

Common Data Elements for Posttraumatic Stress Disorder Research

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An expert work group with 7 members was formed under the cosponsorship of 5 U.S. federal agencies to identify common data elements for research related to posttraumatic stress disorder (PTSD). The work group reviewed both previous and contemporary measurement standardization efforts for PTSD research and engaged in a series of electronic and live discussions to address a set of predefined aims. Eight construct domains relevant to PTSD were identified: (1) traditional demographics, (2) exposure to stressors and trauma, (3) potential stress moderators, (4) trauma assessment, (5) PTSD screening, (6) PTSD symptoms and diagnosis, (7) PTSD-related functioning and disability, and (8) mental health history. Measures assigned to the core data elements category have relatively low time-and-effort costs in order to make them potentially applicable across a wide range of studies for which PTSD is a relevant condition. Measures assigned to the supplemental data elements category have greater costs but generally demonstrate stronger psychometric performance and provide more extensive information. Accordingly, measures designated as supplemental are recommended instead of or in addition to corresponding core measures whenever resources and study design allow. The work group offered 4 caveats that highlight potential limitations and emphasize the voluntary nature of standardization for PTSD-related measurement.

Key Words: Diagnostic techniques and procedures; Outcome assessment; Rehabilitation; Stress disorders, post-traumatic.

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THE CHARGE GIVEN to the PTSD Work Group was to define a common set of PTSD-related variables for inclusion in demographics and clinical assessment, and to recommend screening, assessment, and common outcome measures for use across studies for which PTSD-related measurement is

List of Abbreviations

CAPS	Clinician Administered Posttraumatic Stress Disorder Scale
CES	Combat Exposure Scale
CTQ	Childhood Trauma Questionnaire
DoD	Department of Defense
DRRI	Deployment Risk and Resilience Inventory
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition
ICD-9	International Classification of Diseases, Ninth Revision
INTRuST	Injury and Traumatic Stress Clinical Consortium
LEC	Life Events Checklist
PCL	Posttraumatic Stress Disorder Checklist
PCL-C	Posttraumatic Stress Disorder Checklist Civilian
PCL-M	Posttraumatic Stress Disorder Checklist Military
PCL-S	Posttraumatic Stress Disorder Checklist Specific Event
PC-PTSD	Primary Care Posttraumatic Stress Disorder Screen
PDS	Posttraumatic Diagnostic Scale
PSS-I	Posttraumatic Stress Disorder Symptom Scale Interview Version
PTSD	posttraumatic stress disorder
SDS	Sheehan Disability Scale
SES	socioeconomic status
SF-12	Medical Outcomes Study–Short Form (12-item version)
SF-36	Medical Outcomes Study–Short Form (36-item version)
STRONG STAR	South Texas Research Organizational Network Guiding Studies on Trauma and Resilience
TBI	traumatic brain injury
TLEQ	Traumatic Life Events Questionnaire
VA	Department of Veterans Affairs
VR-12	Veterans RAND Health Survey–Short Form (12-item version)
VR-36	Veterans RAND Health Survey–Short Form (36-item version)

relevant. The PTSD Work Group effort was shaped by the aim of promoting convergence between research on PTSD and research on TBI.¹

NATURE OF WORK GROUP EXPERTISE

Members of the PTSD Work Group were recruited and appointed by the Common Data Elements Interagency Steering Committee.¹ The PTSD Work Group provided wide-ranging expertise related to the development and validation of measures for trauma exposure and PTSD, the etiology of PTSD (particularly in relation to sexual assault and military combat), PTSD occurring in the context of TBI, evidence-based interventions for combat stress disorders, the use of health services by and the cost-effectiveness of care for military populations, the stress-related needs of military families during combat deployments, and health care system factors relevant to mass trauma and violence.

