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Quality of Care for PTSD and Depression in the Military Health System

Appendixes

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Published by the RAND Corporation, Santa Monica, Calif.

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APPENDIX A

Technical Specifications for Quality Measures for PTSD

This appendix provides technical specifications for the implementation of the PTSD quality measures based on administrative data and/or medical record review described in the body of the report. It is divided into the following sections:

1. *Diagnostic Cohort, Medical Record, and Symptom Questionnaire Samples*: This section describes the eligibility criteria for inclusion used to place service members in the PTSD cohort and the rules used to select the medical record review sample. This cohort formed the population whose care was evaluated during the 12 months after entry into the diagnostic cohort. The entire cohort was eligible for quality measures based on administrative data. For the medical record-based measures, the eligible population was limited to those in the cohort who received all of their care at MTFs. This limitation was required as the only medical record documentation that was accessible for the study was that documenting direct care. Based on the nature of the medical record-based quality measures, the source of data for these measures was limited to outpatient direct care.
2. *Key Definitions*: This section describes the technical specifications for key definitions that are frequently referenced throughout this document. These definitions include clarifying notes where applicable.
3. *Quality Measures for PTSD*: These sections describe the technical specifications for each PTSD quality measure, including the following:
    a. Measure Summary—measure statement, numerator, denominator, measure type (e.g., process, outcome), and care setting (e.g., outpatient).
    b. Numerator Specifications—definitions of variables used in the numerator and relevant data sources.
    c. Denominator Specifications—definitions of variables used in the denominator, relevant data sources, and denominator exclusions, if applicable.
    d. Measure Background—source of the measure, any adaptation to the measure that was made by the project team in implementation, clinical practice guideline support for the measure, existing research evidence behind the measure, and feasibility of measure implementation.

The study population included service members only and excluded their spouses and other dependents, retirees, and their dependents. The rules applied for ensuring that patients in the cohort were engaged in care with the MHS matched those applied in the VA Mental Health Evaluation. The application of these rules defining engagement was used to demonstrate a minimum level of interaction by the service member with the MHS as a care provider.

The cohort diagnostic-code requirement of just one code-specific encounter was chosen to create the broadest population of patients with PTSD. Cohort-inclusion in the VA evaluation was based on the study diagnosis with the most encounters (out of five possible study diagnoses) during the measurement period and was limited to one study diagnosis of interest, unlike this study where a patient may have been included in both PTSD and depression cohorts.

The data sources used in this study are shown in Table A.1.

While four of these data sets are distinguished as outpatient/inpatient and provider/facility, they may all apply to the same date(s) of service. The interpretation of crossover of data lines of service within these data sets was challenging. Also, variables distinguishing characteristics of care provided (e.g., place of service, provider specialty) vary greatly among the data sets both in content and level of detail. These inconsis-

Table A.1
Content of Data Sources for Direct Care and Purchased Care

Content	Data Source
Outpatient services delivered within MTFs (direct care)	Comprehensive Ambulatory Professional Encounter Record (CAPER)
Inpatient services delivered within MTFs (direct care)	Standard Inpatient Data Record (SIDR)
Provider services delivered outside of MTFs (purchased care)	TRICARE Encounter Data–Non-Institutional (TED-NI)
Facility services delivered outside of MTFs (purchased care)	TRICARE Encounter Data–Institutional (TED-I)
TRICARE eligibility and enrollment	VM6 Beneficiary Level
TRICARE eligibility/active-duty status	Active-Duty Master File
Dispensed medication	Pharmacy Data Transaction Services (PDTS)
Service characteristics	Defense Manpower Data Center (DMDC)
Deployment history	Contingency Tracking System–Deployments
Medical record of outpatient care delivered within MTFs (direct care)	Armed Forces Health Longitudinal Technology Application (AHLTA)
Patient symptom questionnaire data (direct care)	Behavioral Health Data Portal (BHDP)

tencies presented challenges to classifying and describing care across these data sets. Specific rules were developed to categorize administrative data in as standardized a manner as possible across all sources of administrative data sets. The rules dealt with issues such as identifying providers of similar specialty, handling of same-day encounters to multiple providers, and classifying care by place of service. See the Appendix of the Phase I report (Hepner et al., 2016) for a summary of the rules applied to these data and the rationale behind them.

The PDTS was used to evaluate all pharmacologic care provided during the measurement period. The PDTS database used included a scrambled Social Security number (SSN) of the plan sponsor. It was assumed that the vast majority of the sponsors were the active component members, but relationship to the sponsor was not an included variable in the dataset. To address this problem, cross checks between PDTS and VMB Beneficiary files were made of member age and gender. Cases that were not matches were deleted from the PDTS database.

Nurse abstractors used AHLTA to review the clinical notes of direct outpatient care provided during the measurement period. These data supplemented the administrative data and were the source of data for the hybrid quality measures that utilized both administrative and medical record data. These hybrid measures were applied to a sample of service members within the cohort that received only direct care during the measurement period. Because the medical record review (MRR) focused on direct care only, technical specifications for the medical record measures presented here are limited to defining the application in direct care and do not include specifications for applying those measures to purchased care. A medical record abstraction tool was created to collect and enter data from the medical records of the direct care MRR sample.

Symptom questionnaire data, including the PTSD Checklist (PCL), were retrieved from the Behavioral Health Data Portal (BHDP) system. PCL scores were used to construct three PTSD quality measures. A limitation of this data source during the study period was that it was at that time utilized primarily by the Army. Therefore, denominators for these measures were limited to direct outpatient care provided by the Army.

Diagnostic Cohort, Medical Record, and Symptom Questionnaire Samples

The following are the criteria applied for service member inclusion into the PTSD diagnostic cohort and medical record review sample for this study.

Eligibility for cohort inclusion: Active-component service members were eligible for inclusion in the PTSD cohort. These individuals were most likely enrolled in TRICARE Prime, Standard, or Extra. Active component spouses and dependents and all retirees and dependents were ineligible. Eligibility was calculated based on all care received (i.e., direct care and/or purchased care). Service members needed to be present

in the Active Duty Master File (which was current through September 2012 for Phase I and September 2013 for Phase II) for inclusion.[1]

PTSD cohort: Inclusion in the PTSD cohort required a condition-related diagnosis during the observation period and a minimal level of engagement during that time with TRICARE-provided care for any health reason.

Condition-related diagnosis: During the six-month period from January 1, 2012, through June 30, 2012, for Phase I, and from January 1, 2013, through June 30, 2013, for Phase II, active-component members were identified who had a PTSD diagnosis occurring in at least one TRICARE-provided inpatient episode or one TRICARE-provided outpatient encounter. The first diagnosis of PTSD during the six-month period was identified using the ICD-9-CM code (primary or secondary) listed in Table A.2 associated with any TRICARE encounter. The date of the first PTSD diagnosis defined the start date of the 12-month measurement period during which care for PTSD was observed. One PTSD encounter was required for cohort entry. We chose to require one encounter to be more inclusive, but acknowledge that we may have included patients whose PTSD diagnoses were not confirmed. On the other hand, one encounter meant that we would also not have excluded those patients with a valid diagnosis who may not have received indicated follow-up care.

Engaged with and eligible for MHS care: Patients selected for the cohort also had to have at least one TRICARE-provided inpatient episode or two outpatient encounters *for any reason* during the 12-month measurement period starting with the first qualifying diagnosis of PTSD, and during that same 12-month measurement period, did not have two or more consecutive months of TRICARE ineligibility based on the VM6 Beneficiary Level files.

Exclusions: Measure denominator exclusions, if any, were made on a measure-by-measure basis (e.g., in hospice treatment, resident of long-term care facility) as indicated for the measure, and these are specified in each measure's technical specifications. In all cases, we strove to follow the technical specifications as indicated by the measure's source. In general, denominator exclusions for inpatient admissions were allowed when the window of time for the recommended outpatient care was short (e.g., 30 days) or the measure assessed a minimum amount of care within a relatively short

Table A.2
Qualifying ICD-9-CM Codes for PTSD Cohort Inclusion

ICD-9-CM Code	Description
309.81	Posttraumatic stress disorder

[1] Active component service members are eligible to receive care at MTFs or through the TRICARE network through TRICARE Prime. A check of both the eligibility and enrollment files occasionally showed unexpected gaps in coverage, so we used the Defense Manpower Data Center's (DMDC's) Active-Duty Master File to verify that the service member was still serving on active duty.

time (e.g., four psychotherapy visits or two E&M visits within eight weeks). This exclusion was based on the assumption that the admission might have interfered with the ability to access the outpatient care. Patients were excluded from a measure denominator if the time remaining in the study period after requirements for measure eligibility were met was less than the specified time period allowed for the provision of the care being evaluated.

Comorbidity: If an active-component member was included in both the PTSD and depression cohorts, applicable administrative data quality measures for both conditions were applied. Medical record-based measures, on the other hand, were applied only for the condition cohort the patient was sampled for in the medical record review.

MRR Sample: The study population for the MRR was service members in the Army, Air Force, Marine Corps, and Navy[2] who only received MHS care directly through military treatment facilities (e.g., direct care only) for PTSD. We drew a stratified sample of 400 service members from the PTSD cohort. We stratified based on whether service members had a new treatment episode (NTE) on Day 1 of cohort entry versus not having a NTE during the study period, branch, region, and whether service members were in both the PTSD and depression cohorts. We oversampled service members with NTEs starting on Day 1 of cohort entry so that 60 percent of the sample would include individuals with NTEs to increase the sample size available for estimating prevalence of NTE-based measures. Some quality measures require an observation period of up to six months (e.g., functional status, symptom response/remission). To maximize the number of NTEs with sufficiently long observation periods, we removed from the MRR study population individuals having an NTE after Day 1 of cohort entry. [3]

To yield two distinct MRR samples for PTSD and depression, we randomly split the cohort-overlap sample (n = 1,616) to assign these service members either to PTSD (70 percent) or depression (30 percent). More service members are sampled for the PTSD cohort since a larger proportion of the PTSD cohort is in the overlap (32 percent) than in the depression cohort (13 percent).

