. Williston, S., Roemer, L., & **Vogt, D.** (in press). Cultural and service factors related to mental health beliefs among post-9/11 veterans. *International Journal of Social Psychiatry*.
144. **Wiltsey Stirman, S., Gutner, C. A., Gamarra, J., Suvak, M., Vogt, D., Johnson, C. M., Wachen, J. S., Dondanville, K., Yarvis, J., Minz, J., Peterson, A., Young-McCaughan, S., STRONG STAR Consortium, & Resick, P.** (in press). A novel approach to the assessment of fidelity to a cognitive behavioral therapy for PTSD using clinical worksheets: A proof of concept with Cognitive Processing Therapy. *Behavior Therapy*.
145. Wohleb, E. S., & **Duman, R.** (in press). Disruption of mTORC1 signaling contributes to synaptic deficits caused by chronic stress: Reversal by rapid-acting antidepressants. *Neurobiology of Stress*.
146. **Wolf, E. J., Ellickson-Larew, S., Guetta, R. E., Escarfulleri, S., Ryabchenko, K., & Miller, M. W.** (in press). Psychometric performance of the Miller Forensic Assessment of Symptoms Test (M-FAST) in veteran PTSD assessment. *Psychological Injury and Law*.
147. **Wolf, E. J., Logue, M. W., Zhao, X., Daskalakis, N. P., Morrison, F. G., Escarfulleri, S., Stone, A., Schichman, S. A., McGlinchey, R. E., Milberg, W. P., Chen, C., Abraham, C. R., & Miller, M. W.** (in press). PTSD and the klotho longevity gene: Evaluation of longitudinal effects on inflammation via DNA methylation. *Psychoneuroendocrinology*.
148. Wooldridge, J., **Bosch, J. O., Crawford, J. N., Morland, L. A., & Afari, N.** (in press). Relationships among adverse childhood experiences, PTSD symptom clusters and health in women veterans. *Stress and Health*.
149. Wooten, T., **Sullivan, D. R., Logue, M. W., Fonda, J., Fortier, C., DeGutis, J., McGlinchey, R., Milberg, W., & Esterman, M.** (in press). Apolipoprotein E (APOE) e4 status moderates the relationship between close blast exposure and cognitive functioning. *Journal of International Neuropsychological Society*.

APPENDIX F

SCIENTIFIC PRESENTATIONS BY NATIONAL CENTER STAFF

American College of Neuropsychopharmacology 2019 Annual Meeting | Orlando, FL. December 2019

1. **Abdallah, C., Averill, L.,** Gueorguieva, R., Goktas, S., **Purohit, P., Ranganathan, M.,** D'Souza, D. C., Formica, R., **Southwick, S. M., Duman, R., Sanacora, G., & Krystal, J. H.** *Rapamycin, an immunosuppressant and mTORC1 inhibitor, triples the antidepressant response rate of ketamine at 2 weeks following treatment: A double-blind, placebo-controlled, cross-over, randomized clinical trial.*
2. Conroy, S., Elsaid, N., Wen, Q., Kelley, M., Ford, J., Wu, Y. C., & **Holtzheimer, P. E.** *Structural connectivity in currently medicated treatment-resistant vs. treatment-responsive depression: A diffusion tensor imaging study.*
3. **Kelmendi, B.** *Should we use Psilocybin and MDMA to treat PTSD?*
4. Philip, N., Aiken, E., Kelley, M., Burch, W., Waterman, L., & **Holtzheimer, P. E.** *Synchronized transcranial magnetic stimulation for posttraumatic stress disorder and comorbid major depression.*

Anxiety and Depression Association of America | San Antonio, TX. March 2020

5. Khan, A., Holder, N., Li, Y., **Shiner, B.,** Madden, E., Seal, K. H., Neylan, T. C., & Maguen, S. *How do gender and military sexual trauma impact PTSD symptoms in Cognitive Processing Therapy and Prolonged Exposure?*
6. Narine, K., Bredemeier, K., Mu, W., Brown, L., **McLean, C. P.,** Yarvis, J., Mintz, J., Young-McCaughan, S., Borah, E. V., Dondanville, K., Fina, B., Hall-Clark, B., Litz, B., Roache, J., Wright, E., Peterson, A., & Foa, E. B. *Repetitive negative thinking and suicidal ideation among active duty military personnel seeking treatment for PTSD.*
7. Narine, K., Brown, L. A., Foa, E. B., Dondanville, K., Wright, E., Hall-Clark, B., Fina, B., Mintz, J., Young-McCaughan, S., Peterson, A., & **McLean, C. P.** *Qualitative review of suicidal ideation in an open trial web-based Prolonged Exposure therapy.*
8. **Niles, B. L.,** Kruepke, M., Williston, S. K., & Grossman, D. *Treatment paths for trauma-focused evidence-based treatments for post-traumatic stress disorder in an urban VHA PTSD clinic.*
9. Reuman, L., & **Thompson-Hollands, J.** *Confused by comorbidities: Partners' experiences of living with veterans with PTSD and medical diagnoses.* In S. Blakey (Chair), *Posttraumatic stress and complicating sequelae: Physical experiences in the context and aftermath of psychological trauma.*
10. **Sippel, L. M.,** & Meyer, M. *Social-cognitive mechanisms underpinning loneliness in posttraumatic stress disorder.* In L. M. Sippel (Chair), *Relationships can hurt or heal: Social-cognitive processes and outcomes among trauma-exposed individuals.*

Association for Behavioral and Cognitive Therapies | Atlanta, GA. November 2019

11. Borges, L. M., Bahraini, N. H., **Walser, R. D.,** & Barnes, S. M. *ACT for life: Using Acceptance and Commitment Therapy to prevent suicide and build meaningful lives.*
12. Danitz, S. B., Driscoll, M., Grillo, A., Gerber, M., Wiltsey-Stirman, S., & **Iverson, K. M.** *Recovering from intimate partner violence through strengths and empowerment (RISE): Initial open trial findings of a patient-centered intervention.*
13. **Livingston, N.,** Brennan, J. M., & Cochran, B. *Sexual and gender minority concealment and real-time associations between discrimination and anxious and depressed mood.* In C. Beard (Chair), *Identity concealment: Reasons, consequences, and associations with mental and physical health.*

14. Rauch, S., Cigrang, J., Venners, M., **Bernardy, N. C.**, **Hamblen, J. L.**, & **Schnurr, P. P.** *Filling a critical gap: VA pilot training in PE-PC.*
15. Reuman, L., **Thompson-Hollands, J.**, DeVoe, E. R., & **Sloan, D. M.** Partners' experience of PTSD: Unpacking uncertainty, self-silencing, avoidance, and more. In S. Blakey (Chair), *Expanding impact: Addressing co-occurring and complicating factors during evidence-based treatments for PTSD.*
16. **Sippel, L. M.**, Flanagan, J., Brady, K. T., & Joseph, J. Effects of intranasal oxytocin on threat- and reward-related effective connectivity in childhood abuse-related PTSD. In L. M. Sippel (Chair), *Therapeutic potential of oxytocin for improving social-cognitive processes and behavior in PTSD and substance use disorders.*
17. **Sloan, D. M.** Discussant. In S. Blakey (Chair), *Expanding impact: Addressing co-occurring and complicating factors during evidence-based treatments for PTSD.*
18. **Thompson-Hollands, J.**, DeVoe, E. R., & **Sloan, D. M.** A brief intervention for reducing symptom accommodation and increasing treatment support among the family members of veterans with PTSD. In R. J. Jacoby (Chair), *Partnering with families in therapy: Leveraging family processes in the treatment of anxiety disorders.*
19. Valenstein-Mah, H., Lyon, A., & **Kehle-Forbes, S.** *Does treatment type matter? A qualitative study of Veterans' reasons for dropout from PE and CPT.*
20. **Zelkowitz, R.** Self-criticism as a transdiagnostic predictor of self-harm behaviors. In K. Fox & S. Wang (Chair), *Eating disorders, self-injury, and suicide: Common pathways, mechanisms, and functions.*