BACKGROUND

Importance and Relevance of PTSD

PTSD is a prominent mental health condition with an estimated prevalence of approximately 8% in the general adult population of the United States² and rates that are substantially higher in select subpopulations that include both past and current combat-exposed military personnel.^{3,4} PTSD is noteworthy for high levels of psychiatric comorbidity, particularly the presence of depression and/or substance use disorders.⁵ These co-occurring conditions typically develop after PTSD,^{6,7} and their presence contributes to both distress and impaired ability to function in key life roles (eg, work and family).⁸ Directly and indirectly, PTSD is projected to have substantial negative economic consequences.⁹

Experiences involving injury and threat to life are considered causal in triggering posttraumatic distress and are a required element of the formal diagnostic criteria for PTSD. There is potential for co-occurrence with TBI because the same types of experiences can be instrumental in both conditions.¹⁰ In addition, the scientific and clinical picture regarding TBI/PTSD comorbidity is complicated by a degree of symptom overlap (eg, complaints about concentration and memory) and the likelihood that either condition can potentially complicate treatment of the other.^{11,12} Given these considerations, PTSD-related assessment is potentially relevant for many studies that focus primarily on TBI issues.

Work Group Process

Background information was distributed to PTSD Work Group members in January 2009. This included a book chapter¹³ summarizing recommendations for PTSD-related measurement that had been formulated by a conference in 1995 sponsored jointly by the VA and the National Institute of Mental Health. These recommendations provided a foundation for the current effort.

Key recommendations from the 1995 conference included the following: (1) promoting use of psychometric properties (ie, validity, reliability, clinical utility) to evaluate and compare the quality of measures; (2) asserting the preference for structured diagnostic instruments that allow both dichotomous and continuous rating of PTSD symptoms; (3) noting the importance of evaluating impairment and disability associated with PTSD symptoms as indicators of condition severity; (4) stating the necessity of evaluating both A1 (exposure) and A2 (reactions) criteria when assessing traumatic stressors; and (5) specifying that trauma history-taking include questioning about a

range of potential traumatic event types (eg, disasters, accidents) across the lifespan, with detailed examination of key characteristics for each endorsed event (eg, perceived life threat, associated injury, duration).

PTSD Work Group members Murray Stein and Alan Peterson each identified data standardization efforts for PTSD-related and TBI-related research with which they already were involved. Stein made available a draft document outlining the uniform data set that is under development by the INTRuST (see background¹¹). Peterson made available the list of measures recommended by the multidisciplinary STRONG STAR research consortium (<http://www.strongstar.org>). The PTSD Work Group took account of the expert contributions made to these standardization efforts and recognized the potential for cross-study comparison that might result from measurement recommendations that align with those produced by these 2 influential research consortia.

The general process involved individual PTSD Work Group members reviewing measures in their assigned construct domains and then presenting relevant information and issues for discussion. This work was accomplished via e-mail and a series of conference calls. These exchanges were collaborative and constructive, with consensus reached quickly in most instances. Consensus was aided by substantial convergence between INTRuST and STRONG STAR recommendations, as well as the relative maturity of assessment methods in the traumatic stress field.

Factors Influencing Selection of Constructs

The PTSD Work Group engaged in a nomination process identifying 8 construct domains that are featured in PTSD-related assessment and research: (1) traditional demographics, (2) exposure to stressors and trauma, (3) potential stress moderators, (4) trauma assessment, (5) PTSD screening, (6) PTSD symptoms and diagnosis, (7) PTSD-related functioning and disability, and (8) mental health history. These key domains guided the scope of the effort and provided a framework for grouping the measures.

Distinguishing Between Core and Supplemental Data Elements

Variables or measures were assigned to the core data elements category if they generally require few resources (eg, involve self-report rather than clinical interview) and pose limited respondent burden (eg, have a low number of items). The relatively low time-and-effort costs of these measures make it feasible to consider applying them across a wide range of studies for which PTSD is a relevant psychologic health condition.

Measures listed in the supplemental data elements category generally show stronger psychometric performance than their counterparts in the core data elements category, and they invariably provide information that broadens or refines the scope of inquiry. For these reasons, supplemental data elements are recommended instead of or in addition to their core data elements counterparts whenever resources and study design allow.