Sampling weights for estimating the measure scores for the NTE and all-cohort measures were applied to account for the stratified sampling plan. The weights were developed to match population totals based on having an NTE, branch, and belonging to both the PTSD and depression cohorts. See Appendix C for details of the MRR sampling process.

Symptom Questionnaire Sample: Symptom scores for behavioral health (BH) conditions, which are based on questionnaires such as the PCL for PTSD and the Patient Health Questionnaire-9 (PHQ-9) for depression, are available from a dedicated data collection system within MHS. The system, known as the BHDP, has been in

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[2] Coast Guard service members and those with missing region are excluded from the sampled population.

[3] Those with an NTE after Day 1 of cohort entry were 1 to 4 percent of the total cohort population.

operation since May 2012 in all of Army's behavioral health clinics. Implementation of the BHDP throughout the MHS is in different stages of development and implementation, but the system is separate from the electronic health record. The symptom questionnaire data collected through the BHDP offer a way to track clinical outcomes of treatment for PH conditions provided by providers at MTFs. Although separate from the medical record, the BHDP system offers an efficient method of patients completing the questionnaires online and providing feedback to providers immediately for use during patient encounters minutes later. Symptom data are captured in structured fields, making the data easily accessible. Despite these advantages, limitations include the need for providers to manually enter the data into the medical record, the fact that use at the time of data collection may not have been consistent among providers, and access to the system was not yet universal across services and specialties. Also, the analysis of observational data sources such as the symptom questionnaire data should be adjusted for differences in severity across groups. Standard risk adjustment approaches such as covariate adjustment in regression are limited to adjusting for known patient characteristics, such as demographics and baseline symptoms scores, but unobserved or unrecorded differences are not accounted.

Table A.3
Key Definitions

Variable	Definition	Questions/ Notes
New treatment episode (NTE): PTSD	The NTE for PTSD applies to patients in the PTSD cohort and is defined as:	
	An outpatient visit with a primary diagnosis of PTSD (Table A.2) AND No outpatient visits in the prior six months for PTSD (primary or secondary diagnosis) from CAPER and TED-NI AND No treatment with an antidepressant, antipsychotic, or prazosin in the prior six months based on the PDTS, AHLTA AND No admission or transfer to an inpatient or residential bed from SIDR or, TED-I in the prior six months with a diagnosis (primary or secondary) of PTSD (Table D.2) and when the PTSD diagnosis is not primary, a primary psychiatric diagnosis (ICD-9 codes: 290.xx–319.xx).	"Outpatient visit" does not include telephone/email encounters

Table A.3—Continued

Variable	Definition	Questions/ Notes
NTE: PTSD	The first visit after the clean period in which PTSD is the primary diagnosis indicates the start date for the new treatment episode. In the MRR, if an abstractor could not distinguish primary from secondary diagnoses, the requirement was just that the code from Table A.2 or the diagnosis was associated with the encounter. The inclusion of the required PTSD-related medication "clean period" prior to the NTE was designed to create a higher degree of certainty that the case identified was a true NTE. While some PTSD medications are used for unrelated reasons, it was not possible to identify which cases with medication treatment in the prior six months represented treatment for PTSD and which did not. The care of NTEs evaluated in this report is limited to those diagnosed in an outpatient setting since the selected quality measures focus on outpatient care. Patients whose NTEs were initiated by an inpatient stay are not included in the denominators of measures focusing on NTE care. If a patient had more than one PTSD NTE during the measurement period, performance of care was only evaluated for the first NTE.	
Anti-depressant treatment	Treatment with (dispensing of) a drug listed in the PDTS of Therapeutic Class THERCLSS 281604 (antidepressants) OR Product Name PRODNAME Savella. For medical record review, abstractors were provided a list of antidepressants (brand and generic names).	Product Name is used for drugs not consistently identified via the Therapeutic Class
Antipsychotic treatment	Treatment with (dispensing of) a drug listed in the PDTS of therapeutic class (THERCLSS) 281608 (antipsychotics) OR Product Name (PRODNAME) perphenazine-amitryptyline, Symbyax, olanzapine + fluoxetine, prochlorperazine edisylate, or prochlorperazine maleate. For MRR, abstractors were provided a list of antipsychotics (brand and generic names).	Product Name is used for drugs not consistently identified via the Therapeutic Class
Prazosin treatment	Treatment with (dispensing of) a drug listed in the PDTS using Product Name (PRODNAME) prazosin, Minipress, Minipress XL, Vasoflex, Pressin, or Hypovase. For MRR, abstractors were provided a list of prozasin and equivalent generics.	

Table A.3—Continued

Variable	Definition	Questions/ Notes
Outpatient psycho-therapy	Any study diagnosis-related (primary or secondary diagnosis for PTSD from Table A.2) outpatient clinic encounters from CAPER or TED-I for which the following CPT codes are present: Pre-2013: • 90804, 90805, 90806, 90807, 90808, 90809 Office or other outpatient facility, insight oriented, behavior modifying and/or supportive psychotherapy: Face-to-face with patient, with or without Evaluation and Management (E&M) services, 20–80 minutes duration • 90810, 90811, 90812, 90813, 90814, 90815 Office or other outpatient facility, interactive psychotherapy: Using play equipment, physical devices, language interpreter, or other mechanisms of nonverbal communication, with or without E&M services, 20–80 minutes duration • 90816, 90817, 90818, 90819, 90821, 90822 Inpatient hospital, partial hospital or residential treatment facility: Face-to-face with patient, with or without E&M services, 20–80 minutes duration • 90823, 90824, 90826, 90827, 90828, 90829 Inpatient hospital, partial hospital or residential treatment facility, interactive psychotherapy: Using play equipment, physical devices, language interpreter, or other mechanisms of non-verbal communication, with or without E&M services, 20–80 minutes duration • 90845 Psychoanalysis • 90853 Group psychotherapy (other than of a multiple-family group) • 90857 Interactive group psychotherapy	CPT codes for psychiatric services changed significantly in 2013 Inpatient codes included for partial hospitalization setting

Table A.3—Continued

Variable	Definition	Questions/ Notes
Outpatient psycho-therapy	2013 forward: • +90785, 90832, +90833, 90834, +90836, 90837, +90838 Psychotherapy, with patient and/or family member: With or without E&M services, 16–53+ minutes duration. • 90839, +90840 Psychotherapy for crisis: First 60 minutes with additional 30-minute add-on code (+90840) • 90845 Psychoanalysis • 90853 Group psychotherapy (other than of a multiple family group) Psychotherapy sessions of less than 30 minutes duration are included in this definition. While sessions of this duration were not very frequently utilized, these sessions may extend to up to 37 minutes in the 2013 coding rules and therefore, may be significant in terms of a therapeutic treatment session.	"+" = add-on code. In 2013, interactive complexity is an add-on code (+90785) and codes are no longer site-specific.
Outpatient E&M visit	Diagnosis-related (primary or secondary diagnosis from Table A.2 for PTSD) E&M visit from CAPER or TED-NI. E&M visit codes are used by qualified health care professionals who can prescribe medication. The E&M visit is used to approximate and include a medication management visit; although E&M visits are likely to overestimate actual medication management visits. An E&M visit is defined as any diagnosis-related encounter for which one of the following CPT codes is present: • 90805, 90807, 90809, 90811, 90813, 90815 90817, 90819, 90822,90824, 90827, 90829 Office or other outpatient or inpatient facility: Individual psychotherapy with medical evaluation and management services, duration 20–80 minutes duration • 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215 Office or other outpatient services: E&M services • 99241, 99242, 99243, 99244, 99245 Office or other outpatient consultations	Inpatient codes included for partial hospitalization setting

Table A.3—Continued

Variable	Definition	Questions/ Notes
	• 90862 Pharmacological management, including prescription use, and review of medication with no more than minimal medical psychotherapy	Code 90862 discontinued in 2013
	• +90863 Pharmacological management, including prescription and review of medication, when performed with psychotherapy services (for those providers who cannot report E&M codes).	New code in 2013. Not for use by physicians or other qualified health care professionals
Inpatient stays	The primary sources of administrative data for inpatient stays were SIDR (direct care) and TED-I (purchased facility services). See Phase I report for the rules used to identify inpatient care (acute and non-acute) from these data.	
Outpatient visits	The primary sources of administrative data for outpatient visits were CAPER (direct care) and TED-NI (purchased provider services). See Phase I report for the rules used to identify outpatient care from these data. The source of medical record data for outpatient direct care was AHLTA.	