Combat PTSD Conference | San Antonio, TX. October 2019

21. **Esterman, M.** *Neural markers for detecting suicidal ideation in veterans.*
22. Foa, E. B., **McLean, C. P.**, Zandberg, L., & Peterson, A. *Implementation of PE in the Army: Is consultation necessary for effective dissemination?*
23. **Girgenti, M. J.** Sex-specific transcriptomic alterations in PTSD. In D. Williamson (Chair), *Biological studies of PTSD and related conditions.*
24. **Lee, D. J.**, Jiang, T., **Kearns, J. C.**, **Zax, A.**, Rosellini, A. J., Rosen, R. C., **Keane, T. M.**, & **Marx, B. P.** *Gender differences in machine learning algorithms for suicide attempts among OEF/OIF veterans: A five-year longitudinal study.*
25. **McLean, C. P.**, Foa, E. B., Dondanville, K. A., Haddock, C. K., Miller, M. L., Yarvis, J. S., Wright, E. C., Hall-Clark, B. N., Fina, B. A., Litz, B. T., Mintz, J., Young-McCaughan, S., & Peterson, A. L. *Using eHealth to increase the reach of PTSD treatment: Outcomes and lessons learned from the web-PE studies.*
26. **Morland, L. A.** *Invited talk: Home-based delivery of Prolonged Exposure therapy: A comparison of clinical efficacy between service modalities.*
27. **Niles, B. L.** *Evidence for complementary and integrative interventions for PTSD: Review and recommendations.*
28. Peterson, A. L., Blount, T. H., Foa, E. B., Brown, L., **McLean, C. P.**, **Keane, T. M.**, Schobitz, R. P., DeBeer, B. R., Fina, B. A., Evans, W. R., Synett, S., Hall-Clark, B. N., Rentz, T. O., Yarvis, J. S., Dondanville, K. A., Hansen, H., Jacoby, V. M., Lara-Ruiz, J., Straud, C., & Hale, W. *Intensive Prolonged Exposure for combat-related PTSD: Results from a randomized clinical trial.*
29. **Rosen, C. S.**, Riggs, D., Peterson, A., Young-McCaughan, S., Borah, E., Comtois, K. A., Cook, J., **Davis, C.**, Dondanville, K., Finley, E., Haddock, C. K., Jahnke, S. A., **Neitzer, A.**, Wiltsey-Stirman, S., **McLean, C. P.**, STRONG STAR Consortium, & TACTICS Research Group. *Targeted strategies to accelerate evidence-based psychotherapy (EBP) implementation in military settings.*
30. Sripada, R., Burton, M., Michopoulos, V., Kerley, K., Marx, C., Kilts, J., Rothbaum, B. O., **McLean, C. P.**, Smith, A., Jovanovic, T., Liberzon, I., Williamson, D. E., Yarvis, J. S., Dondanville, K. A., Young-McCaughan, S., **Keane, T. M.**, & Peterson, A. L. Neurosteroid changes in Prolonged Exposure therapy for PTSD. In D. E. Williamson (Chair), *Biological studies of PTSD and related conditions.*
31. **Wachen, J. S.**, Mintz, J., Dondanville, K., Young-McCaughan, S., Litz, B., Yarvis, J., Pruiksma, K., Blankenship, A., Jacoby, V., Peterson, A., & Resick, P. *Variable length Cognitive Processing Therapy: Predicting length of treatment to good end state in an active duty military sample.*
32. **Whitworth, J.**, Nosrat, S., SantaBarbara, N. J., & Ciccolo, J. T. Greater resistance training volume-load predicts lower posttraumatic stress symptoms. In B. L. Niles (Chair), *Lifestyle factors and PTSD: Exercise, smoking, alcohol use, and mind-body interventions.*

Appendix F: Scientific Presentations by National Center Staff

Health Services Research and Development (VA HSR&D) | Washington, DC. October 2019

33. **Bernardy, N. C.**, & Bollinger, M. J. (2019, October). *Trust in VA, experiences of care, and perceived quality impact preferences for setting of future care among veterans with PTSD.*
34. **Bovin, M. J., Kimerling, R.**, Weathers, F. W., **Prins, A., Marx, B. P.**, Post, E. P., & **Schnurr, P. P.** (2019, October). *Validation of the PTSD primary care screen.*
35. Finley, I., Haro, E., Mader, M., Noel, P. H., Garcia, H., **Vogt, D., Kimerling, R.**, Schalet, B. S., Reise, S. P., Zulman, D., & Lewis, E. *Measuring patient engagement.*
36. Simon, S., **Livingston, N., Sawdy, M.**, Yeksigian, Bickmore, T., Zhou, S., Saitz, R., Kressin, N., & Rubin, A. *Randomized controlled trial of a relational agent to reduce risky alcohol use.*

International Society for Traumatic Stress Studies | Boston, MA. November 2019

37. Ackland, P. E., Lyon, A., Meis, L. A., **Spoont, M.**, Valenstein-Mah, H., Orazem, R., Gerould, H., & **Kehle-Forbes, S.** *Provider response to ambivalence does not have to be "textbook" in manualized treatments for PTSD.*
38. Allbaugh, L., Florez, A., Mekawi, I., Powers, A., & **Cloitre, M.** *Emotion dysregulation in PTSD - GAD comorbidity.*
39. **Bernardy, N. C., Cuccurullo, L. J., Montano, M. A.**, & Breen, K. *Taking it direct to the consumer: Evidence-based PTSD care.*
40. **Bernardy, N. C., Cuccurullo, L. J., Montano, M. A.**, & Breen, K. *Using facilitation to improve rural access to evidence-based PTSD care.*
41. **Bosch, J. O.**, Delay, C., Khalifian, C. E., Sohn, M., & Morland, L. A. *The effects of adverse childhood experiences on military couples.*
42. **Bovin, M. J., Kimerling, R.**, Weathers, F. W., **Prins, A., Marx, B. P.**, Post, E. P., & **Schnurr, P. P.** *Validation of the PTSD primary care screen for DSM-5.* In D. J. Lee (Chair), *Advancements in assessment of DSM-5 PTSD.*
43. **Bovin, M. J.**, Meyer, E. C., Kimbrel, N. A., **Kleiman, S., Green, J. D.**, Morissette, S. B., & **Marx, B. P.** *Using the world health organization disability assessment schedule 2.0 to assess disability in veterans with posttraumatic stress disorder.* In J. Thompson-Hollands (Chair), *Looking beyond symptom change: Attending to functioning in PTSD.*
44. Brady, A., Herbst, E., **Mackintosh, M., Bosch, J. O.**, & **McCaslin, S. E.** *The association of impulsivity, Locus of control, and self-efficacy with quality of life in post-9/11 veterans with symptoms of PTSD.*
45. **Cole, H. E.**, Gilbar, O., & **Taft, C. T.** *Neuropsychological factors as a moderator of the relationship between PTSD and intimate partner violence in a veteran sample.*
46. **Colvonen, P.**, Goldstein, L., Rivera, G., & Sarmiento, K. *The role of CPAP treatment on hyperarousal symptoms.* In P. Colvonen (Chair), *Trauma, PTSD, and sleep I: The role of disturbed sleep on PTSD development, suicidal ideation, cognitive functioning, and hyperarousal.*
47. **Colvonen, P.**, Straus, L., Drummond, S. P., Angkaw, A., & **Norman, S. B.** *Insomnia symptoms do not change over time in a randomized control trial comparing integrated PTSD and alcohol use disorder treatments.* In P. Colvonen (Chair), *Trauma, PTSD, and sleep II: Examining the relationship between insomnia and PTSD treatments.*
48. **Cuccurullo, L. J., Montano, M. A.**, Breen, K., & **Bernardy, N. C.** *Implementation of PTSD evidence-based practice in rural settings is more than just training: Qualitative and quantitative findings from trained rural VA providers.*
49. Daryani, S. H., Herbst, E., Rossi, N., **Mackintosh, M.**, Choucroun, G., & **McCaslin, S. E.** *Development of a novel measure of military acculturation.*
50. Delane, S., **Arditte Hall, K.**, & **Pineles, S. L.** *Plasma GABA levels in trauma exposed women with or without PTSD.*
51. DeLane, S., **Spiro, A.**, Magruder, K. M., & **Smith, B. N.** *PTSD symptoms yield poor cardiovascular health in older women veterans: Examining risk by diagnostic threshold.*
52. DeViva, J. C., **McCarthy, E.**, Overstreet, C., **Southwick, S. M.**, & **Pietrzak, R. H.** *Resilience to trauma exposure in U.S. military veterans: Application of a novel classification approach in a nationally representative sample.*
53. DeViva, J. C., **McCarthy, E., Southwick, S. M.**, & **Pietrzak, R. H.** *Impact of sleep quality on the incidence of PTSD: Results from the National Health and Resilience in Veterans Study.* In P. Colvonen & S. Norman (Chair), *Trauma, PTSD, and sleep: The role of disturbed sleep on PTSD development, suicidal ideation, cognitive functioning, and hyperarousal symposium.*