Factors Influencing Selection of Measures

Work Group decisions were guided by considerations that included favorable psychometric evidence (eg, validation and reliability), utility (eg, applicability), extent of adoption in the relevant scientific literature, resource requirements (eg, time required for administration, need for an interviewer), and burden on respondents. The impact of each consideration differed across variables and measures. For example, 2 measures might be comparable in terms of adoption but distinguished from one another on administration time, whereas 2 other measures might be compa-

rable in terms of validation but distinguished from one another by extent of adoption in the traumatic stress literature.

The demographic variables of greatest relevance were those identified as risk markers for developing PTSD after exposure to a traumatic stressor. Measures addressing exposure to stressors and trauma focused on combat and other military experiences because of the substantial PTSD literature on this topic and its relevance to current deployments in Iraq and Afghanistan. Exposure measures focused outside the military context were judged in relation to both efficiency and ability to provide a quantitative index covering a range of potential trauma types across the lifespan. Potential moderators of stress were considered relevant to the impact of both trauma exposure and the experience of general life stress. The PTSD Work Group focused on measures designed for military personnel because there is somewhat more extensive research involving this target group.¹⁴ PTSD-related screening was identified as a target of interest in part because of several large ongoing efforts. This included mandatory screening in VA primary care clinics, mandatory outcome tracking related to VA PTSD services, and routine Post-Deployment Health Assessment by the U.S. DoD to identify potential needs of military personnel returning from deployments in Iraq and Afghanistan. Trauma assessment was viewed as fundamental to PTSD as it has been defined in the DSM-IV.¹⁵ The strongest measures for evaluating PTSD symptoms and establishing diagnosis can be labor-intensive; therefore, it was important to recognize the potentially decisive impact of resource availability (eg, trained professional interviewers) on measurement quality. Measurement of functioning and disability needed to reflect the substantial literature involving the Medical Outcomes Study Short Forms¹⁶ and the ability to convert these measures into quality-adjusted life-year units for cost-utility analysis purposes. Finally, mental health history was of interest because past or co-occurring psychiatric conditions have implications for PTSD risk as well as ongoing distress and impairment.¹⁷

PTSD Work Group discussion revealed and was influenced by 4 caveats that provide context for implementation of common data elements recommendations for PTSD. First, core data elements offer a limited framework and will not be sufficient for many research aims. Second, recommended measures should not preclude the use of other suitable measures or efforts to develop measures that may perform better than those identified at this time. Third, scientific aims and study-specific considerations are of primary importance in determining measurement. Accordingly, common data elements are viewed as a choice rather than an imposed requirement. Finally, caution is needed to avoid unjustified interpretation of measures, especially the relatively brief measures in the core group. Potential mistakes include making statements that imply diagnostic classification on the basis of self-report symptom measures alone or that claim trauma exposure based solely on endorsement of an experience without consideration of key event characteristics (eg, life threat).

CORE DATA ELEMENTS

Traditional Demographics

The PTSD Work Group concurs with recommendations outlined by the Demographics and Clinical Assessment Work Group¹⁸ regarding measurement for age, race and ethnicity, education, and military service. These and other traditional demographic variables are presented along with brief explanation of their relevance to PTSD.

Sex. The prevalence of PTSD for women is double that for men, whereas men experience more traumatic events than

women.^{2,19} It is worth noting, however, that women experience more interpersonal violence than men, and sex differences in the prevalence of PTSD appear to be attenuated in military populations where combat is the predominant stressor.^{20,21} The basic male/female classification reflecting biological dimorphism can be obtained via self-report, but in some circumstances (eg, with young children or people with cognitive impairment), it may be obtained from an informed caretaker, parent, or guardian. Designation of sex should allow for sensitivity to issues such as transgender identity and sexual reassignment surgery.

Age. Current age has utility for sample description, and age at the time of exposure to trauma has been related to PTSD risk. In general, children^{22,23} and people in middle adulthood^{24,25} have shown elevated risk, as have younger members of combat-deployed military cohorts.²⁶ Age can be calculated as the difference between current date and birth date, or simply obtained as a numeric value. The unit of measurement varies in 3 bands: (1) in days for infants up to 2 months, (2) in whole months for children from 3 to 48 months, and (3) in whole years beyond age 4 years.