Table A.4
PTSD-A1: Baseline Symptom Assessment with PCL

MEASURE SUMMARY		
Measure statement	Percentage of PTSD patients in a new treatment episode with assessment of symptoms with PCL	
Numerator	Patients in the denominator who have an assessment of PTSD symptoms within the first 30 days of a new treatment episode	
Denominator	Patients with PTSD in a new treatment episode	
Measure type	Process	
Care setting	Outpatient	
NUMERATOR SPECIFICATIONS		**Data Source**
PCL	The PCL is a 17-item self-report measure of symptoms of PTSD (Blanchard et al., 1996). Slight variants of the scale exist, all of which are scored identically. The PCL-C is the general version (civilian), and scale items refer to a "stressful experience from the past." The PCL-M is the military version, and items refer to a "stressful military experience." The PCL-S (PCL—Specific) limits responses to one particular stressful event by requiring the respondent to nominate a single stressful event; subsequent items refer to "the stressful experience." A newer version of this tool, the PCL-5 is based on DSM-V criteria for PTSD. (Weathers et al., 2013) Assessment with the PCL was required at the same visit or within 30 days prior or 30 days after the date of the PTSD NTE and in the outpatient setting. Assessments of symptom severity that did not include the full PCL were not acceptable for this measure.	AHLTA
DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with PTSD	See Table A.3.	CAPER, SIDR
NTE	See New Treatment Episode – PTSD in Key Definitions. The NTE was defined from administrative data. Abstractors confirmed the NTE and NTE date based on information in the medical record. A correction to the NTE date was allowed by the abstractor, if applicable. NTEs were limited to those cases diagnosed in the outpatient setting.	CAPER, SIDR, PDTS, AHLTA
Exclusions	None	
MEASURE BACKGROUND		
Measure source	Adapted from the following: Farmer, Carrie M., Katherine E. Watkins, Brad Smith, Susan M. Paddock, Abigail Woodroffe, Jacob Solomon, Melony E. Sorbero, Kimberly A. Hepner, Lanna Forrest, Lisa R. Shugarman, Cathy Call, and Harold A. Pincus, *Program Evaluation of VHA Mental Health Services: Medical Record Review Report*, Alexandria, Va.: Altarum Institute and RAND–University of Pittsburgh Health Institute, 2010.	

Table A.4—Continued

Rationale for measure inclusion	**Source/Adaptation** This measure was adapted from the VHA Mental Health Program Evaluation (Farmer et al., 2010; Watkins et al., 2011). What constitutes a break in care in defining an NTE was changed from five months to six months to match the time frame that is more generally used. NTEs were limited to those cases diagnosed in the outpatient setting. Although that evaluation accepted using any one of many standardized tools and structured interviews for this assessment, we recommend the use of the PCL to establish an objective, baseline score. This score becomes an essential part of the clinical data that will be used to monitor the patient's response to treatment over time. Because of the popularity of the PCL, it is recommended as the standardized tool to be utilized with this measure. **Guideline Support** Measurement of PTSD symptoms at the start of care using a standardized instrument allows clinicians to track treatment response quantitatively and, when necessary because of treatment nonresponse, to adjust the treatment plan. In order to make a determination of symptom improvement (or nonresponse) at a future time point, a baseline assessment of symptoms is necessary. Fontana and Rosenheck (1994) have recommended that any symptom-tracking instrument assess PTSD symptoms across multiple domains of functioning. Full coverage of symptoms and types of functional impairment may improve the sensitivity of the instrument to treatment response. Indeed, Greenberg, Rosenheck, and Fontana (2003) showed that the assessment of PTSD symptoms using one of two standardized scales was related to treatment outcomes. The VA/DoD CPGs (VA and DoD, 2010b) cite evidence supporting thorough assessment of PTSD symptoms for patients in both primary and mental health specialty care settings (Lagomasino, Daly and Stoudemire, 1999; Williams and Shepherd, 2000) but do not specifically recommend that a standardized assessment instrument be used in all cases. However, the VHA Mental Health Program Evaluation Consultation Group has recommended that standardized PTSD symptom-assessment instruments be used consistently across all VHA care services for patients with PTSD. The consultation group noted that medical record chart data are unreliable for tracking PTSD symptoms and outcomes and therefore recommended that a quality indicator measuring the assessment of PTSD with a standardized instrument be developed. This measure, developed by RAND researchers for the VHA, was a response to that call (Farmer et al., 2010). **Research Evidence** We recommend that the PCL (Blanchard et al., 1996) be the standardized measurement tool for this purpose for a variety of reasons. First, the PCL has been validated with active-duty service members (Bliese et al., 2008). Importantly, the psychometric properties of the PCL are strong, with good internal consistency (α = 0.94–0.97) and reliable scale scores across short test-retest periods ($\rho = 0.88$–0.96) (Blanchard et al., 1996; Ruggiero et al., 2003; Weathers et al., 1993). Note that long-measurement-period reliability is neither expected nor desirable for a measure designed to be sensitive to symptom change over time. In fact, to the contrary, it is important that measures employed for this purpose are sensitive to symptom change in response to treatment—a criterion passed by the PCL (Monson et al., 2008). Validity of the PCL as an indicator of DSM-IV diagnosis and symptom strength is strong, with the PCL being nearly collinear ($\rho = 0.93$) with the Clinician-Administered PTSD Scale (CAPS), the gold-standard measure for psychiatric diagnosis (Blanchard et al., 1996). Moreover, there is good convergent validity with other validated measures of PTSD ($\rho = 0.77$–0.93) (Blanchard et al., 1996; Weathers et al., 1993). Of note is the fact that the diagnostic criteria for PTSD were updated in the 2013 revision of *Diagnostic and Statistical Manual of Mental Disorders*, 5th ed. (DSM-V) (American Psychiatric Association, 2013). A revised version of the PCL (PCL-5) reflects these changes (Weathers et al., 2013). It will be important to track the use of this instrument and the need to update items or scoring protocols.
Feasibility	The denominator for this measure (new treatment episodes of PTSD) was derived from administrative claims data and validated with medical record review. The determination of the assessment of PTSD symptoms using the PCL was, but could also have been retrieved from the BHDP.

Table A.5
PTSD-A2: Assessment for Depression

MEASURE SUMMARY		
Measure statement	Percentage of PTSD patients in a new treatment episode assessed for depression	
Numerator	Patients in the denominator who are assessed for comorbid depression within 30 days of the new treatment episode	
Denominator	Patients with PTSD in a new treatment episode	
Measure type	Process	
Care setting	Outpatient	
NUMERATOR SPECIFICATIONS		**Data Source**
Assessed for depression	Any documentation of the presence or absence of depression (including a depression diagnosis) or any assessment of mood, either by formal assessment (standardized tool) or by interview that was completed at the same visit or in the 30 days prior or 30 days after the initiation of the NTE. Standardized tools for screening and assessment include (but are not limited to) the following: • BDI-II Beck, Steer and Carbin, 1988) • CESD (five-, ten-, or 20-item version) (Radloff, 1977) • HRSD (Hamilton, 1960; Hamilton, 1967; Radloff, 1977) • IDS-SR_{30} (Rush et al., 1996) • MADRS (Montgomery and Asberg, 1979) • MOSDQ (Burnam et al., 1988) • PHQ-2 (Kroenke, Spitzer and Williams, 2003) • PHQ-9 (Spitzer, Kroenke and Williams, 1999) • QIDS-SR_{16} (Rush et al., 2003) • SSDS (Barney et al., 2010) • SCID MDD module (First et al., 1996). Informal assessment includes documentation of the presence or absence of depressive symptoms (e.g., sad mood, suicidal thoughts, hopelessness).	AHLTA
DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with PTSD	See Table A.3.	CAPER, SIDR
NTE	See New Treatment Episode – PTSD in Key Definitions. The NTE was defined from administrative data. Abstractors confirmed the NTE and NTE date based on information in the medical record. A correction to the NTE date by the abstractor was allowed, if applicable. NTEs were limited to those cases diagnosed in the outpatient setting.	CAPER, SIDR, PDTS, AHLTA
Exclusions	None	

Table A.5—Continued

MEASURE BACKGROUND	
Measure source	Adapted from the following: Farmer, Carrie M., Katherine E. Watkins, Brad Smith, Susan M. Paddock, Abigail Woodroffe, Jacob Solomon, Melony E. Sorbero, Kimberly A. Hepner, Lanna Forrest, Lisa R. Shugarman, Cathy Call, and Harold A. Pincus, *Program Evaluation of VHA Mental Health Services: Medical Record Review Report*, Alexandria, Va.: Altarum Institute and RAND–University of Pittsburgh Health Institute, 2010.
Rationale for measure inclusion	**Source/Adaptation** This measure was adapted from the VHA Mental Health Program Evaluation (Farmer et al., 2010; Watkins et al., 2011). What constitutes a break in care in defining an NTE was changed from five months to six months to match the time frame that is more generally used. NTEs were limited to those cases diagnosed in the outpatient setting. **Guideline Support** Although the VA/DoD guidelines recommend assessing a range of psychiatric comorbidities (VA and DoD, 2010b) this indicator has been developed to address only depression. Depression is the most prevalent psychiatric comorbidity found in populations with PTSD, and standardized instruments for assessing depression are available to facilitate reliable and valid assessments (Gahm and Lucenko, 2008; IOM, 2012). Research Evidence There is considerable comorbidity between PTSD and MDD (Erickson et al., 2001; O'Donnell et al., 2008; Perlman et al., 2011). A 2008 study found that, among service members with probable PTSD, two-thirds also screened positive for depression (Schell and Marshall, 2008). According to *VA/DoD Clinical Practice Guideline for Management of Post-Traumatic Stress*, "co-morbid medical and psychiatric conditions are important to recognize, because they can modify clinical determinations of prognosis, patient or provider treatment priorities, selection of interventions, and the setting where PTSD care will be provided" (VA and DoD, 2010b).
Feasibility	The denominator for this measure was PTSD patients (MRR sample) in a new treatment episode at the time of cohort entry as determined by administrative data and validated with medical record review. The determination of the assessment for depression was collected from the medical record, but could also have been retrieved from the BHDP for PHQ-9 results. Other screening tools and informal assessments would only be accessible from the medical record.