54. **Duek, O., Pietrzak, R. H., Hoff, R., & Harpaz-Rotem, I.** *Centrality of concentration and sleep in PTSD and depression symptoms: Network analysis of VA cohort.*
55. Escarfulleri, S., Guetta, R. E., **Miller, M. W.**, Higgins, D., Stojanovic, M., & **Wolf, E. J.** *Associations between reporting style and physical performance among veterans with chronic pain and PTSD.*
56. **Esterman, M.** *PTSD is associated with hubs of abnormal functional connectivity.*
57. Forbes, D., Bisson, J., **Cloitre, M.**, O'Donnell, M., & Riggs, D. *Implementation of the ISTSS PTSD guidelines recommendations for adults in everyday settings: Choosing and using the best treatment.*
58. Gallagher, T., **McLean, C. P.**, Zandberg, L., Young-McCaughan, S., Peterson, A. L., & Foa, E. B. *Implementation of PE in the Army: Is consultation necessary for effective dissemination?*
59. Gilbar, O., **Gnall, K.**, & **Taft, C. T.** *Gender differences in relations between social information processing, PTSD symptoms, and intimate partner violence.*
60. **Gnall, K., Cole, H. E.**, Creech, S. K., **Taft, C. T.**, & Murphy, C. M. *National implementation of a trauma-informed intervention for intimate partner violence in veterans: Three-year outcomes.*
61. Goss, C., **McCaslin, S. E., Lai, K.**, & Shore, J. *Development and initial evaluation of a web-based resource for behavioral health providers caring for Native American veterans.*
62. Hardin, S., Zerkowitz, R., **Wolf, E. J.**, & **Mitchell, K. S.** *Dissociation, posttraumatic stress disorder, and binge eating in trauma-exposed veterans.*
63. **Harpaz-Rotem, I.**, Yehuda, R., Jovanovic, T., & Neria, Y. *Incorporating neural, molecular, and psychophysiological markers to assess and enhance PTSD treatment and response.* In Y. Neria (Chair), *Biological-medical track.*
64. Holder, N., **Shiner, B.**, Li, Y., Madden, E., Neylan, T. C., Seal, K. H., Lujan, C., Patterson, O., DuVall, S., & Maguen, S. *Posttraumatic stress disorder evidence-based psychotherapy initiation and timing in the Veterans Health Administration.* In N. Holder (Chair), *Using data from the Veterans Health Administration to understand outcomes and improve the future of posttraumatic stress disorder treatment.*
65. Holliday, R., Smith, N. B., Holder, N., Gross, G. M., Monteith, L., Maguen, S., **Hoff, R.**, & **Harpaz-Rotem, I.** *A national investigation of the role of military sexual trauma on the effectiveness of VA PTSD residential treatment.*
66. **Iverson, K. M.**, Driscoll, M., Danitz, S., Gerber, M., Dichter, M., & Wiltsey-Stirman, S. *An open trial to preliminarily evaluate and refine the 'Recovering from Intimate Partner Violence through Strengths and Empowerment' (RISE) counseling intervention for women who experience IPV.*
67. **Kachadourian, L., Haller, M., Davis, B., & Norman, S. B.** *Posttraumatic guilt and depression in veterans with PTSD and alcohol use disorder: The mediating role of psychological inflexibility.*
68. **Kachadourian, L., Harpaz-Rotem, I.**, Southwick, S., & **Pietrzak, R. H.** *Mindfulness as a mediator between trauma exposure and mental health outcomes in U. S. military veterans: Results from the National Health and Resilience in Veterans Study.*
69. **Kehle-Forbes, S.**, Ackland, P., Chard, K., Foa, E. B., Lyon, A., Meis, L., Orazem, R., Polusny, M., **Schnurr, P. P., Spoont, M.**, & Zickmund, S. *"I carry it with me." The impact of life on engagement in evidence-based psychotherapies for PTSD.*
70. **Kehle-Forbes, S.**, Polusny, M. A., **Galovski, T. E.**, & Possemato, K. *Mental health service engagement following completion of evidence-based psychotherapy for PTSD.*
71. Khalifian, C. E., Gutierrez Chavez, M., Sohn, M. J., & **Morland, L. A.** *Romantic relationship attachment and suicidal thoughts in veteran couples.*
72. Khalifian, C. E., Knopp, K., Wilks, C., Wooldridge, J., Sohn, M. J., Thomas, D., & **Morland, L. A.** *Sexual functioning and suicide risk in U.S. military veteran couples.*
73. Khalifian, C. E., Leifker, F., Bryan, C., Sohn, M. J., & **Morland, L. A.** *Development of TR&ST: A couples-based suicide intervention.*
74. Korsun, L., **Spiro, A., Vogt, D.**, Moye, J., **Cook, J.**, & **Pless Kaiser, A.** *Improving psychosocial functioning in older veterans with PTSD: Lessons learned from qualitative focus groups.*
75. **Lee, D. J., Bovin, M. J.**, Weathers, F. W., **Schnurr, P. P., Sloan, D. M.**, & **Marx, B. P.** *Reliable change index and clinically significant change margins for the CAPS-5 and the PCL-5 among veterans.* In D. J. Lee (Chair), *Advancements in assessment of DSM-5 PTSD.*
76. **Lee, D. J., Thompson-Hollands, J., Marx, B. P.**, Unger, W., Beck, J. G., & **Sloan, D. M.** *Sequence of change and direction of effect between PTSD symptoms and psychosocial functioning in treatment.* In J. Thompson-Hollands (Chair), *Looking beyond symptom change: Attending to functioning in PTSD.*

77. **Livingston, N., Mahoney, C. T.,** Ameral, V., Enggasser, J., Brief, D., Rubin, A., Litwack, S., Roy, M., Solhan, M., **Helmuth, E.,** Rosenbloom, D., & **Keane, T. M.** *Reduced alcohol use following veterans' use of online intervention predicts increased hyperarousal symptoms: Next step in assessment and integrated online intervention delivery.*
78. Luehrs, R. E., Suvak, M. K., Shayani, D., & **Iverson, K. M.** *Hope and self-efficacy as moderators of the relationship between intimate partner violence and posttraumatic stress disorder.*
79. **Macia, K. S.,** Raines, A. M., & Franklin, C. L. *Comparison between PTSD symptom networks of veterans with combat versus other types of index trauma.*
80. **Mackintosh, M.,** Glassman, L. H., Tedesco, A., Khalifian, C. E., Sohn, M. J., & **Morland, L. A.** *Impact of Prolonged Exposure on common PTSD-related complaints among veterans: Changes in anger and sleep concerns and their impact on veteran functioning.*
81. **Mackintosh, M.,** Willis, E. A., Glassman, L. H., & **Morland, L. A.** *Role of dysregulated anger on Cognitive Processing Therapy outcomes and its effect on therapeutic processes.*
82. Maguen, S., Holder, N., Li, Y., Madden, E., Neylan, T. C., Seal, K. H., Lujan, C., Patterson, O., DuVall, S., & **Shiner, B.** *Factors associated with PTSD symptom improvement among Iraq and Afghanistan veterans receiving evidence-based psychotherapy.* In N. Holder (Chair), *Using data from the Veterans Health Administration to understand outcomes and improve the future of posttraumatic stress disorder treatment.*
83. **Mahoney, C. T., & Iverson, K. M.** *Alcohol use moderates the relation between PTSD symptoms and intimate partner violence revictimization.* In C. Mahoney (Chair), *Research and clinical practice in interpersonal violence.*
84. **McCarthy, E.,** DeViva, J. C., **Southwick, S. M., & Pietrzak, R. H.** "In that sleep of death what dreams may come": Self-rated sleep quality predicts incident suicidal ideation and suicide attempts in U.S. military veterans. In P. Colvonen & S. Norman (Chair), *Trauma, PTSD, and sleep: The role of disturbed sleep on PTSD development, suicidal ideation, cognitive functioning, and hyperarousal symposium.*
85. **McCaughey, V., & Galovski, T. E.** *Modifying Cognitive Processing Therapy: Do treatment gains extend beyond primary outcomes?* In P. Resick (Chair), *Modifying trauma-focused evidence-based psychotherapies: What? Why? And how?*
86. **McClendon, J.,** Perkins, D., Copeland, L., Finley, E., & **Vogt, D.** *Patterns and correlates of racial/ethnic differences in posttraumatic stress disorder screening among recently separated veterans.*
87. **McClendon, J.,** Perkins, D., Copeland, L., Finley, E., Kressin, N., & **Vogt, D.** *The contribution of discriminatory stress to ethnoracial disparities in mental health symptom severity and treatment use among veterans.*
88. Meis, L., Glynn, S., Isenhardt, C., **Spoont, M., Kehle-Forbes, S.,** Porter, K., Astin, M., Smith, E., Ackland, P., Nelson, D., Linden, E., Chuick, C., Lamp, K., McManus, E., Pittman, P., Montero, J., **Eftekhari, A.,** Berfield, J., Oakley, T., & Hagel Campbell, E. *Family-involved Prolonged Exposure: Strategies for including loved ones in treatment for an ongoing randomized controlled trial.*
89. **Morland, L. A.,** Khalifian, C. E., Glassman, L. H., Sohn, M. J., Wilks, C., & **Mackintosh, M.** *The moderating roles of anger experiences and expression on suicidal thoughts in intimate partner relationships: Actor partner interdependence moderation models.*
90. Negreira, A. M., **Kachadourian, L., & Pietrzak, R. H.** *Aggression and PTSD: What is the clinical profile of veterans with externalizing behaviors.*
91. **Nillni, Y. I.,** Paul, E., **Vogt, D., & Galovski, T. E.** *The impact of military trauma exposure on perinatal outcomes among female veterans.* In Y. Nillni (Chair), *How does trauma impact perinatal health and what can we do about it?*
92. Paul, E., **Nillni, Y. I., & Galovski, T. E.** *Mental healthcare engagement and barriers to care among veterans with PTSD.*
93. **Pless Kaiser, A., Brady, C. B., Davison, E., & Spiro, A.** *Health and well-being of Vietnam combat veterans: The role of positive and negative appraisals of military service.* In Smith, Brian (Chair), *Life course adaptation to trauma across younger and older veteran cohorts: Identifying risk and resilience factors for veterans' health and well-being over time.*
94. **Pless Kaiser, A.,** Korsun, L., Glick, D., Nizzi, M., & **Spiro, A.** *Improving psychosocial functioning in older veterans with PTSD: An intervention development and evaluation project.*
95. Possemato, K., MacQueen, S., **Carlson, E. B.,** Johnson, E., & Harris, J. I. *The power of peer relationships to foster trauma recovery and mental health.*
96. Reinhardt, K. M., McCaughey, V. K., Vento, S., Ming Foyne, M., Freyd, J. J., & **Street, A. E.** *Impact of military sexual trauma: A qualitative examination of negative outcomes and posttraumatic growth among women veterans.* In R. K. Blais (Chair), *Examining the role of cognitions in symptomatology, functioning, and treatment outcomes for military sexual trauma survivors.*