Race and ethnicity. Minority designations in the United States, particularly African American race and Hispanic ethnicity, have been associated with elevated rates of PTSD.^{17,26,27} Minimum classification standards have been developed by the U.S. Office of Management and Budget (see <http://grants.nih.gov/grants/guide/notice-files/NOT-OD-01-053.html>). Race typically is self-selected from a categoric list. It can be obtained through a single endorsement that reflects a person's primary identity; however, multiracial respondents may prefer the opportunity to endorse all categories that apply, along with the option of designating 1 category as primary. Ethnicity in the U.S. context is structured as a dichotomous choice between Hispanic and non-Hispanic categories.

Education. Educational attainment is of interest because it has shown a negative relationship to the risk of developing PTSD after exposure to traumatic stress.^{17,25,28} Years of completed educational attainment can be indexed on a continuous scale, guided by U.S.-oriented milestones: grades Kindergarten through 12 (up to 13 years); associate's degree (2 years); bachelor's degree (4 years); master's degree (2 years); and doctorate (4 years). A second variable indicating highest level of educational attainment also is commonly used for categoric sample description and analysis.

Occupation-related resources. A simple index reflecting income or a composite index reflecting SES (eg, combining income, occupation, education) is of interest because of a negative relationship with the risk of developing PTSD after trauma exposure.^{27,28} The index by Hollingshead²⁹ is well known and widely used, but there are a variety of SES indices in the research literature that might be appropriate for a particular study.

Parameters of military service. Details regarding military service have descriptive utility for characterizing research samples. They also may provide risk markers for exposure to potentially traumatic experiences³⁰ as well as resilience markers associated with factors such as intellectual capability or level of training. Information about the nature and duration of military service may be accomplished using ad hoc forms that simplify collection of information about branches of the military, locations of service, beginning and end dates of service episodes, characterization of basic duties, and highest career rank achieved. Additional examples of relevant variables and categories can be found in recent large-scales studies of military personnel.^{4,31}

Exposure to Stressors and Trauma

Exposure to potentially traumatic military events. Exposure to combat is a well validated criterion A1 stressor for PTSD. The CES³² has an extensive history of use with veterans of U.S. military operations in Vietnam and, to a lesser extent, those who served during the Korean War and World War II. The CES is a 7-item self-report scale with categoric response options reflecting frequency of event exposure (eg, under enemy fire). It produces a total score ranging from 0 through 41 that can be compared to intensity bands ranging from “light” to “heavy” combat exposure. Use of the measure in relation to conflicts after 1973 should be based on the suitability of the instrument to the research question. CES administration requires 5 minutes or less.

Contemporary military deployment is associated with multiple domains that either qualify independently as criterion A1 stressors or potentially modify the stress-related impact of deployment. Our PTSD Work Group concurs with the Work Group on Operational Stress Research and Surveillance³³ in recommending targeted use of modules from the DRR1.^{34,35}

Potential Stress Moderators

Military social environment characteristics. Military unit social cohesion is positively associated with well-being in stressful environments and negatively associated with perceived barriers to care for mental health symptoms.³⁶ The 3-item Closely Knit, Cohesive, Interdependent Work Groups scale offers a brief index addressing this construct.³⁷

Trauma Assessment

Diagnostic screening for lifespan exposure to potentially traumatic events. The LEC^{38,39} is used to document exposure to categories of potentially traumatic events in preparation for detailed questioning during a structured PTSD interview. The LEC is a self-report form that lists 17 event types that each offers 5 response options: (1) Happened to me, (2) Witnessed it, (3) Learned about it, (4) Not sure, and (5) Doesn't apply. The categories are relatively comprehensive but not mutually exclusive. For example, because both exposure to combat and fire or explosion are listed as events, a respondent can endorse 1 or both if the fire or explosion occurred in a combat situation. Categoric response options make the LEC useful for cuing respondent recall but do not support quantification of event exposures in terms of severity, frequency, and so forth. The LEC is not needed if another comprehensive lifespan measure of potential traumatic exposure is administered.