Table A.6
PTSD-A3: Assessment for Suicide Risk

MEASURE SUMMARY		
Measure statement	Percentage of PTSD patients in a new treatment episode assessed for suicide risk	
Numerator	Patients in the denominator who are assessed for current suicide risk during the same visit in which a new treatment episode began	
Denominator	Patients with PTSD in a new treatment episode:	
Measure type	Process	
Care setting	Outpatient	
NUMERATOR SPECIFICATIONS		**Data Source**
Assessed for suicide risk	This assessment must be completed during the same visit in which the NTE began. Suicide risk assessment must include questions about the following: • suicidal ideation (SI) • patient's intent to initiate a suicide attempt or suicidal behavior *and*, if either is present (for patients not hospitalized) • patient's plans for a suicide attempt • whether the patient has access to the means for completing suicide	AHLTA
Suicidal ideation (SI)	SI includes any reference to the patient not wanting to live anymore, comments about killing oneself or doing oneself serious harm, passing thoughts of death, or similar thoughts. Absence of SI is documentation of specific denial of SI (e.g., "no suicidal thoughts," "denies SI"). Using the PHQ-9, which includes an item assessing SI, would count for assessment of SI, but a PHQ of fewer items (e.g., PHQ-2, PHQ-8) would not.	AHLTA
Suicidal intent	Suicidal intent is any indication of imminent threat of suicide, patient has a specific plan for hurting or killing him/herself (e.g., location, how, when) or indication about chosen means to self-harm or suicide or access to lethal means (e.g., pills, firearms).	AHLTA
Suicidal behavior	Suicidal behavior is characterized by an unsuccessful attempt to kill oneself. If an attempted suicide involves a suicidal action unlikely to have any potential of being fatal (e.g., ingesting six Tylenol tablets), it is called a suicidal gesture.	AHLTA
Suicide plan	Any indication that the patient has determined or has been thinking about exactly how to complete the suicide	AHLTA
Access to means	Patient has access to the means that the patient would use or might use to complete the suicide	AHLTA

Table A.6—Continued

DENOMINATOR SPECIFICATIONS		Data Source
Patients with PTSD	See Table A.3.	CAPER, SIDR
NTE	See New Treatment Episode – PTSD in Key Definitions. The NTE was defined from administrative data. Abstractors confirmed the NTE and NTE date based on information in the medical record. A correction to the NTE date was allowed by the abstractor, if applicable. NTEs were limited to those cases diagnosed in the outpatient setting.	CAPER, SIDR, PDTS, AHLTA
Exclusions	None	
MEASURE BACKGROUND		
Measure source	Adapted from the following: Farmer, Carrie M., Katherine E. Watkins, Brad Smith, Susan M. Paddock, Abigail Woodroffe, Jacob Solomon, Melony E. Sorbero, Kimberly A. Hepner, Lanna Forrest, Lisa R. Shugarman, Cathy Call, and Harold A. Pincus, *Program Evaluation of VHA Mental Health Services: Medical Record Review Report*, Alexandria, Va.: Altarum Institute and RAND–University of Pittsburgh Health Institute, 2010. National Quality Forum, "NQF #0104 Adult Major Depressive Disorder: Suicide Risk Assessment," last updated February 27, 2014. As of March 18, 2015: http://www.qualityforum.org/QPS/0104	
Rationale for measure Inclusion	**Source/Adaptation** This measure is based on the NQF-endorsed measure 0104, which recommends screening for suicide risk among patients with new treatment episodes of MDD (National Quality Forum, 2013). The NQF measure has been expanded to be applied to patients with new treatment episodes for PTSD, which is consistent with *VA/DoD Clinical Practice Guideline for Assessment and Management of Patients at Risk for Suicide*, as well as VA/DoD guidelines for the treatment of substance use disorders, PTSD, MDD, and psychosis (VA and DoD, 2009a; VA and DoD, 2009b; VA and DoD, 2010a; VA and DoD, 2013). The measure used in the VHA Mental Health Program Evaluation (Farmer et al., 2010; Watkins et al., 2011) looked for an annual assessment of SI, whereas this measure looks for a suicide risk assessment at the time of a new treatment episode.	

Table A.6—Continued

Rationale for measure Inclusion	**Guideline Support** Assessing SI is a routine part of the mental status exam conducted in psychiatry, and the American Psychiatric Association recommends that it be used as part of standard practice (American Psychiatric Association, 2006). This measure's required components for a suicide risk assessment (ideation, intent, plans, and means) is consistent with recommendations in *VA/DoD Clinical Practice Guideline for Assessment and Management of Patients at Risk for Suicide* (VA and DoD, 2013). **Research Evidence** Given the increased risk of attempted and completed suicide associated with most psychiatric conditions (Cavanagh et al., 2003; Kelly and Mann, 1996), it is important for providers to assess SI among new or returning patients and, when present, to implement a safety plan and begin quality mental health services (Ramchand et al., 2011). Case-control studies show that one-half to three-quarters of all suicides can be attributed to psychiatric disorders, typically mood and anxiety disorders (Cavanagh et al., 2003). MDD, the most strongly related disorder, increases the risk for death by suicide by 20 times relative to the general population (Cavanagh et al., 2003; Harris and Barraclough, 1997). Among anxiety disorders, PTSD is the most tightly linked with SI (Kessler, Borges and Walters, 1999; Sareen et al., 2005). The demographic profile of active-duty service members (younger and more likely to be male than the civilian population) also matches the demographic risk factors for completed suicide (Goldsmith et al., 2002; McKeown, Cuffe and Schulz, 2006). For these reasons, it is important that all patients with new treatment episodes for psychological health conditions be assessed for suicidal risk.
Feasibility	The denominator for this measure was PTSD patients (MRR sample) in a new treatment episode at the time of cohort entry as determined by administrative data and validated by medical record review. The numerator requires the medical record data to have access to additional assessment data for patients with positive screens (assessment for presence/absence of a plan, restriction of lethal means discussion).

Table A.7
PTSD-A4: Assessment of Recent Substance Use

MEASURE SUMMARY	
Measure statement	Percentage of PTSD patients in a new treatment episode assessed for substance use
Numerator	Patients in the denominator who have an assessment of recent substance use, including type, quantity, and frequency within the first 30 days of a new treatment episode
Denominator	Patients with PTSD in a new treatment episode
Measure type	Process
Care setting	Outpatient

Table A.7—Continued

NUMERATOR SPECIFICATIONS		Data Source
Assessed for recent substance use	This assessment must be completed during the same visit or within the 30 days prior or 30 days after the visit in which the NTE began. Documentation of no alcohol and/or no recent drug use **or** documentation of recent alcohol use, including quantity and frequency **or** recent drug use, including type and frequency. An appropriate screening tool may be used. • Type (for drug use only): An assessment of alcohol, marijuana, cocaine, heroin or other opiates, amphetamine or methamphetamine, or note indicating that the patient denied all other substance use • Quantity (for alcohol use only): Any evidence of a quantity assessment, including number of drinks per day, number of drinks per week, any note about binge drinking (at least five drinks in one drinking episode for men, at least four drinks in one drinking episode for women) • Frequency: Note about daily, monthly, weekly, or occasional use. Standardized tools for **alcohol use** include (but are not limited to) the following: • AUDIT (10 items, score 0–40) • AUDIT-PC (5 items, score 0–20) • AUDIT-C (3 items, score 0–12) • FAST (4 items, score 0–6) • Single-Item Alcohol Screening Questionnaire (SASQ) (asked of those who sometimes drink): *In the last 12 months how many times have you had 5 or more [if male]/4 or more [if female] drinks in a day?* • ASSIST (screen for alcohol, tobacco, and substance) • Do NOT give credit for the use of CAGE in the absence of any other assessment for alcohol use. Standardized tools for **drug** screening include (but are not limited to) the following: • CAGE-AID • DAST-10 • ASSIST (screen for alcohol, tobacco, and substance).	AHLTA
Recent substance use	Use in the past three months.	
DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with PTSD	See Table A.3.	CAPER, SIDR

Table A.7—Continued

NTE	See New Treatment Episode – PTSD in Key Definitions. The NTE was defined from administrative data. Abstractors confirmed the NTE and NTE date based on information in the medical record. A correction to the NTE date was allowed by the abstractor, if applicable. NTEs were limited to those cases diagnosed in the outpatient setting.	CAPER, SIDR, PDTS, AHLTA
Exclusions	None	
MEASURE BACKGROUND		
Measure source	Adapted from the following: Farmer, Carrie M., Katherine E. Watkins, Brad Smith, Susan M. Paddock, Abigail Woodroffe, Jacob Solomon, Melony E. Sorbero, Kimberly A. Hepner, Lanna Forrest, Lisa R. Shugarman, Cathy Call, and Harold A. Pincus, *Program Evaluation of VHA Mental Health Services: Medical Record Review Report*, Alexandria, Va.: Altarum Institute and RAND–University of Pittsburgh Health Institute, 2010. National Quality Forum, "NQF #0110 Bipolar Disorder and Major Depression: Appraisal for Alcohol or Chemical Substance Use," last updated September 19, 2014. NOTE: The steward of this measure removed it from NQF endorsement in September of 2014. As of March 18, 2015: http://www.qualityforum.org/QPS/0110	
Rationale for measure inclusion	**Source/Adaptation** This measure was modified from its use in the VHA Mental Health Program Evaluation (Farmer et al., 2010; Watkins et al., 2011) in a variety of ways. First, What constitutes a break in care was changed from five months to six months to match the time frame that is more generally used. NTEs were limited to those cases diagnosed in the outpatient setting. There is a similar measure endorsed by NQF until recently (0110), which recommends assessing comorbid alcohol and substance use in patients with bipolar or unipolar depression (National Quality Forum, 2013). We have expanded this measure to apply to all patients with new treatment episodes for PTSD because of the prevalence of comorbid alcohol and drug misuse associated with other psychological health conditions (Kessler, 2004). **Guideline Support** **Research Evidence** Mental health patients who are currently using alcohol or other drugs do not respond to treatment as well as patients who are not using alcohol or drugs (Le Fauve et al., 2004). Moreover, the impairment associated with their mental health conditions appears to be more severe and chronic than for patients without concurrent substance use (Kessler, 2004). *VA/DoD Clinical Practice Guideline for Management of Post-Traumatic Stress* and the *VA/DoD Clinical Practice Guideline for Management of Major Depressive Disorder (MDD)* both recommend that current substance use patterns of patients with these disorders be assessed in order to identify substance abuse or dependency, including alcohol, nicotine, and prescribed and illicit drugs (VA and DoD, 2009a; VA and DoD, 2010b; Rock et al., 2011).	
Feasibility	The denominator for this measure was PTSD patients in a new treatment episode at the time of cohort entry as determined by administrative data and validated with medical record review. The substance use assessment was also collected from medical record review, but could be accessed from the BHDP for use of AUDIT or AUDIT-C for substance screening.	