97. Sanders, W., **Smith, B. N.**, & **Galovski, T. E.** *Homework completion, patient perspectives, and therapist contributions: Consider various aspects of homework in Cognitive Processing Therapy for PTSD.*
98. **Sawdy, M.**, **McClendon, J.**, & **Galovski, T. E.** *Ethnic identity moderates the association between anger and posttraumatic growth following a community racial trauma.*
99. **Schnurr, P. P.** (2019, November). Discussant. In J. Thompson-Hollands (Chair), *Looking beyond symptom change: Attending to functioning in PTSD.*
100. **Shor, R.**, & Cattaneo, L. B. *The impact of disclosure on resilience resources during help-seeking for sexual assault.*
101. **Sienkiewicz, M.**, **Iverson, K. M.**, **Smith, B. N.**, & **Mitchell, K. S.** *Examining the association between trauma exposure and work-related outcomes in women veterans.*
102. **Smith, B. N.**, DeLane, S., **Spiro, A.**, Frayne, S. M., & Magruder, K. M. Wartime stress exposures and lifetime PTSD and depression as predictors of cardiometabolic risk in Vietnam-era women veterans. In B. N. Smith (Chair), *Life course adaptation to trauma across younger and older veteran cohorts: Identifying risk and resilience factors for veterans' health and well-being over time.*
103. **Sullivan, D. R.**, **Morrison, F. G.**, **Wolf, E. J.**, **Logue, M. W.**, Fortier, C. B., **Salat, D.**, Fonda, J. R., Stone, A., Schichman, S., Milberg, W., McGlinchey, R., & **Miller, M. W.** The PPM1F gene moderates the association between PTSD and cortical thickness. In D. R. Sullivan (Chair), *Functional and structural brain correlates of PTSD: Genetic moderators and implications for resilience.*
104. **Taft, C. T.**, D'Avanzato, C., **Cole, H. E.**, **Gnall, K.**, & Creech, S. K. *Strength at home for preventing intimate partner violence in civilians: A pilot study.*
105. **Thompson-Hollands, J.**, **Lee, D. J.**, **Rosen, C. S.**, **Keane, T. M.**, & **Marx, B. P.** Trajectories and predictors of functioning among OEF/OIF veterans enrolled in VA care. In J. Thompson-Hollands (Chair), *Looking beyond Symptom Change: Attending to functioning in PTSD.*
106. **Vogt, D.**, Bramande, E., Tyrell, F., **Nillni, Y. I.**, Taverna, E., Perkins, D., & Copeland, L. (2019, November). Well-being of warfare exposed and non-warfare exposed U.S. veterans in the first year after separating from service. In B. Smith (Chair), *Life course adaptation to trauma across younger and older veteran cohorts identifying risk and resilience factors for veterans health and well-being over time.*
107. **Vogt, D.**, Danitz, S., Fox, A., & **Smith, B. N.** Differential impact of relationship and work impairment on treatment seeking among U.S. male and female veterans with PTSD and depression. In S. K. Willison (Chair), *Novel barriers and facilitators of treatment engagement among U.S. veterans with PTSD and other mental health conditions.*
108. **Wachen, J. S.**, Mintz, J., Dondanville, K., Young-McCaughan, S., Litz, B., Yarvis, J., Pruiksma, K., Blankenship, A., Jacoby, V., Peterson, A., & Resick, P. *Variable length Cognitive Processing Therapy: Predicting length of treatment to good end state in an active duty military sample.*
109. **Wachen, J. S.**, Morris, K., Galovski, T., Dondanville, K., & Resick, P. *Massed Cognitive Processing Therapy in active duty military: Design of a randomized clinical trial.*
110. Wells, S. Y., Aarons, G. A., Glassman, L. H., Jaime, K., Martinez Ceren, P., **Schnitzer, J.**, Chiong, C., **Mackintosh, M.**, Tu, X., Hurst, S., & **Morland, L. A.** *Examining veterans' reasons for dropping out of Prolonged Exposure therapy: A mixed-methods study.*
111. **Whitworth, J.**, **Hayes, S.**, Andrews, R. J., Fonda, J. R., Beck, B. M., Hanlon, L. B., Fortier, C. B., Milberg, W. P., & McGlinchey, R. E. *Cardiorespiratory fitness is related to better cardiometabolic health and lower PTSD severity.*
112. Williston, S. K., Smidt, K., **Fisher, L. M.**, & **Niles, B. L.** *How and why do clinicians modify trauma focused EBPs for PTSD for veterans?*
113. **Wolf, E. J.**, **Morrison, F. G.**, **Sullivan, D. R.**, **Logue, M. W.**, Guetta, R. E., Stone, A., Schichman, S. A., McGlinchey, R. E., Milberg, W. P., & **Miller, M. W.** Spinning the thread of time: Klotho, traumatic stress, and accelerated aging. In K. Harrington and M. Stein (Chair), *Genomic and epigenetic mechanisms contributing to risk and resilience to traumatic stress.*
114. Worley, C. B., **Sloan, D. M.**, **Marx, B. P.**, **Rosen, C. S.**, **Wiltsey-Stirman, S.**, & **McGee-Vincent, P.** Written Exposure Therapy training and implementation pilot. In C. Rosen (Chair), *Innovations in training clinicians in evidence-based treatments for PTSD.*
115. **Zelkowitz, R.**, & Zerubavel, N. *Integrating Dialectical Behavior Therapy (DBT) and trauma-focused treatment: A review of emerging approaches and framework for using DBT skills to target trauma sequelae.*
116. **Zimmerman, L. E.**, Holbrook, A., & Rust, T. *Modeling to learn: Using simulation to optimize local clinic implementation of evidence-based psychotherapy.*

Appendix F: Scientific Presentations by National Center Staff

Sleep | Philadelphia, PA. June 2020

117. **Colvonen, P.**, Goldstein, L., Rivera, G., & Sarmiento, K. *Longitudinal effects of CPAP therapy adherence on changes in PTSD symptoms and clusters.*
118. **Colvonen, P.**, Rivera, G. L., **Haller, M.**, & **Norman, S. B.** *Examining OSA screening and treatment for individuals on a PTSD and alcohol disorder residential treatment unit.*
119. Straus, L. D., **Colvonen, P.**, Bertenthal, D., Neylan, T. C., & O'Donovan, A. *Mental health and sleep disorders are associated with elevated C-reactive protein in returning veterans.*
120. **Woodward, S. H.**, **Jamison, A. L.**, Souter, T., Shin, H. J., Loew, D. E., & Armontrout, J. A. *Using sleep to avoid inpatient PTSD treatment.*