Traumatic event classification. DSM-IV¹⁵ operationalizes trauma according to the 2 parts of PTSD criterion A: (1) the person was exposed to an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of oneself or others, and (2) the person's response to the event involved intense fear, helplessness, or horror. Accumulated evidence clearly supports the first component of this definition¹⁴ and, despite challenges to the necessity of the second component, the 2-part framework currently continues to be recommended.⁴⁰ Information addressing these 2 criteria can be obtained in a self-report format or via interview, but opportunity for follow-up questioning by a trained interviewer who determines event classification is the recommended method for formally designating an experience as traumatic.

PTSD Screening

Screening for PTSD symptoms. Background on this topic is provided by the review by Brewin⁴¹ of PTSD screening. The 4-item PC-PTSD is a brief measure that demonstrates good

diagnostic utility relative to PTSD status in both VA and DoD settings.^{42,43} Respondents mark items yes or no (1 or 0), values are summed, and a cut score of either 2 or 3 is typically applied. It is worth noting the availability of a 1-item screen⁴⁴ that may be advantageous for some applications despite demonstrating lesser psychometric properties. The PC-PTSD typically can be completed in less than 5 minutes.

PTSD Symptoms and Diagnosis

PTSD symptoms obtained via self-report. All PCL versions have 17 self-report items that reflect DSM-IV-based PTSD symptom criteria. These items are rated on a 5-point Likert scale (1, not at all, through 5, extremely) to indicate the degree to which the person has been bothered by the particular symptom during the preceding month. The PCL-M is a variant of the civilian version of the measure⁴⁵ that is presented later as a supplemental measure for PTSD screening. These versions differ only in the referencing of symptoms to stressful military experiences for the former, as opposed to stressful life experiences for the latter. PCL-M is particularly useful when details of the index military event either are not of interest or have been obtained by other means.

The PCL-S is largely identical to PCL-M in format except that symptom endorsements are indexed to a specified stressful or traumatic life experience. There is limited and conflicting evidence regarding the impact of referencing PCL symptom endorsements to a clearly specified event as opposed to unelaborated stressful military or life experiences, but in practice these approaches are treated as interchangeable. Selection of an index experience for PCL-S can be left to the respondent, determined by an interviewer, or otherwise imposed in accordance with study aims and procedures. Any of these methods offers the opportunity to individualize the potentially traumatic experience to which PTSD symptom ratings are referenced.

Researchers have formulated scoring criteria to arrive at presumptive PTSD status based on PCL symptom endorsements.⁴⁶ Cut scores referenced to PTSD status vary depending on the population under study (eg, community samples have lower cut scores than treatment-seeking samples; active duty military tend to have lower cut scores than veterans). PCL completion typically requires 5 to 10 minutes.

Functioning and Disability

Functional disability. The SDS^{47,48} is a 5-item self-report form that addresses symptom-related disruption in 3 domains: (1) work or school, (2) social life, and (3) family-life or home-life functioning. Respondents initially rate the level of disruption in each domain using Likert scales that range from 0 (not at all) through 10 (extremely), with qualitative category labels of mildly for ratings 1 through 3, moderately for ratings 4 through 6, and markedly for ratings 7 through 9. Then respondents estimate the number of days lost from work, school, or normal functioning in a given timeframe of interest (week, month, or 3mo). Finally, respondents estimate the number of days they felt impaired or underproductive at work, school, or in daily life during the specified period. Respondents typically complete the scale in about 2 minutes. The measure is available at http://www.cqaimh.org/pdf/tool_lof_sds.pdf.