Table A.8
PTSD-T1: Periodic Symptom Assessment with PCL

MEASURE SUMMARY	
Measure statement	Percentage of PTSD patients with assessment of symptoms with PCL during the four-month assessment period
Numerator	Patients in the denominator who have a PCL administered at least once during the four-month measurement period
Denominator	Patients with PTSD and an encounter within the four-month measurement period
Measure type	Process
Care setting	Outpatient

NUMERATOR SPECIFICATIONS		Data Source
PCL administered	The PCL is a 17-item self-report measure of symptoms of PTSD (Blanchard et al., 1996). Slight variants of the scale exist, all of which are scored identically. The PCL-C is the general version (civilian), and scale items refer to a "stressful experience from the past." The PCL-M is the military version, and items refer to a "stressful military experience." The PCL-S (PCL—Specific) limits responses to one particular stressful event by requiring the respondent to nominate a single stressful event; subsequent items refer to "the stressful experience." A newer version of this tool, the PCL-5 is based on DSM-V criteria for PTSD.(Weathers et al., 2013) The PCL-5 is not included in the current specifications for this measure. PCL was administered at least once during the four-month measurement period. The 12-month period used in this evaluation allowed for a maximum of three four-month measurement periods for each patient. For NTEs starting in the first month of the first measurement period, include scores in the 30 days prior to the NTE date.	AHLTA or BHDP[a]

DENOMINATOR SPECIFICATIONS		Data Source
Patients with PTSD	See Table A.3. Because BHDP was the data source for the numerator, the denominator was limited to the Army and those receiving direct care only.	CAPER, SIDR
Four-month measurement period with encounter	Time window in which the PTSD patient is either seen at an office visit or contacted via another method (phone: 99441, 99442, 99443; email: 99444), during a four-month time period defined by dates of service that fall within that time period (e.g., June 1, 2013, to September 30, 2013). The potentially eligible intervals for this study were the first, second, and third four-month intervals of the 12-month observation period. Encounter may be a primary care or behavioral health outpatient visit, telephone or email contact associated with ICD-9 CM code 309.81. For primary care providers, the code may have been primary or secondary; for behavioral health providers, the code must have been primary.	CAPER[b]

Table A.8—Continued

Four-month measurement period with encounter	*Behavioral health providers (any setting):* Psychiatrist: 070, 071, 073, 076 Psychologist/psychoanalyst: 072, 702 Psychiatric nurse practitioner: 611 Clinical social worker: 703, 714 *Primary care providers (any setting):* Family practice physician: 000, 001, 003 Internal medicine physician: 008, 011, 028, 097-099 Geriatrician: 017 Primary care nurse practitioner: 604, 605	CAPER: Provider Specialty (PROVSPEC1)
	Primary care providers in conjunction with specific setting: Clinical Nurse-entry level nurse practitioner: 610 Physician assistant: 901 *In conjunction with:* Family practice clinic: AGA, AGZ, BGA, BGZ Internal medicine clinic: AAA, BAA Primary care clinic: BHA, BHZ	CAPER: Provider Specialty (PROVSPEC1); MEPRS code, 3rd level (MEPR3)
Exclusions	Exclusions included the following: • **Death** during the measurement time frame • **Permanent nursing home resident** during the measurement time frame. There were no direct care permanent nursing home residents in the sample. • **Hospice:** Enrolled in hospice during the measurement time frame. There were no direct care hospice patients in the sample. • **Personality Disorder**[c] (in any position) during the measurement time frame: 301.0 Paranoid personality disorder 301.1 Affective personality disorder 301.10 Affective personality disorder unspecified 301.11 Chronic hypomanic personality disorder 301.12 Chronic depressive personality disorder 301.13 Cyclothymic disorder 301.2 Schizoid personality disorder 301.20 Schizoid personality disorder unspecified 301.21 Introverted personality 301.22 Schizotypal personality disorder 301.3 Explosive personality disorder 301.4 Obsessive-compulsive personality disorder 301.5 Histrionic personality disorder 301.50 Histrionic personality disorder unspecified 301.51 Chronic factitious illness with physical symptoms 301.59 Other histrionic personality disorder 301.6 Dependent personality disorder 301.7 Antisocial personality disorder 301.8 Other personality disorders 301.81 Narcissistic personality disorder 301.82 Avoidant personality disorder 301.83 Borderline personality disorder 301.84 Passive-aggressive personality 301.89 Other personality disorders 301.9 Unspecified personality disorder	

Table A.8—Continued

MEASURE BACKGROUND	
Measure source	Adapted from: National Quality Forum, "NQF #0712 Depression Utilization of the PHQ-9 Tool," last updated September 24, 2014. As of March 18, 2015: http://www.qualityforum.org/QPS/0712
Rationale for measure inclusion	**Source/Adaptation** This measure was adapted from the NQF measure for MDD that recommends monitoring response to treatment over time using the PHQ-9 (National Quality Forum, 2013). The suggested frequency of reassessment is at least once during every four-month interval that includes a patient encounter. We applied this model of use of the PHQ-9 to the regular use of the PCL to monitor response to treatment for PTSD that is objective and quantitative and that can be used to assess ongoing treatment response. This indicator reflects the NQF recommendations for MDD adapted for application to PTSD-diagnosed patients in new treatment episodes. **Guideline Support** This measure is based on clinical care recommendations in *VA/DoD Clinical Practice Guideline for Management of Post-Traumatic Stress* (VA and DoD, 2010b). The guideline recommends "regular follow-up with monitoring and documentation of symptom status" in the treatment of PTSD in both primary care and specialty mental health settings. In discussing the regularity of monitoring, the guideline recommends that patients be assessed at every treatment visit and encourages clinicians to consider a validated measure, such as the PCL. Comprehensive reassessments and evaluations should occur . . . every three months after initiating treatment for PTSD, in order to monitor changes in clinical status and revise the intervention plan accordingly. The interval of three months is suggested because many controlled trials of first line therapies for PTSD recommended in this guideline demonstrate clinically significant changes during this time frame. (Management of Post-Traumatic Stress Working Group, 2010, p. 94) **Research Evidence** There is an increasing emphasis on the need to deliver care that is evidence-based and effective. Harding and colleagues (2011) make the case for measurement-based care as the standard for psychiatric practice to align with physical health care. Standardized, repeated measurement of PTSD symptoms allows clinicians to track individual patient response to treatment and allows administrators and organizations to monitor the treatment outcomes of larger patient groups. Greenberg, Rosenheck, and Fontana (2003) have shown that standardized assessment of PTSD symptoms is related to PTSD treatment outcomes. Elsewhere, Fontana and Rosenheck (1994, p. 407) addressed the importance of using standardized instruments to assess PTSD symptoms across "multiple domains of functioning, while at the same time minimizing the overall length of the data collection protocols."

Table A.8—Continued

Rationale for measure inclusion	For a variety of reasons, we recommend that the PCL (Blanchard et al., 1996) be the standardized measurement tool for this purpose. First, the PCL has been validated with active-duty service members (Bliese et al., 2008). Importantly, the psychometric properties of the PCL are strong, with good internal consistency (α = 0.94–0.97) and reliable scale scores across short test-retest periods ($\rho = 0.88–0.96$) (Blanchard et al., 1996; Ruggiero et al., 2003; Weathers et al., 1993). Note that long-measurement-period reliability is neither expected nor desirable for a measure designed to be sensitive to symptom change over time. In fact, to the contrary, it is important to establish that measures employed for this purpose are sensitive to symptom change in response to treatment—a criterion passed by the PCL (Monson et al., 2008). Validity of the PCL as an indicator of DSM-IV diagnosis and symptom strength is strong, with the PCL being nearly collinear ($\rho = 0.93$) with the CAPS, the gold-standard measure for psychiatric diagnosis (Blanchard et al., 1996). Moreover, there is good convergent validity with other validated measures of PTSD ($\rho = 0.77–0.93$) (Blanchard et al., 1996; Weathers et al., 1993). Of note is the fact that the diagnostic criteria for PTSD were updated in the 2013 DSM-V (American Psychiatric Association, 2013). A revised version of the PCL (PCL-5) reflects these changes (Weathers et al., 2013). It will be important to track the use of this instrument and the need to update items or scoring protocols.
Feasibility	The denominator for this measure was PTSD patients with a qualifying encounter for PTSD in the four-month interval(s) which was determined from administrative data. The assessment of PTSD symptoms using the PCL was retrieved from the BHDP, but could also have been collected from the medical record.

[a] The intended data source had been AHLTA but was changed to BHDP due to the need to shorten the medical record abstraction process of this study.

[b] To assure that all requisite care was accessible, the denominator was limited to behavioral health encounters since the BHDP was not in general use at the time of data collection.

[c] Note that while the Depression T1 measure excludes service members with bipolar disorder from the denominator, the PTSD T1 measure does not exclude these cases.