Other

121. **Abdallah, C.** (2020, January). *An update: Ketamine from serendipity to machine learning.* Biological Sciences Training Program Seminars, New Haven, CT.
122. Barlow, M. R., & **Carlson, E. B.** (2020, March). *Social stressors predict dissociation after hospitalization for sudden illness or injury.* Presented at the Annual Meeting of the International Society for the Study of Trauma and Dissociation, San Francisco, CA.
123. Barnes, S. M., Borges, L. M., Smith, G., **Walser, R. D.**, Forster, J., Hostetter, T., & Bahraini, N. H. (2020, July). ACT for Life: Increasing psychological flexibility to decrease the impact of suicidal thoughts and urges. In K. Lear (Chair), *Therapeutic processes of change: How do psychological flexibility variables relate to important treatment outcomes?* Presentation at the 18th annual meeting of the Association for Contextual Behavioral Science, Virtual.
124. **Bassir, A.**, & **Harpaz-Rotem, I.** (2019, December). *Cannabis use and endocannabinoid system alterations in individuals with history of trauma and PTSD.* Presentation at the 30th Annual Meeting of the American Academy of Addiction Psychiatry, San Diego, CA.
125. **Bernardy, N. C.** (2020, September). *EMPOWER: Taking the message direct to the patient* [Webinar]. VA Geriatric Mental Health Conference.
126. **Bernardy, N. C.**, **Montano, M. A.**, **Cuccurullo, L. J.**, Breen, K., Dufort, V., Westgate, C., Litt, E., & **Shiner, B.** (2019, October). *Innovative mapping to identify underserved rural sites to improve posttraumatic stress disorder care.* Invited presentation at the 2019 Innovation Experience, Washington, DC.
127. **Bernardy, N. C.**, **Montano, M. A.**, **Cuccurullo, L. J.**, Lee, P., Lee, R., & Breen, K. (2019, October). Lessons learned from a formative evaluation of an implementation intervention to improve rural PTSD care. In J. Pyne (Chair), *Management of persons with PTSD.* Symposium conducted at the 2019 National HSR&D QUERI Conference, Washington, DC.
128. Borges, L. M., Barnes, S. M., Farnsworth, J. K., **Drescher, K.**, & **Walser, R. D.** (2020, August). *Responding to moral dilemmas in the age of COVID-19: A conceptual framework and two approaches to intervention* [Webinar]. Grand Rounds presented for Geisinger Commonwealth School of Medicine, Virtual.
129. Borges, L. M., Barnes, S. M., Farnsworth, J. K., **Drescher, K.**, & **Walser, R. D.** (2020, September). *A contextual behavioral approach for responding to moral dilemmas in the age of COVID-19* [Webinar]. ACT Mini Lecture Series hosted by the Department of Veterans Affairs Employee Education System and the National Center for PTSD, Virtual.
130. Borges, L. M., Farnsworth, J. K., **Walser, R. D.**, **Drescher, K.**, & Barnes, S. M. (2020, July). Creating a process-based moral injury intervention: Acceptance and Commitment Therapy for Moral Injury (ACT-MI). In K. Lear (Chair), *Therapeutic processes of change: How do psychological flexibility variables relate to important treatment outcomes?* 18th annual meeting of the Association for Contextual Behavioral Science (ACBS), Virtual.
131. Boyle, J., O'Malley, K., Bamonti, P., **Pless Kaiser, A.**, Sager, Z., & Moye, J. (2020, July). *Later-adulthood trauma re-engagement in veterans: Development, evaluation, and refinement of a psychoeducation group.* Presentation at the American Psychological Association Convention, Virtual.
132. **Carlson, E. B.** (2020, February). *Mental health problems in hospital patients who receive emergency and inpatient care after sudden illness or injury.* Poster presented at the Annual Community Health Symposium, Stanford, CA.

Appendix F: Scientific Presentations by National Center Staff

(Other, continued)

133. **Cuccurullo, L. J., Bernardy, N. C., Montano, M. A.,** & Breen, K. (2019, October). Learning effects of PTSD facilitation on rural outcomes. In R. Lee (Chair), *The rural veteran in America*. Symposium presented at the World Rural Health Conference, Albuquerque, NM.
134. **Driesen, N. R.,** Herman, P., Rowland, M., Thompson, G., Qiu, M., He, G., Morgan, P., Diaz-Stansky, A., Barron, D., Helgeson, L., Chow, R., Gueorguieva, R., Straun, T., **Krystal, J. H.,** & Hyder, F. (2020, June). *Calibrated fMRI sensitive to NMDA-receptor antagonist ketamine effects on metabolism* [Webinar]. Presentation at the Organization for Human Brain Mapping.
135. **Esterman, M.** (2020, January). *Neurocognitive models of sustained attention*. Presented for the Ebbinghaus Empire Talk, Department of Psychology, University of Toronto, Toronto, CN.
136. **Gelernter, J.** (2019, November). *A plan for a VA mental health biobank*. Presentation at VA Central Office, Washington, DC.
137. **Gelernter, J.** (2019, October). *The Million Veteran Program: Results for psychiatric traits and future prospects*. Presented for the World Congress of Psychiatric Genetics (WCPG), Los Angeles, CA.
138. **Gelernter, J.** (2020, April). *Introducing the MVP MIND project mental health database project* [Webinar]. Presented for the Genomic Medicine Program Advisory Committee (GMPAC), Washington DC.
139. **Gelernter, J.** (2020, April). *Million Veteran Program (MVP)- Results for psychiatric traits and future prospects* [Webinar]. Presented for the Psychiatric Genetics Consortium Pathway to Therapeutics Meeting, London, UK.
140. **Gelernter, J.** (2020, April). *MVP MIND: MVP-measures investigating neuropsychiatric disorders* [Webinar]. Presented for VA Central Office, Washington, DC.
141. **Gelernter, J.** (2020, February). *Insights to the genetics and biology of PTSD and substance use disorders from the Million Veterans Program*. Presented for the Center for Discovery & Innovation Genomic Medicine, Nutley, NJ.
142. **Gelernter, J.** (2020, May). *Diverse populations and the Million Veterans Program* [Webinar]. Keynote address at the Psychiatric Genetics Consortium Cross-Population SIG.
143. **Gelernter, J.** (2020, May). *Insights into the genetics of PTSD and substance use disorders based on the MVP sample* [Webinar]. BTSP Lecture, New Haven, CT.
144. **Girgenti, M. J.** (2019, November). *Sex-specific transcriptomic Alterations in posttraumatic stress disorder across multiple regions of frontal cortex*. Sackler Family Psychiatry Seminar Weill-Cornell School of Medicine, New York, NY.
145. **Iverson, K. M.,** Driscoll, M., Danitz, S., Grillo, A., Gerber, M., Dichter, M., Hamilton, A., & **Wiltsey-Stirman, S.** (2019, October). *Recovering from IPV through strengths and empowerment (RISE)*. Initial evaluation of a brief counseling intervention. Presentation at the VHA HSR&D/QUERI National Meeting, Washington, DC.
146. Javier, S. J., **Kimerling, R.,** & **Zimmerman, L. E.** (2020, July). *Measuring ethnicity and race using the common data model: Implications for precision in health disparities research*. Oral presentation at the Virtual Academy Health Annual Research Meeting, Boston, MA.
147. **Jaworski, B. K.,** & **Owen, J. E.** (2020, June). Unseen burdens and barriers: PTSD, romantic relationships, and social class. In H. Reppond (Chair), *Economic vulnerability: Individual, interpersonal, and institutional intersections*. Annual meeting of the Society for the Psychological Study of Social Issues, Denver, CO.
148. Kaysen, D., McClendon, J., Seedat, S., & **Shipherd, J. C.** (2020, August). *Trauma from an intersectional perspective* [Webinar]. Webinar panel discussion presented by the International Society for Traumatic Stress Studies.
149. **Kearns, J. C.,** Esposito, E. C., Bishop, T. M., Pigeon, W., & Glenn, C. R. (2020, May). *Examining the agreement between actigraphy and sleep diaries: A 28-day real-time monitoring study among suicidal adolescents following acute psychiatric care*. Poster presented at the Association for Psychological Science 32nd Annual Convention, Chicago, IL.
150. **Kehle-Forbes, S.,** Ackland, P., Chard, K., Foa, E. B., Lyon, A., Meis, L., Orazem, R., Polusny, M., **Schnurr, P. P., Spont, M.,** Valenstein-Mah, H., & Zickmund, S. (2019, October). *"She still doesn't know me" describing the divergent experiences of veterans who complete versus discontinue trauma-focused therapy for PTSD*. Presentation at VA Health Services Research / QUERI National Conference, Washington, DC.
151. **Kimerling, R.,** Schalet, B., Reise, S., Zulman, D., & Lewis, E. (2019, November). *Development of a patient engagement scale for veterans*. Paper presented at the International Society for Quality of Life Research, San Diego, CA.
152. Lawrence, K. A., **Vogt, D.,** Slade, E. M., Dugan, A. J., & **Smith, B. N.** (2019, December). *Longitudinal trajectories of mental health symptomatology and psychosocial functioning in male and female Iraq and Afghanistan veterans*. Poster presented at the Annual Meeting of the Building Interdisciplinary Research Careers in Women's Health Program, Bethesda, MD.

Appendix F: Scientific Presentations by National Center Staff

(Other, continued)