Functioning, limitations, and well-being. SF-12^{49,50} and the similar VR-12⁵¹ each address 8 domains that include physical functioning, role limitations because of physical health problems, bodily pain, general health, vitality (energy/fatigue), social functioning, role limitations because of emotional problems, and mental health (psychologic distress and psychologic well-being). The score for each domain contributes to 1 of 2

composite scores reflecting either mental health or physical health. Norms are available for both the individual domains and the broader categories. The SF-12 and the VR-12 correlate well with the 36-item version of the respective measure (ie, SF-36 and VR-36; see <http://www.sf-36.org>).⁵¹ Raw SF-12 scores can be transformed into a preference-weighted health status metric that is commonly used in cost-effectiveness analysis.⁵² Respondents typically complete the 12-item questionnaire in 5 minutes.

SUPPLEMENTAL DATA ELEMENTS

Mental Health History

Psychiatric conditions and use of mental health services. Current psychiatric conditions that co-occur with PTSD are associated with greater distress and poorer functioning,⁸ while current use of mental health services has potential to reduce distress and positively affect functioning.^{17,53} In addition, past psychiatric conditions may confer risk for development of PTSD,²¹ while past PTSD status and use of mental health services both provide information that may be relevant to a variety of research and clinical issues. Accordingly, it is of interest to obtain lifespan information regarding psychiatric diagnoses and mental health care. The PTSD Work Group did not identify a specific measure or form for this purpose, instead recognizing that the method might involve self-report, informants, clinical interview, and/or record review depending on study aims and context.

Perceived stigma and barriers to mental health care. Stigma and other barriers have been implicated as potential contributors to avoidance of care for PTSD and other mental health problems.³⁷ Relevant information may be obtained with a 16-item instrument used by Hoge et al⁴⁶ for surveys of military personnel returning from deployments in Iraq and Afghanistan. Items are composed of statements with rating options from 1 (strongly disagree) through 5 (strongly agree), and completion requires 5 minutes or less.

Exposure to Stressors and Trauma

Lifespan information about exposure to potentially traumatic events. The aim is to provide a quantified summary of potentially traumatic experiences, including frequency of traumatic events and associated emotional reactions, that is amenable to statistical analysis. These criteria are met by the 23-item TLEQ,⁵⁴ a measure that addresses a wide range of sources of potential trauma, quantifies features of the exposure, and has demonstrated validity. It is divided into 22 categories of potentially traumatic events that are rated on a 7-point scale anchored in terms of event frequency. The TLEQ takes 10 to 12 minutes to complete.

Childhood adversity. Adversity in childhood appears to be a risk factor for the later development of PTSD after trauma.¹⁷ One element of this construct is experience with physical, sexual, and/or emotional abuse or neglect prior to age 18 years. These experiences are addressed by the Childhood Trauma Questionnaire,⁵⁵ a 28-item instrument composed of 5 scales plus 3 items that address underreporting. Response ratings range from 1 (never) through 5 (very often) for the primary items and 0 (never) or 1 (other-than-never) for the remaining 3 items.

A second element of childhood adversity is living with inadequate resources, such as homelessness, poverty, or malnutrition prior to age 18 years. The PTSD Work Group did not identify a specific assessment tool for this purpose, but either self-report or interview questioning about these deprivations is feasible.

Current life stressors. Adverse life context (eg, ongoing stress) appears to increase the risk for chronicity of posttraumatic reactions by complicating adaptation and undermining adjustment.^{27,56} Wide-ranging recommendations for measuring postdeployment stress exposures are offered by the Operational Stress Research and Surveillance Work Group.³³ Our circumscribed recommendation is for use of the Postdeployment Stressors Scale, a 17-item module from the DRRRI that includes questions related to current sources of life stress associated with accidents, employment, legal matters, relationships, and health. Although scale items are oriented to military personnel, they can be rephrased for postmilitary or nonmilitary application. It can be completed in less than 10 minutes.

Potential Stress Moderators

Military social environment characteristics. As noted, military unit morale and social cohesion are positively associated with well-being in stressful environments. The 16-item Walter Reed Army Institute of Research Vertical and Horizontal Cohesion Scale⁵⁷ offers 3 scales that index perceptions regarding officers, noncommissioned officers, and peers. This measure may be useful for identification of persons at risk for negative stress-related outcomes.⁵⁸ The 12-item DRRRI module titled Deployment Social Support³⁴ has a similar focus and may be particularly attractive if other DRRRI modules are being used. Either measure can be completed in less than 10 minutes.