Table A.9
PTSD-T3: Appropriate Follow-up for Endorsed Suicidal Ideation

MEASURE SUMMARY	
Measure statement	Percentage of patient contacts of PTSD patients with SI with appropriate follow-up (PTSD-T3)
Numerator	Documentation of appropriate follow-up for the suicidal ideation, intent, or behavior
Denominator	Outpatient visits or contacts where the PTSD patient endorsed suicidal ideation, intent, or behavior
Measure type	Process
Care setting	Outpatient

Table A.9—Continued

NUMERATOR SPECIFICATIONS		Data Source
Appropriate follow-up	Hospitalization or referral for hospitalization OR [Assessment of presence/absence of a plan and access to means AND Limitation of lethal means counseling or documented negative assessment for access to means AND Follow-up referral or appointment] Additionally, data were collected describing the frequencies of key assessments and provider actions during the visit when SI was noted. Key assessments of modifying factors during the visit: • Level of persistence of SI (persistent, not persistent but current, recent) • Intention to act on SI • Suicide plan • Access to means • Documented level of risk (high, intermediate, low) • Recent preparatory behavior ("recent" or within the past two weeks) • Recent suicide attempts ("recent" or within the past two weeks) • Prior history of suicide attempts (more than two weeks ago) • Recent substance abuse ("recent" or within the past two weeks) • Prior history of substance abuse (more than two weeks ago) Provider actions during the visit the where the positive SI was noted: • Hospitalization • Patient assessment by behavioral health If not hospitalized: • Discussion with patient/family of limitation of lethal means • Referral to/appointment with behavioral health • Return appointment with the same provider	AHLTA
DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with PTSD	See Table A.3.	CAPER, SIDR
SI	A positive response to a standardized screening tool for SI or any reference to the patient's not wanting to live anymore, comments about killing oneself or doing oneself serious harm, and thoughts of death as a solution that was current or recent (within the past 2 weeks). The application of this measure focused on the first occurrence of SI in an outpatient setting during the measurement period.[a]	AHLTA
Exclusions	None	

Table A.9—Continued

MEASURE BACKGROUND	
Measure source	Adapted from: Farmer, Carrie M., Katherine E. Watkins, Brad Smith, Susan M. Paddock, Abigail Woodroffe, Jacob Solomon, Melony E. Sorbero, Kimberly A. Hepner, Lanna Forrest, Lisa R. Shugarman, Cathy Call, and Harold A. Pincus, *Program Evaluation of VHA Mental Health Services: Medical Record Review Report*, Alexandria, Va.: Altarum Institute and RAND–University of Pittsburgh Health Institute, 2010.
Rationale for measure inclusion	**Source/Adaptation** A similar measure was used in the VHA Mental Health Program Evaluation (Farmer et al., 2010; Watkins et al., 2011). That measure has been modified here based on the *VA/DoD Clinical Practice Guideline for Assessment and Management of Patients at Risk for Suicide* (Department of Veterans Affairs and Department of Defense, 2013). Whereas the VA measure had the abstractor evaluate the appropriateness of the follow-up, we limited this measure's application to summarizing relevant patient assessments and provider actions. While the complexity of suicide risk assessment and management makes it difficult to assess in the context of a larger evaluation of quality, it can be examined in terms of the provider's approach to the evaluation and management of the patient. **Guideline Support** The recommendations are also consistent with *VA/DoD Clinical Practice Guideline for the Management of Substance Use Disorders* (Management of Substance Use Disorders Working Group, 2009), *VA/DoD Clinical Practice Guideline for Management of Post-Traumatic Stress*, and *Clinical Practice Guideline for Management of Major Depressive Disorder (MDD)*, which state that, when a patient is a threat to himself or herself or others, a plan should be implemented to ensure safety until the patient can be further evaluated and treated by a mental health professional (Bongar, 2002; VA and DoD, 2009a; VA and DoD, 2009b; VA, and DoD, 2010b; VA and DoD, 2010a). The American Psychiatric Association CPGs also recommend thorough assessment of suicidality during intake evaluations (Work Group on Suicidal Behaviors, 2003). The indicator was developed by RAND researchers incorporating consultation with suicide experts and VA clinical leadership for the VHA Mental Health Program Evaluation (Farmer et al., 2010; Watkins et al., 2011).
Rationale for measure inclusion	It is important to note that *VA/DoD Clinical Practice Guideline for Assessment and Management of Patients at Risk for Suicide* (VA and DoD, 2013) specifies that the recommended course of treatment be tied to a clinical judgment of whether the acute risk for suicide is low, intermediate, or high. Decisions about acute risk status require the clinical provider to integrate data about SI, thoughts, planning, impulse control, previous attempts, persistence of ideation, and the strength of intent to act into a single risk status judgment. That acute risk status judgment (low, intermediate, high) is then mapped onto several possible clinical responses. When acute risk status is low, the provider can choose to consult with a behavioral health provider or address the safety issues and treat the presenting problems. When acute risk status is intermediate, the recommendations are to limit access to lethal means, conduct a complete behavioral evaluation (or refer to a behavioral health provider to do so), and determine an appropriate referral. The appropriate referral is left to the judgment of the clinician, who must select the "least restrictive level of care necessary to ensure safety." When acute risk status is high, the guidelines recommend maintenance of direct observational control of the patient and transfer to an emergency care setting for hospitalization. As these guidelines are promulgated, it is possible that fields will be added to the electronic record to capture more-complex decisions, such as assignment to an acute risk category. Moreover, choices for the "least restrictive level of care necessary to ensure safety" may be further operationalized into an "if-then" decision making tool to guide provider action.

Table A.9—Continued

	Research Evidence Given that SI may predict suicidal behavior, it is important that providers with patients who endorse these thoughts provide immediate and appropriate follow-up care to reduce their patients' risk. For patients who are actively suicidal, inpatient psychiatric hospitalization is a common prevention measure to ensure their safety. Although hospitalization typically prevents suicide during the stay, hospitalization alone has not been demonstrated to reduce the risk of suicide following discharge (Goldsmith et al., 2002; Jacobs et al., 2003). Rather, specific interventions that are conducted during the inpatient stay are the key (Brown et al., 2005; Linehan et al., 2006). Unfortunately, hospital stays are often too short to allow any specific intervention to be delivered (Goldsmith et al., 2002). Nonetheless, without other strategies to keep a patient safe who poses a short-term danger to him- or herself, hospitalization may be an appropriate strategy (VA and DoD, 2013; Jacobs et al., 2003). An alternative is to develop a safety plan with a suicidal patient and his or her family and support network. These plans are widely used by mental health providers (Miller, Jacobs and Gutheil, 1998). Safety plans generally include personalized coping strategies and resources defined in conjunction with the patient to reduce the suicide risk. A Safety Plan Worksheet was added to the VA/DoD Suicide Risk CPG in 2014 (Department of Veterans Affairs, 2013). No evidence exists to support their effectiveness (Goldsmith et al., 2002), but detecting a treatment effect in programs targeting low-base-rate behaviors, such as suicide, is difficult (Jacobs et al., 2003). One component of safety plans, means restriction, does hold promise (Ramchand et al., 2011). *Means restriction* refers to any strategy that removes a suicidal patient's access to lethal means. This typically refers to removal of firearms from the patient's residence or access to firearms while on duty but also includes public health initiatives, such as packaging medications that are lethal when overdosed in blister packs or engineering shower rods to fail if an individual attempts to use one to hang himself or herself (Ramchand et al., 2011). Safety plans, particularly when they involve the patient's family, can and should include means-restriction plans. Given that firearms are the most common route to suicide among service members, DoD providers may wish to pay particular attention to developing plans with the patient and family to restrict firearm access (Blue Ribbon Work Group on Suicide Prevention in the Veteran Population, 2008; Hilton et al., 2009) Note that safety plans, which put specific suicide risk reduction strategies into place, are distinct from no-suicide contracts, in which the patient simply promises not to engage in suicidal behavior. No-suicide contracts are not recommended because of the lack of supportive empirical evidence and concern that providers may not closely monitor suicidal patients who sign such contracts (VA and DoD, 2013)
Feasibility	The data source for this measure is the patient's medical record because of the complexity of the screening and assessment for SI risk and the determination of an appropriate follow-up. Because the publication of the suicide risk CPG occurred just shortly before data collection, it is probable that insufficient time had elapsed for the generalized adoption of the elements of the CPG (e.g., categorizing suicide risk level as high, intermediate, or low). A minimum level of care was utilized here to evaluate the follow-up for SI. This may be altered in the future to better reflect key elements in the CPG.

[a] The time frame in this study for identifying positive SI was reduced early in the abstraction to the first six months of the measurement period to reduce abstractor burden.

Table A.10
PTSD-T5: Duration of SSRI/SNRI Treatment

MEASURE SUMMARY	
Measure statement	Percentage of PTSD patients with a newly prescribed SSRI/SNRI for ≥60 days
Numerator	PTSD patients who receive a newly prescribed SSRI/SNRI for ≥ 60 days
Denominator	Patients with PTSD who fill a new prescription for an SSRI/SNRI
Measure type	Process
Care setting	Outpatient

NUMERATOR SPECIFICATIONS		**Data Source**
Adequate SSRI/SNRI trial	At least 60 days of SSRI/SNRI dispensed during the allotted time period. Any dispensing regimen is acceptable as long as the gaps in medication treatment do not exceed a total of 20 days over an 80-day period. "Treatment days" are equal to the sum all the days' supply for each script that falls in the treatment period, regardless of overlapping prescriptions or prescriptions for the same or different applicable medications. If a date of dispensing falls at the end of the measurement interval, the days' supply that fall after the end of the interval are not counted. For example, a prescription of 90 days' (3 months) supply dispensed on the 60th day will contribute 20 days' supply to the 80-day interval.	PDTS

DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with PTSD	See Table A.3. (See measure application algorithm below.)	CAPER, SIDR, TED-NI, TED-I
New prescription	Prescription for SSRI/SNRI in the 30 days prior or 14 days after the first encounter during the measurement period with a diagnosis of PTSD and no SSRI/SNRI prescription in the 90 days prior to this prescription.	PDTS
SSRI/SNRI	Selective serotonin reuptake inhibitors (SSRIs): Citalopram (Celexa) Escitalopram (Lexapro) Fluoxetine (Prozac, Prozac Weekly, Sarafem, Selfemra) Fluvoxamine (Luvox, Luvox CR) Olanzapine-fluoxetine (Symbyax) Paroxetine (Paxil, Paxil CR, Pexeva) Sertraline (Zoloft) Serotonin and norepinephrine reuptake inhibitors (SNRIs): Desvenlafaxine (Khedezla, Pristiq) Duloxetene (Cymbalta) Levomilnacipran (Fetzima) Milnacipran (Savella) Venlafaxine (Effexor, Effexor XR)	PDTS: Product Name (PRODNAME) and Days Supply (DAYSUPLY)