153. **Lee, L. O.** (2019, November). Discussion. In T. A. Baker (Chair), *Presidential symposium: The ties that bind: The influence of social media and technology in the lives of older adults*. Symposium at the 71st Annual Scientific Meeting of the Gerontological Society of America, Austin, TX.
154. **Lee, L. O.** (2019, November). Is the path easier on the brighter side? Optimism and daily stress processes across 16 years. In E. S. Kim (Chair), *Characterizing the pathways underlying the association between psychological well-being and health*. Symposium conducted at the Seventy-First Annual Scientific Meeting of the Gerontological Society of America, Austin, TX.
155. **Lee, L. O.**, & Kubzansky, L. D. (2020, March). Childhood emotional abuse and adulthood cardiovascular stress response: Do psychological resources make a difference? In L. O. Lee (Chair), *When do psychological resources mitigate social disparities in health, and for whom?* Symposium conducted at the 78th Annual Meeting of the American Psychosomatic Society (cancelled due to COVID-19), Long Beach, CA.
156. Levayah, X., **Livingston, N.**, Ameral, V., Brief, D., & **Keane, T. M.** (2020, August). *Alcohol and PTSD outcomes among returning veterans following use of web-based dual-diagnosis intervention: Does age moderate treatment effects?* Poster presentation at the 128th Annual Convention of the American Psychological Association, Virtual.
157. **Levy, I.** (2020, February). *A neuroeconomics approach to mental illness*. Winter Conference on Neural Plasticity, St Kitts, Lesser Antilles.
158. **Levy, I.** (2020, January). *Behavior and brain under uncertainty in health and disease*. Presented for the ELSC seminar, Hebrew University Jerusalem, Israel.
159. **Levy, I.** (2020, May). *Individual differences in decision-making under uncertainty: A neuroeconomic approach*. Presented for the Department of Neurobiology Seminar at the Weizmann Institute of Science, Rehovot, Israel.
160. Livingston, N. A., Berke, D., Scholl, J., Ruben, M., & **Shipherd, J. C.** (2020, August). *Trauma, PTSD, and treatment disparities among LGBTQ veterans and the integration of trauma and minority stress theories to improve treatment outcomes* [Webinar]. Military trauma in understudied, high-risk veteran populations: Women and LGBTQ individuals. Symposium accepted for presentation at the 128th annual convention of the American Psychological Association, Washington, DC.
161. **Morrison, F. G.**, McCullough, K., Chatzinakos, C., **Miller, M. W.**, **Logue, M. W.**, **Wolf, E. J.**, Carlezon, W., Ressler, K., Kellis, M., **Huber, B.**, & Daskalakis, N. (2020, May). *Single-nucleus transcriptomic analysis of PTSD and MDD in human post-mortem DLPFC*. Abstract Published for Symposium Scheduled to be Presented at the Annual Meeting of the Society of Biological Psychiatry, New York, NY (conference canceled due to COVID-19 pandemic).
162. **Niles, B. L.**, Reid, K., **Whitworth, J.**, Alligood, E., Williston, S. K., Grossman, D., & Mori, D. L. (2020, May). *A call to action: Evidence for Tai Chi in the treatment of PTSD*. Poster accepted for the International Congress on Integrative Medicine and Health Conference, Virtual.
163. O'Malley, K. A., Bamonti, P., Graham, K., Smith, R., Gurevitch, J., & **Pless Kaiser, A.** (2019, November). *Later-adulthood trauma re-engagement in Vietnam veterans with PTSD: Findings from a program evaluation project*. Presentation at the Seventy-First Annual Scientific Meeting of the Gerontological Society of America, Austin, TX.
164. Ordoñez, C., **Tiet, Q. Q.**, Scott, S., Lopez, C., Kixmiller, J., & Collins, W. (2019, November). *Social skills training for verbal aggression in conserved adults with traumatic brain injury, schizophrenia, and schizoaffective disorder*. National Academy of Neuropsychology 39th Annual Conference, San Diego, CA.
165. Peterson, A. L., Blount, T. H., Foa, E. B., Brown, L., **McLean, C. P.**, **Keane, T. M.**, Schobitz, R. P., DeBeer, B. R., Fina, B. A., Evans, W. R., Synett, S., Hall-Clark, B. N., Rentz, T. O., Yarvis, J. S., Dondanville, K. A., Hansen, H., Jacoby, V. M., Lara-Ruiz, J., Straud, C., & Hale, W. (2019, October). Intensive Prolonged Exposure for combat-related PTSD: Preliminary results from a randomized clinical trial. In A. L. Peterson (Chair), *STRONG STAR and the Consortium to Alleviate PTSD (CAP) research update*. Symposium conducted at the San Antonio Military Health System and Universities Research Forum, San Antonio, TX.
166. Rivera, G. L., Haller, M., **Norman, S. B.**, & **Colvonen, P.** (2020, April). *Feasibility of integrating OSA screening for veterans with PTSD/SUD on a VA residential unit*. Poster presented at the Collaborative Perspectives on Addiction, San Diego, CA.
167. **Schnurr, P. P.**, **Lunney, C. A.**, **Walser, R. D.**, & Lang, A. J. (2019, October). *Acceptance and Commitment Therapy for PTSD*. HSR&D Annual Meeting, Washington, DC.
168. **Scioli-Salter, E. R.**, **Whitworth, J.**, **Esterman, M.**, **Dutra, S.**, **Bogdan, K.**, **Eld, A.**, & **Rasmusson, A. M.** (2020, May). *Neurobiological mediators of self-regulatory and reward-based motivational predictors of exercise maintenance in chronic pain and PTSD: An exploratory pilot study*. Presentation at the 41st Annual Meeting and Scientific Sessions of the Society of Behavioral Medicine, Virtual.

Appendix F: Scientific Presentations by National Center Staff

(Other, continued)

169. **Sloan, D. M.** (2020, March). *Rethinking treatment for PTSD: Can treatment duration be reduced?* Invited Presentation at the Psychology Department of Stony Brook University, Stony Brook, NY.
170. **Street, A. E.** (2020, August). *Sexual assault and PTSD* [Webinar]. Invited address for the Posttraumatic Stress and Related Disorders, Virtual.
171. **Street, A. E.** (2020, June). *Talking with veterans about military sexual trauma* [Webinar]. Invited address for the National Military Sexual Trauma Support Team's Teleconference Training Series.
172. **Sullivan, D. R.** (2019, October). *Neural and behavioral correlates of trauma exposure and PTSD*. Presented for the Center for Depression, Anxiety and Stress Research 2019-2020 Speaker Series, McLean Hospital/Harvard Medical School, Belmont, MA.
173. **Sullivan, D. R., Salat, D., Wolf, E. J., Logue, M. W., Fortier, C. B., Fonda, J. R., Milberg, W., McGlinchey, R., & Miller, M. W.** (2020, May). *Increased cerebral blood flow is associated with early life trauma in military personnel*. Poster accepted for presentation at the Annual Meeting of the Society of Biological Psychiatry, New York, NY, cancelled due to COVID-19 pandemic.
174. Sun, D., Rakesh, G., Clarke, E., Haswell, C., Buckley, M. N., Morey, R., Ching, C., Jahanshad, N., Thompson, P., **Logue, M. W.**, Wang, X., & ENIGMA-PGC PTSD Neuroimaging Working Group (2020, June). *Network-based cortical atrophy in posttraumatic stress disorder: Results from the ENIGMA PGC PTSD*. Organization for Human Brain Mapping, Virtual.
175. **Vogt, D.** (2019, October). *Assessing the well-being of veteran well-being*. Invited Presentation to COVER Commission, West Roxbury, MA.
176. **Vogt, D.** (2019, October). *Identifying and prioritizing mental health stigma measures*. Invited Moderator at University of California Irvine Sponsored Conference on Conceptualizing and Measuring Mental Illness Stigma for Evaluation, Lake Arrowhead, CA.
177. **Vogt, D.** (2019, October). *Mental health stigma in military veterans: What is it, where does it come from, and how does it impact veterans' treatment seeking?* Invited Presentation at University of California Irvine Sponsored Conference on Conceptualizing and Measuring Mental Illness Stigma for Evaluation, Lake Arrowhead, CA.
178. **Vogt, D.** (2020, January). *Development of a well-being monitoring tool for the health care context: Application to whole health care*. Invited Presentation to VA Boston Whole Health Team, West Roxbury, MA.
179. **Vogt, D.** (2020, January). *Veterans' health and well-being in the first year after leaving military service* [Webinar]. Invited Webinar for Department of Defense Transition Webinar Series, Transition to Veterans Program Office.
180. **Vogt, D.** (2020, July). *Veterans' health and well-being in the first three years after leaving military service* [Webinar]. Invite Webinar to Mental Illness Research, Education and Clinical Center (MIRECC), James J. Peters VA Medical Center.
181. **Vogt, D.** (2020, June). *Barriers and facilitators to help-seeking in military veterans* [Webinar]. Invited Webinar for DoD Transition Program Office Barriers Reduction Research Forum.
182. **Wolf, E. J.** (2020, April). *Measurement of trauma exposure and traumatic stress: Moving beyond case status*. In A. J. (Chair), *Post-traumatic stress disorder working group of the psychiatric genomics consortium (PGC) session*. Symposium conducted at the Pathways to Therapeutics conference, Virtual.
183. **Wolf, E. J., Logue, M. W., Sullivan, D. R., Stone, A., Schichman, S., McGlinchey, R. E., Milberg, W. P., & Miller, M. W.** (2020, March). *Synergistic effects of klotho and traumatic stress on accelerated cellular aging*. In K. Rentscher (Chair), *Biobehavioral influences on epigenetic aging*. Symposium conducted at the Seventy-Eighth Annual Scientific Meeting of the American Psychosomatic Society, Virtual.
184. **Zimmerman, L. E.** (2019, December). *Modeling to Learn: Empowering upgraded frontline healthcare team decision-making using participatory system dynamics*. Presented at NYU-CUNY Prevention Research Center, Graduate School of Public Health & Health Policy, City University of New York, New York, NY.
185. **Zimmerman, L. E., & Lounsbury, D.** (2019, October). *Modeling to Learn: Helping care teams improve implementation of medication assisted therapies for alcohol and opioid use disorders*. Implementation Science Pre-Conference Workshop at Addiction Health Services research Conference, Park City, UT.