PTSD Screening

Screening for PTSD symptoms. PTSD screening is used in epidemiologic research (eg, to estimate disorder prevalence) and in clinical settings (eg, to identify the need for resources and as a proxy for outcome). The PCL-C⁴⁵ is widely used in both domains and has been applied with both military²⁰ and nonmilitary²⁵ populations. Research has shown that setting, population, and purpose will determine the appropriate score for defining a positive screen. For example, outpatient behavioral or mental health settings have optimum PCL cut scores around 50, in contrast with primary care clinics, for which a score closer to 30 is appropriate. The PCL-C takes 5 to 10 minutes to complete.

PTSD Symptoms and Diagnosis

PTSD symptoms assessed via interview. A semistructured interview conducted by a mental health professional who has received instrument-specific training is the generally accepted standard for assessment of PTSD symptoms and determination of the diagnosis. The CAPS^{59,60} often is characterized as the criterion standard interview for PTSD because it is well validated and widely used. CAPS reflects DSM-IV diagnostic criteria A to D for PTSD, including 17 core symptoms rated on 5-point scales in terms of both frequency (0, never; 4, daily) and intensity (0, no distress; 4, extreme distress). Each CAPS item also allows the interviewer to make a rating to indicate questionable validity when doubts exist about the accuracy of information on which the rating is based. CAPS has an additional 5 items addressing the impact of PTSD symptoms (ie, diagnostic criteria E and F), 3 items for global ratings (ie, validity, severity, improvement), and 5 items addressing associated features of the disorder (eg, guilt).

CAPS frequency and intensity ratings typically are added together to create a severity score for the symptom in question. Several scoring options are available for the CAPS, including summing severity scores across symptoms to generate a total score and determining PTSD diagnosis according to DSM-IV criteria.⁵⁹ A commonly used decision rule is to count a symptom as clinically significant for diagnosis if the frequency is

Table 1: Summary of Measurement Recommendations Across 8 PTSD-Related Domains

Domain	Category	Construct	Measure
Traditional demographics	Core	Sex	Male or female core
	Core	Age	Time since birth
	Core	Race	List of categories
	Core	Ethnicity	Hispanic or non-Hispanic
	Core	Education	Years of attainment
	Core	Resources	Income; SES
Stress and potential trauma	Core	Military service	Branch, rank, etc.
	Core	Combat	CES
	Core	Military events	DRRI modules
	Supplemental	Lifespan events	TLEQ
	Supplemental	Childhood adversity	CTQ; deprivations
	Supplemental	Current stressors	DRRI modules
Stress moderators	Core	Military unit cohesion	COHES
	Supplemental	Military unit cohesion	WRAIR scale or DRRI module
Trauma assessment	Core	Lifespan events	LEC
Screening	Core	DSM-IV definition	PTSD criterion A
	Core	PTSD status	PC-PTSD
Symptoms and diagnosis	Supplemental	PTSD symptoms	PCL-C
	Core	Symptoms: military	PCL-M
	Core	Symptoms: any event	PCL-S
	Supplemental	Symptoms + diagnosis	CAPS (interview)
	Supplemental	Symptoms + diagnosis	PSS-I (interview)
Functioning and disability	Supplemental	Symptoms, etc.	PDS
	Core	Disability	SDS
	Core	Functioning	SF-12/VR-12
	Supplemental	Functioning	SF-36/VR-36
Mental health history	Supplemental	Diagnoses	Current; past
	Supplemental	Treatment	Current; past
	Supplemental	Barriers to care	Stigma, etc.

Abbreviation: COHES, Closely Knit, Cohesive, Interdependent Work Groups; CTQ, Childhood Trauma Questionnaire; WRAIR, Walter Reed Army Institute of Research.

rated at least 1 and duration is rated at least 2. The CAPS requires 45 to 60 minutes to administer.