Table A.10—Continued

Measure application algorithm	The following algorithm is based on the implementation of "NQF #0105 Antidepressant Medication Management" on which this measure is based. It has been adapted to reflect the data sources used for this study. **Step 1:** Identify all members who met at least one of the following criteria during the Intake Period (measurement year). • At least one primary diagnosis of PTSD in an outpatient, ED, intensive outpatient or partial hospitalization setting, or • At least two visits in an outpatient, ED, intensive outpatient or partial hospitalization setting on different dates of service with any diagnosis of PTSD, or • At least one inpatient (acute or non-acute) claim/encounter with any diagnosis of PTSD	
	Code to Identify PTSD ICD-9-CM Diagnosis: 309.81	CAPER, TED-NI, SIDR, TED-I
	CPT Codes to Identify Outpatient Visit Type • Emergency Department: 99281-99285 • Outpatient psychotherapy: 90804-90815 • Education for self-management: 98960-98962 • Group education: 99078 • Outpatient E&M: 99201-99205, 99211-99215, 99217-99220 • Outpatient consultation: 99241-99245 • Home visit: • 99341-99345, 99347-99350, 99510 Preventive medicine: 99384-99387, 99394-99397, 99401-99404, 99411, 99412	

Table A.10—Continued

Measure application algorithm	**HCPCS:** • Social work, activity therapy, self-care education, group therapy: G0155, G0176, G0177, G0409-G0411 • Behavioral health counseling, medication training, partial hospitalization/ community treatment, rehabilitation and community support: H0002, H0004, H0031, H0034-H0037, H0039, H0040, H2000, H2001, H2010-H2020 • Mental health medication management: M0064 • Partial hospitalization, intensive outpatient psychiatric treatment, crisis intervention: S0201, S9480, S9484, S9485 **CPT codes and place of service (POS)** • Psychiatric diagnostic: 90801, 90802 **2013:** 90791, 90792 • Psychotherapy and crisis (2013): 90832-90834, 90836-90840 • Inpatient/partial hospitalization psychotherapy: 90816-90819, 90821-90824, 90826-90829 • Psychoanalysis: 90845 • Family/group: 90847, 90849, 90853, 90857 • Medication management: 90862, **2013:** 90863[a] • Electroconvulsive therapy (ECT): 90870 • Biofeedback: 90875, 90876 • Inpatient E&M: 99221-99223 • Subsequent hospital care: 99231-99233, 99238, 99239 • Inpatient consultation: 99251-99255 **WITH** outpatient POS: Above CPT-related encounter was attached to an outpatient visit. **Step 2:** Determine the Index Episode Start Date (IESD). For each member identified in step 1, identify the date of the earliest encounter during the Intake Period with any diagnosis of PTSD. If the member had more than one encounter during the Intake Period, include only the first encounter. **Step 3:** Identify the Index Prescription Start Date (IPSD). The IPSD is the date of the earliest dispensing event for an SSRI/SNRI medication during the period of 30 days prior to the IESD (inclusive) through 14 days after the IESD (inclusive). Exclude members who did not fill a prescription for an SSRI/SNRI medication during this period.	CAPER, TED-NI, SIDR, TED-I

Table A.10—Continued

Measure application algorithm	**Step 4:** Test for Negative Medication History. Exclude members who filled a prescription for an SSRI/SNRI in the 90 days (3 months) prior to the IPSD. **Step 5:** Calculate continuous enrollment. Members must be continuously enrolled (did not have two or more consecutive months of TRICARE ineligibility based on the VM6 Beneficiary Level files) for 90 days (3 months) prior to the IESD to 80 days after the IESD.	
Exclusions	Patient with a prescription filled for SSRI/SNRI in the 90 days prior to the date of the new prescription	PDTS

MEASURE BACKGROUND

Measure source	Adapted from: Farmer, C., Watkins, K.E., Smith, B., Paddock, S.M., Woodroffe, A., Solomon, J., Sorbero, M., Hepner, K., Forrest, L., Shugarman, L., Call, C., and Pincus, H.A., Program Evaluation of VHA Mental Health Services: Medical Record Review Report, Alexandria, VA: Altarum Institute and RAND-University of Pittsburgh Health Institute, 2010. National Quality Forum, "NQF #0105 – Antidepressant Medication Management," Last Updated: December 23, 2014. As of March 1, 2015: http://www.qualityforum.org/QPS/0105
Rationale for measure inclusion	**Source/Adaptation** This measure is adapted from the VA Mental Health Program (Farmer et al., 2010; Watkins et al., 2011). In that evaluation, this measure was applied to PTSD patients with a new treatment episode and assessed whether an SSRI/SNRI trial occurred. Rather than focusing on PTSD patients with a new treatment episode, this measure applies to all PTSD patients who are newly treated with an SSRI/SNRI, as long as there was no treatment with the same class of drug in the prior 90 days. The application here is based on the specifications for NQF #0105 related to the duration of a newly prescribed antidepressant.

Table A.10—Continued

Rationale for measure inclusion	**Guideline Support** This indicator is based on recommendations in the 2010 *VA/DoD Clinical Practice Guideline for Management of Post-Traumatic Stress* (2010b). The guideline strongly recommends selective serotonin reuptake inhibitors (SSRIs) or serotonin and norepinephrine reuptake inhibitors (SNRIs) as a monotherapy treatment option for PTSD. The CPG authors rate the strength of the evidence supporting this recommendation as an 'A', which is reserved for recommendations based on "good evidence that the intervention improves important health outcomes" with the added requirement that "benefits substantially outweigh harm" (VA and DoD, 2010b, p.7). Clinically, 'A' grades indicate a strong recommendation for clinicians to provide the treatment to eligible patients. A trial of an SSRI or SNRI should be optimized before shifting to a new treatment strategy. The VA/DoD Clinical Practice Guideline recommends that side effects and outcomes be monitored for a minimum of eight weeks before a clinician proceeds to a new treatment trial for nonresponsive patients (2010b). The grade for this timing recommendation is 'C', which indicates that there exists "fair" evidence to conclude that the recommendation "can improve health outcomes" but that the "balance of benefits to harms is too close to justify a general recommendation" (VA and DoD, 2010b). Given the low grade of evidence supporting the timing for this measure, it will be important to continue to validate this measure to ensure that the threshold provides a maximized opportunity for an SSRI/SNRI to begin to reduce symptoms while minimizing the length of the time spent on unsuccessful medication trials. **Research Evidence** Empirical support, from randomized control trials and meta analyses of those trials, exists to justify the use of SSRIs and SNRIs as a first-line agent for the treatment of PTSD (Brady et al., 2000; Davidson et al., 2001; Foa, Davidson and Frances, 1999; Jonas et al., 2013; Stein, Ipser and Seedat, 2009). A recent review of PTSD pharmacotherapy indicated that the largest and greatest number of trials showing efficacy have been with the SSRIs (Ipser and Stein, 2012). Venlafaxine, an SNRI, has had positive results in two trials with more than 800 participants with non-combat related PTSD (Davidson et al., 2006a; Davidson et al., 2006b). PTSD practice guidelines from the Society for Traumatic Stress Studies and the American Psychiatric Association echo the recommendations of the VA/DoD CPG (American Psychiatric Association, 2004; Benedek et al., 2009; Foa, Keane and Friedman, 1999). In contrast, a 2008 IOM report concluded that there was insufficient evidence to categorize SSRIs as an effective treatment for PTSD (Institute of Medicine, 2008). Note however, that a subsequent IOM report on treatment of PTSD among service members stated that there "are several effective pharmacotherapies for treating PTSD, particularly SSRIs" (Institute of Medicine, 2012, p.273).
Feasibility	This measure was implemented as an administrative data measure making it highly feasible. However, calculating the numerator from the PDTS alone lacks the opportunity to capture data about valid reasons why an initiated medication trial may have been terminated early, which would only have been available from medical record review.

[a] Code +90863 (Pharmacologic management, including prescription and review of medication, when performed with psychotherapy services [for providers who may not report E&M codes]) is included in this study due to the common use of prescribing clinical psychologists in MTFs.

Table A.11
PTSD-T6: Follow-Up of New Prescription for SSRI/SNRI

MEASURE SUMMARY	
Measure statement	Percentage of PTSD patients newly prescribed an SSRI/SNRI with follow-up visit within 30 days
Numerator	PTSD patients who have a follow-up visit within 30 days of the new prescription for a SSRI/SNRI
Denominator	Patients with PTSD with a new prescription for a SSRI/SNRI
Measure type	Process
Care setting	Outpatient

NUMERATOR SPECIFICATIONS		Data Source
Follow-up visit	An outpatient, PTSD-related E&M visit within 30 days following the new prescription for the SSRI/SNRI	CAPER, TED-NI
Outpatient E&M visit	See Outpatient Evaluation and Management Visit in Key Definitions. The E&M visit is used to approximate medication management visits, although this definition is likely to overestimate the actual number of medication related visits.	CAPER, TED-NI

DENOMINATOR SPECIFICATIONS		Data Source
Patients with PTSD	See Table A.3. (See measure application algorithm below.)	CAPER, TED-NI, SIDR, TED-I
New prescription	Prescription for SSRI/SNRI in the 30 days prior or 14 days after the first PTSD encounter during the measurement period with no prescription for an SSRI/SNRI in the prior 90 days	PDTS
SSRI/SNRI	Selective serotonin reuptake inhibitors (SSRIs): Citalopram (Celexa) Escitalopram (Lexapro) Fluoxetine (Prozac, Prozac Weekly, Sarafem, Selfemra) Fluoxetine-olanzapine (Symbyax) Fluvoxamine (Luvox, Luvox CR) Paroxetine (Paxil, Paxil CR, Pexeva) Sertraline (Zoloft) Serotonin and norepinephrine reuptake inhibitors (SNRIs): Desvenlafaxine (Khedezla, Pristiq) Duloxetene (Cymbalta) Levomilnacipran (Fetzima) Milnacipran (Savella) Venlafaxine (Effexor, Effexor XR)	PDTS: Product Name (PRODNAME)
Measure application algorithm	The following algorithm is based on the implementation of "NQF #0105 Antidepressant Medication Management" on which the prior measure PTSD-T5 is based. It has been adapted to reflect the data sources used for this study.	