APPENDIX G

EDUCATION PRESENTATIONS BY NATIONAL CENTER STAFF

American Psychological Association | Boston, Ma. August 2020 Virtual

1. Brown, G. K., & **McGee-Vincent, P.** *Suicide safety planning: Integrating a new mobile safety planning tool into your practice* [Webinar].
2. Brown, L. S., Elmore Borbon, D., Hollon, S. D., Remer, P. P., & **Schnurr, P. P.** Discussant. In C. B. Allard (Chair), M. Tutu van Furth & J. Thubten (moderators). *Transcending divisiveness: Depolarizing practices from around the globe.*
3. Farmer, S., **Livingston, N., Mahoney, C. T., & Keane, T. M.** *Longitudinal course of mental health symptoms among veterans with and without cannabis use disorder.*
4. **Knight, J. A.** *Factors to facilitate effective instruction in university settings for veteran students with PTSD and TBI.*

International Society of Traumatic Stress Studies | Boston, Ma. November 2019

5. **Cloitre, M., & Ortigo, K. M.** *STAIR Narrative Therapy: Using relational models to guide treatment.*
6. **Cloitre, M.,** Shevlin, M., Hyland, M., Roberts, N., & Karatias, T. *Assessment and treatment of ICD-11 complex PTSD.*
7. **Hayes, J. P.,** van Rooij, S., **Pineles, S. L., & Logue, M. W.** *Introduction to the neurobiology of PTSD: Key findings and methodologies.*
8. **Schnurr, P. P., Friedman, M. J., Keane, T. M., Krystal, J. H., & Hamblen, J. L.** *30 Years of the National Center for PTSD: Past, present, and future.*
9. **Watson, P.,** O'Donnell, M., Sijbrandij, M., & Naturale, A. *Providing a spectrum of skill-building interventions after disasters and mass violence.*

U.S. Department of Veterans Affairs

10. **Bosch, J. O.** (2020, March). *Use of VA mobile mental health apps to support telemental health services* [Webinar]. Presented for the V20 Rural Veteran and Telehealth Didactic Series.
11. **Galovski, T. E.** (2019, October). *The development of an early warning system for determining the benefits (or diminishing returns) or increasing the length of treatment for PTSD* [Webinar]. PTSD Consultation Program Monthly Lecture Series.
12. **Galovski, T. E.** (2020, April). *Reconciling manualized therapy and common factors: Complimentary or mutually exclusive?* [Webinar]. Presented for the VA Boston Psychology Fellowship Program.
13. **Galovski, T. E.** (2020, March). *Suicide prevention webinar: Supporting women veterans* [Webinar]. Presented for the VA Office of Mental Health and Suicide Prevention Partner Webinar Series.
14. **Galovski, T. E.** (2020, March). *Women Veterans Network (WoVeN): Building a community for women veterans* [Webinar]. National Center for PTSD Monthly Lecture Series.
15. **Galovski, T. E., & Corchado, C.** (2020, June). *Social networking: Keeping women veterans connected part 2* [Webinar]. Presented for the California Department of Veteran Affairs Social Networking Series.
16. **Holtzheimer, P. E.** (2019, December). *Focal brain stimulation for PTSD* [Webinar]. VISN 20 MIRECC.
17. **Holtzheimer, P. E.** (2019, October). *Unconventional treatments for PTSD* [Webinar]. National Center for PTSD Consultation Lecture.

18. **Holtzheimer, P. E.** (2020, January). *Unconventional treatments for PTSD* [Webinar]. VISN 20 MIRECC.
19. **Iverson, K. M.,** & Caplan, J. (2020, June). *Clinical considerations for addressing intimate partner violence during the COVID-19 era* [Webinar]. Presented for the VA PTSD Consultation Program.
20. **Iverson, K. M.,** Campbell, J. C., Gerber, M. R., & Snedaker, K. (2019, November). *Traumatic brain injury and intimate partner violence: Interdisciplinary approaches to healthcare* [Webinar]. Presented for the VA Office of Social Work Services Educational Series.
21. **Juhasz, K. M.** (2019, October). *Cards for Connection: Coping skills playing cards for veterans*. Presented for the 2019 VHA Innovation Experience, Washington, DC.
22. **Juhasz, K. M.** (2020, April). *Cards for Connection* [Webinar]. Rocky Mountain MIRECC Short Takes on Suicide Prevention. Retrieved from <http://denvermirecc.libsyn.com/cards-for-connection-with-katie-juhasz>.
23. **Kehle-Forbes, S.** (2020, April). *Treatment engagement and retention in patients with PTSD* [Webinar]. Presented for VA VISN 20 Mental Illness Research Education & Clinical Center Continuing Education Series.
24. **Livingston, N.** (2020, April). *Minority stress, mental health disparities, and unmet treatment need among sexual and gender minority veterans* [Webinar]. Presented for the VA HSR&D Cyberseminars Series.
25. **McCaslin, S. E.** (2020, August). *Asking the question: Implementing best policies and practices for screening about military status and suicide*. VA/SAMHSA Governor's Challenge to Prevent Suicide Among Service Members, Washington D.C. (virtual).
26. **McCaslin, S. E.** (2020, August). *Asking the question: Implementing best policies and practices for screening about military status and suicide*. VA/SAMHSA Governor's Challenge to Prevent Suicide Among Service Members, Washington D.C. (virtual).
27. **McCaslin, S. E.,** & Schwartz, L. (2020, February). *Asking the question: Implementing best policies and practices for screening about military status and suicide*. Invited workshop presented at VA/SAMHSA Governor's Challenge to Prevent Suicide Among Service Members, Washington D.C.
28. **McGee-Vincent, P.** (2020, July). *VA's new digital safety plan: Implementing best policies, practices, and resources* [Live webinar] [Webinar]. Presentation for SAMHSA's Best Practices in Suicide Prevention for Service Members, Veterans, and their Families Technical Assistance Series. Retrieved from <https://www.youtube.com/watch?v=kyA-HvBFyK0>.
29. **McGee-Vincent, P.,** & Avery, T. (2020, June). *VA mobile mental health apps: From self-management to suicide prevention* [Webinar]. VISN 5 MIRECC Educational Webinar for VA Peer Specialists. Online Presentation.
30. **Schnurr, P. P.** (2020, July). *Pharmacology of posttraumatic stress disorder*. Research Advisory Committee on Gulf War Veterans, Department of Veterans Affairs, Washington, DC.
31. **Schnurr, P. P.** (2020, June). *National Center for Posttraumatic Stress Disorder*. Research advisory committee on veterans readjustment, Washington, DC (virtual).
32. **Spoont, M.** (2020, July). *Racial/ethnic disparities in PTSD treatment* [Webinar]. Presented for the NCPTSD Mentoring Program Conference Call.
33. **Sullivan, D. R.** (2019, December). *Pothole analysis tutorial*. Presented for the VA Boston Healthcare System Neuroimaging Research for Veterans (NeRve) Tutorial Series, Boston, MA.
34. **Vogt, D.** (2020, September). *Toward gender-sensitive VA care for women veterans: Where we came from and where we are going* [Webinar]. Invited address for VA HSR&D "Spotlight on Women's Health" Cyberseminar Series.
35. **Walsler, R. D.** (2020, July). *Psychological flexibility and women's mental health and well-being in the age of COVID-19* [Webinar]. Presentation at VA Women's Mental Health Monthly Clinical Training Teleconference. Retrieved from Women's Mental Health/Office of Mental Health and Suicide Prevention, online.

Other

36. **Becket-Davenport, C. M., Juhasz, K. M.,** & Weitlauf, J. (2020, July). *Coping with COVID 19: Virtual resources for patients and providers* [Webinar]. HSR&D Career Development Award Enhancement Initiative.
37. Chu, B. C., Newman, M. G., **Sloan, D. M.,** Comer, J. S., Hart, T. A., Kamholz, B. W., Khanna, M., Martell, C. R., & McHugh, R. K. (2019, November). *How to get published in Cognitive and Behavioral Practice and Behavior Therapy*. Presentation at the Fifty-Third Annual Convention of the Association for Behavioral and Cognitive Therapies, Atlanta, GA.