When time or resources are limited, the PSS-I^{61,62} is a streamlined alternative that addresses the 17 core symptoms of PTSD. While the PSS-I only requires approximately 20 minutes to administer, it accomplishes this by providing less detailed information. Specifically, the PSS-I questions do not call for separate frequency and intensity ratings, and the PSS-I does not include the 13 additional ratings provided by CAPS.

PTSD symptoms assessed via self-report. When clinical interviewing is not an option, the PDS⁶³ is a 49-item self-report measure that assesses both the severity of PTSD symptoms related to an identified traumatic event and probable diagnosis of PTSD. Respondents are asked to rate the severity of each DSM-IV symptom from 0 (not at all or only 1 time) through 3 (5 or more times a week/almost always). The PDS yields a total severity score ranging from 0 through 51 that largely reflects the frequency of the 17 symptoms of PTSD. A PDS Profile Report also provides a preliminary determination of PTSD diagnostic status, a count of the number of symptoms endorsed, a rating of symptom severity, and a rating of the level of impairment of functioning. The PDS shows high sensitivity and specificity compared with the Structured Clinical Interview for DSM-IV.⁶⁴ The PDS can be completed in 15 minutes.

Functioning and Disability

Functioning, limitations, and well-being. The SF-36 (<http://www.sf-36.org>)^{50,51} and VR-36³⁸ questionnaires are recommended over the 12-item versions whenever feasible

because the longer format has a more extensive evidence base. For example, the VR-36 has been used in large-scale VA studies that provide norms for a segment of the postmilitary population (see references^{20,65,66}). The 36-item versions can be completed in 10 minutes. As with the SF-12, raw SF-36 scores can be transformed into a preference-weighted health status metric for cost-effectiveness analysis.^{67,68}

Table 1 provides an overview of the measurement domains and recommendations for both core and supplemental measures.

EMERGING DATA ELEMENTS

The PTSD Work Group was asked to evaluate a case definition for PTSD that had been developed for surveillance purposes (ie, based on administrative data sources) by a separate effort in September 2008. The definition was formulated by the Interagency Psychological Health/Traumatic Brain Injury Standardization Committee, an ad hoc group that had been convened by the Defense Centers of Excellence for Psychological Health and Brain Injury.¹ The current aim was to align recommendations for surveillance with other PTSD-related measurements.

The PTSD Work Group discussed the purposes of surveillance and noted the similarity between the proposed definition and the one used by the VA to extract information about PTSD cases from medical administrative records. The proposed definition was endorsed as a reasonable standard, with the understanding that (1) it gives priority to sensitivity over specificity (ie, is likely to overestimate PTSD rates relative to formal,

interview-based diagnosis) and (2) the nature of available information and the purpose for which surveillance is undertaken may dictate that other definitions are better suited for particular circumstances. A recent publication by Frayne et al⁶⁹ provides information and guidance that may be relevant to defining and evaluating an index.

An edited version of the committee surveillance definition and associated caveats follows.

A case of PTSD shall be defined on the basis of either:

- A. a data field with PTSD (ICD-9 code 309.81), in any diagnostic position, for 2 separate outpatient encounters that occurred at least 1 day apart, **or**
- B. a data field with PTSD (ICD-9 code 309.81), in any diagnostic position, at discharge from a single inpatient admission.

Caveats:

1. It should be noted that this definition does not address the source of or method for diagnosis. For this reason, it is not suitable for clinical use and is intended only for surveillance and possibly research purposes.
2. This definition is intended to describe diagnosed cases of PTSD exclusively among treatment-seeking persons. It should not be used as the basis for estimating broader prevalence of PTSD, for example, among postdeployed military service personnel.

FUTURE ISSUES AND NEEDS

PTSD Work Group discussion identified positive adaptation to stress and trauma as an additional topic that may warrant measurement recommendations in the future. This domain is often addressed by constructs such as resilience and reintegration in the military context, and by life satisfaction and general well-being elsewhere. Positive adaptation can be a relevant outcome for anyone, but it offers a potentially meaningful focus for well functioning respondents who may find little to endorse on typical measures that emphasize psychopathology.

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