Appendix G: Education Presentations by National Center Staff

(Other, continued)

38. **Galovski, T. E.** (2019, December). *Reconciling manualized therapy and common factors: Complimentary or mutually exclusive?* Harvard University Psychiatry Grand Rounds at the Edith Nourse Rogers Memorial Veterans Hospital, Bedford, MA.
39. **Galovski, T. E.** (2019, October). *Cognitive Processing Therapy and the treatment of PTSD.* Workshop for Texas community mental health service providers, Dallas, TX.
40. **Galovski, T. E.** (2019, October). *PTSD and traumatic brain injury in women survivors of intimate partner violence* [Webinar]. Pink Concussions task force call. Retrieved from <https://www.pinkconcussions.com/taskforcecalls>.
41. **Galovski, T. E.** (2020, April). *The impact of trauma - women as one* [Webinar]. Presented for Women as One. Retrieved from <https://www.youtube.com/watch?v=AsugD-o-74o>.
42. **Galovski, T. E.** (2020, June). *Cognitive Processing Therapy and the treatment of PTSD.* Workshop for Texas community mental health service providers, Delivered Virtually.
43. **Galovski, T. E.** (2020, March). *Moving the needle further toward recovery from PTSD in women veterans.* Steven A. Cohen Military Family Clinic Lecture at the University of Pennsylvania, Philadelphia, PA.
44. **Galovski, T. E.** (2020, March). *Women Veterans Network: Building a community for women veterans* [Webinar]. Presented for the Women's National Health Workgroup.
45. **Galovski, T. E.** (2020, September). *Understanding the role of social support in veteran's well-being: The development and implementation of the women veterans network* [Webinar]. Australasian Services Care Network.
46. Gerber, M. R., Cohen, A., & **Iverson, K. M.** (2019, November). *Addressing social determinants of health and trauma exposure in medical patients: Applying lessons learned from VA.* Workshop at the annual meeting of the Society for General Internal Medicine New England Regional Meeting, Boston, MA.
47. Greene, C. J., Ulmer, C., Miller, K., & **McGee-Vincent, P.** (2019, November). *Using digital tools to facilitate cognitive behavioral therapy for insomnia treatment with veterans.* Association for Behavioral and Cognitive Therapies 53rd Annual Convention, Atlanta, GA.
48. **Holtzheimer, P. E.** (2020, January). *Deep brain stimulation for treatment-resistant depression* [Webinar]. Anxiety Depression Association of America Webinar.
49. **Juhasz, K. M.** (2019, November). *PTSD Family Coach.* Presented for AARP's Military Caregiving Tools: A Sky Blossom Workshop, Washington, DC.
50. **Juhasz, K. M.** (2020, April). *Mobile mental health apps for Veterans* [Webinar]. Presented for America's Warrior Partnership Battle Rhythm.
51. **Keane, T. M.** (2020, August). *Stress and related disorders: The latest from neurobiology to treatment.* Presented at Harvard Medical School Conference. Virtually Delivered, Boston, MA.
52. **Keane, T. M.** (2020, January). *Effectiveness of online alcohol and PTSD intervention.* Presented at Massachusetts General Hospital Program in Addiction Medicine, Boston, MA.
53. **McLean, C. P.** (2020, May). *Frontline workers: Trauma and PTSD* [Webinar]. Presented for the Anxiety Canada COVID-19 Town Hall Online Series. Retrieved from <https://www.anxietycanada.com/articles/town-hall-frontline-workers-trauma-and-ptsd-thursday-may-28/>.
54. Neria, Y., Markowitz, J., **Becket-Davenport, C. M.**, & Ryba, M. (2020, June). *Your brain on the military: Remaining intrepid* [Webinar]. Presented for Veterans at the Intrepid Sea, Air, & Space Museum Complex New York.
55. **Prins, A.** (2020, February). *Bringing faculty fellows into your Veterans Resource Center.* NASPA Symposium for Military-Connected Students, Seattle, WA.
56. **Schnurr, P. P.** (2019, November). *How do we make effective treatment for PTSD more effective? Road home program.* Rush Medical College, Chicago, IL.
57. **Schnurr, P. P.** (2019, November). *Psychotherapy in the treatment of PTSD: The state of the evidence.* Grand Rounds, Rush Medical College, Chicago, IL.
58. **Schnurr, P. P.** (2020, August). *Psychotherapy in the treatment of PTSD: The state of the evidence.* Harvard-McLean conference on Posttraumatic Stress and Related Disorders, Boston, MA (virtual).
59. **Shipherd, J. C.** (2020, April). *Transgender and gender diverse trauma recovery* [Webinar]. Harvard Extension School webinar presentation.

Appendix G: Education Presentations by National Center Staff

(Other, continued)

60. **Shipherd, J. C.**, Burgess, C., Sloan, C., Knetig, J., Lange-Altman, T., Burroughs, S., Mejia, S., & Kauth, M. R. (2020, August). *Trauma informed care for lesbian, gay and bisexual veterans* [Webinar]. Online Learning. Talent Management System.
61. **Sloan, D. M.** (2019, December). *Written Exposure Therapy for PTSD* [Webinar]. Presented for the Fifty-Third Annual Conference for the Association for Behavioral and Cognitive Therapies.
62. **Sloan, D. M.** (2019, October). *Written Exposure Therapy: A brief treatment approach for PTSD*. Presented for the University of Minnesota-Twin Cities, Department of Family Medicine, Minneapolis, MN.
63. **Sloan, D. M.**, & **Marx, B. P.** (2019, November). *Written Exposure Therapy for PTSD*. Presented for the Fifty-Third Annual Institute for the Association for Behavioral and Cognitive Therapy, Atlanta, GA.
64. **Taft, C. T.** (2019, October). *Trauma-informed IPV intervention*. Presented for the 2019 National Association of Social Workers Virtual Forum, Washington, DC.
65. True, G., **Juhasz, K. M.**, Facundo, R., Bond, A., & Williams, E. (2020, April). *Playing cards and graphic medicine: Connecting veterans to housing and mental health services through innovative, veteran-facing products* [Webinar]. Presented for the VIREC Cyberseminar Using Data & Information Systems in Partnered Research Series.
66. **Vogt, D.** (2020, August). *Unique readjustment concerns for newly separated U.S. female veterans* [Webinar]. Invited Webinar for Australasian Services Care Network.
67. **Vogt, D.** (2020, February). *Use of the Well-Being Inventory (WBI) to enhance knowledge about military veterans' well-being* [Webinar]. Webinar and Working Roundtable Program on Military, Veterans and Families Well-being.
68. **Walser, R. D.** (2020, July). *The evolution of CBS supervision*. Presentation at the 18th annual meeting of the Association for Contextual Behavioral Science, virtual.
69. **Walser, R. D.** (2020, September). *Keynote: Psychological flexibility in the time of COVID-19: Finding hope and well-being inside of global fears*. Presentation at VA Mental Health Summit 2020: Creating Hope in a Pandemic, Iowa City, IA.

APPENDIX H

EDITORIAL BOARD ACTIVITIES

Administration and Policy in Mental Health Services and Mental Health Services Research

Wiltsey Stirman

Annals of LGBTQ Public and Population Health

Livingston

Asian Biomedicine (Research, Reviews and News)

Gelernter

the Behavior Therapist

Wiltsey Stirman (Associate Editor)

Behavior Therapy

Sloan (Editor), Thompson-Hollands, Wiltsey Stirman

Behaviour Research and Therapy

Sloan

Biological Psychiatry

Duman, Gelernter, Krystal (Editor), Sanacora

Biological Psychiatry: Cognitive Neuroscience and Neuroimaging

Sanacora

Brain Sciences

Miller

Chinese Journal of Psychology

Keane

Chronic Stress

Abdallah (Editor-in-Chief), Averill (Deputy Editor), Duman, Esterlis, Krystal (Associate Editor), Pietrzak, Sanacora, Woodward

Clinical Psychology Review

Pineles

Clinical Psychology: Science and Practice

Marx

Cognitive and Behavioral Practice

Livingston, McLean, Norman, Wachen

Community Mental Health Journal

Harpaz-Rotem

Current Treatment Options in Psychiatry

Sippel (Guest Co-Editor)

Depression and Anxiety

Holtzheimer, Schnurr, Wolf

Eating Behaviors

Mitchell (Associate Editor)

Eating Disorders: The Journal of Treatment and Prevention

Mitchell (Guest Editor)

European Journal of Psychotraumatology

Cloitre (Associate Editor), Pineles

Exploration of Medicine

Miller

Frontiers in Neuroscience: Neurogenesis

Duman (Associate Editor)

International Journal of Emergency Mental Health

Keane

Journal of Abnormal Psychology

Miller (Associate Editor), Wolf

Journal of Anxiety Disorders

Pietrzak

Journal of Clinical Psychology

Sloan

Journal of Consulting and Clinical Psychology

Marx, Sloan, Taft

Journal of Contemporary Psychotherapy

Sloan

Journal of Depression and Anxiety

Tiet

Journal of Family Psychology

Taft

Journal of Family Violence

Taft

Appendix H: Editorial Board Activities

Journal of Neuroscience

Levy (Associate Editor)

Journal of Obsessive-Compulsive and Related Disorders

Thompson-Hollands

Journal of Trauma and Dissociation

Barlow, Carlson, Marx

Journal of Traumatic Stress

Galovski (Associate Editor), Miller, Morland, Wolf

Journals of Gerontology: Psychological Sciences

Spiro

Molecular Neuropsychiatry

Abdallah

Molecular Pharmacology

Duman

Neuropsychology

Vasterling

Psychiatric Genetics

Gelernter

Psychological Assessment

Mitchell, Vasterling

Psychology Injury and Law

Pietrzak

Psychological Services

Norman

Psychological Trauma: Theory, Research, Practice and Policy

Barlow, Carlson, Keane, Marx; Miller, Smith, Vogt, Wachen

Psychopharmacology

Abdallah (Advisory Editor), Duman

Psychosomatic Medicine

Sloan

Trauma, Violence & Abuse

Iverson

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

3375 Koapaka Street
Suite 1-560
Honolulu, HI 96819

WOMEN'S HEALTH SCIENCES DIVISION

VA Boston Healthcare System (116B-3)
150 South Huntington Street
Boston, MA 02130