Table A.11—Continued

Measure application algorithm	**Step 1:** Identify all members who met at least one of the following criteria during the Intake Period (measurement year). • At least one primary diagnosis of PTSD in an outpatient, ED, intensive outpatient or partial hospitalization setting, OR • At least two visits in an outpatient, ED, intensive outpatient or partial hospitalization setting on different dates of service with any diagnosis of PTSD, OR • At least one inpatient (acute or non-acute) claim/ encounter with any diagnosis of PTSD **Code to Identify PTSD** ICD-9-CM Diagnosis: 309.81 **CPT Codes to Identify Outpatient Visit Type** • Emergency Department: 99281–99285 • Outpatient psychotherapy: 90804–90815 • Education for self-management: 98960–98962 • Group education: 99078 • Outpatient E&M: 99201–99205, 99211–99215, 99217–99220 • Outpatient consultation: 99241–99245 • Home visit: 99341–99345, 99347–99350, 99510 • Preventive medicine: 99384–99387, 99394–99397, 99401–99404, 99411, 99412 **HCPCS:** • Social work, activity therapy, self-care education, group therapy: G0155, G0176, G0177, G0409–G0411 • Behavioral health counseling, medication training, partial hospitalization/ community treatment, rehabilitation and community support: H0002, H0004, H0031, H0034-H0037, H0039, H0040, H2000, H2001, H2010–H2020 • Mental health medication management: M0064 • Partial hospitalization, intensive outpatient psychiatric treatment, crisis intervention: S0201, S9480, S9484, S9485 **CPT codes and place of service (POS)** • Psychiatric diagnostic: 90801, 90802 **2013:** 90791, 90792 • Psychotherapy and crisis (2013): 90832–90834, 90836–90840 • Inpatient/partial hospitalization psychotherapy: 90816–90819, 90821–90824, 90826–90829 • Psychoanalysis: 90845 • Family/group: 90847, 90849, 90853, 90857 • Medication management: 90862, **2013:** 90863[a]	CAPER, TED-NI, SIDR, TED-I

Table A.11—Continued

Measure application algorithm	• Electroconvulsive therapy (ECT): 90870 • Biofeedback: 90875, 90876 • Inpatient E&M: 99221–99223 • Subsequent hospital care: 99231-99233, 99238, 99239 • Inpatient consultation: 99251–99255 **WITH outpatient POS:** Above CPT-related encounter was attached to an outpatient visit. **Step 2:** Determine the Index Episode Start Date (IESD). For each member identified in step 1, identify the date of the earliest encounter during the Intake Period with any diagnosis of PTSD. If the member had more than one encounter during the Intake Period, include only the first encounter. **Step 3:** Identify the Index Prescription Start Date (IPSD). The IPSD is the date of the earliest dispensing event for an SSRI/SNRI medication during the period of 30 days prior to the IESD (inclusive) through 14 days after the IESD (inclusive). Exclude members who did not fill a prescription for an SSRI/SNRI medication during this period. **Step 4:** Test for Negative Medication History. Exclude members who filled a prescription for an SSRI/SNRI in the 90 days (3 months) prior to the IPSD. **Step 5:** Calculate continuous enrollment. Members must be continuously enrolled (did not have two or more consecutive months of TRICARE ineligibility based on the VM6 Beneficiary Level files) for 90 days (3 months) prior to the IESD to 80 days after the IESD.	CAPER, TED-NI, SIDR, TED-I
Exclusions	Patient with an acute or nonacute hospital admission during the 30-day follow-up period either for a mental health or non-mental health reason. These patients are excluded from the measure because inpatient admission may prevent an outpatient follow-up visit from occurring.	SIDR, TED-I

MEASURE BACKGROUND

Measure source	New measure
Rationale for measure inclusion	**Guideline Support** This is a newly developed measure that will require validation. We believe the 30-day follow-up window represents an adequate trial to allow the provider to make a determination of initial response and evaluate side effects experienced by the patient (VA and DoD, 2010b). The follow-up visit provides an opportunity to address any medication side effects and to enhance adherence. Although the RAND team selected a 30-day window for the first follow-up, we note that this time period was selected based on clinical judgment. Research has not yet been conducted to determine the precise threshold for the time period. Validation research will be necessary in order to determine the time frame that jointly maximizes the time available for the provider and patient to schedule a visit, while ensuring that the time frame is no longer than the period after which treatment engagement suffers. Finally, we draw attention to the different time frames specified for this measure and the T9 measures (PTSD and depression). This measure requires two E&M visits (prescribing visit and follow-up E&M visit) within 30 days while the T9 measure allows eight weeks in which to complete the second E&M visit. The reason for this difference is that the T9 measure assesses the minimally appropriate level of care for mental health patients, while this measure sets a higher threshold for ideal care.

Table A.11—Continued

Rationale for measure inclusion	**Research Evidence** Although there is clear evidence that antidepressant medications are associated with symptom reduction (Fournier et al., 2010), one-third of patients will discontinue treatment within a month of receiving the prescription (Simon, 2002). For this reason, it is important for providers to maintain contact with patients in order to assess side effects and barriers to medication adherence and treatment engagement. Providers who follow-up with patients have the opportunity to work collaboratively with them to problem solve strategies to maintain medication adherence and treatment engagement.
Feasibility	This measure was implemented using administrative claims data and pharmacy data making it very feasible to operationalize. An appropriate follow-up visit was defined as any one of a series of selected E&M codes (see Table A.3). CAPER data revealed somewhat frequent provider use of the E&M code 99499 "Unlisted evaluation and management service" which is not included in the E&M visit definition used for this study. Providers using this CPT code make it difficult to know the actual complexity of their patient encounters. Use of this code in the absence of other more specific codes could result in an increased likelihood of appropriate care not being recognized due to nonspecific coding and lower performance on this quality measure.

[a] Code +90863 (Pharmacologic management, including prescription and review of medication, when performed with psychotherapy services [for providers who may not report E&M codes]) was included in this study due to the common use of prescribing clinical psychologists in MTFs.

Table A.12
PTSD-T7: Evidence-Based Psychotherapy

MEASURE SUMMARY	
Measure statement	Percentage of PTSD patients who receive evidence-based psychotherapy
Numerator	Patients in the denominator who received any evidence-based psychotherapy during the measurement period
Denominator	Patients with PTSD patients who received any psychotherapy
Measure type	Process
Care setting	Outpatient

NUMERATOR SPECIFICATIONS		**Data Source**
Outpatient psychotherapy	See Outpatient Psychotherapy in Key Definitions	CAPER
Evidence-based psychotherapy	Several evidence-based psychotherapies (EBT) may be used to treat PTSD, including: • TF-CBT: Trauma-focused cognitive behavioral therapy (Beck, Emery and Greenberg, 2005; Foa et al., 2005; Resick et al., 2008). • PE: Prolonged exposure (Lindauer et al., 2005) • CPT: Cognitive processing therapy (Cottraux et al., 2008; van Emmerik, Kamphuis and Emmelkamp, 2008) • EMDR: Eye movement and desensitization and reprocessing (van der Kolk et al., 2007) • SIT: Stress inoculation therapy (Rothbaum, 2001)	AHLTA

Table A.12—Continued

Evidence-based psychotherapy	The following components (at least two) were used to identify psychotherapy session(s) that incorporated EBT: • *Thoughts:* Discussion of maladaptive thoughts related to the patient's traumatic experience • *Behaviors:* Behavioral interventions to reduce the impact of the traumatic event • *Homework:* Collaboration between the therapist and patient to determine homework assignments to allow the patient to practice skills learned in session	AHLTA
Total number of evidence-based psychotherapy visits	Total number of visits during the measurement period with the same provider as the first evidence-based psychotherapy visit.	AHLTA
DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with PTSD	See Table A.3.	CAPER, SIDR
Measurement period	Twelve-month measurement period after entry into the PTSD cohort	CAPER, SIDR
Exclusions	None	
MEASURE BACKGROUND		
Measure source	Adapted from the following: Farmer, Carrie M., Katherine E. Watkins, Brad Smith, Susan M. Paddock, Abigail Woodroffe, Jacob Solomon, Melony E. Sorbero, Kimberly A. Hepner, Lanna Forrest, Lisa R. Shugarman, Cathy Call, and Harold A. Pincus, *Program Evaluation of VHA Mental Health Services: Medical Record Review Report*, Alexandria, Va.: Altarum Institute and RAND–University of Pittsburgh Health Institute, 2010.	
Rationale for measure inclusion	**Source/Adaptation** This measure comes from the VHA Mental Health Program Evaluation (Farmer et al., 2010; Watkins et al., 2011) and has been updated from the source to include newer recommended evidence-based PTSD therapies. **Guideline Support** This measure is based on clinical care recommendations in *VA/DoD Clinical Practice Guideline for Management of Post-Traumatic Stress* (VA and DoD, 2010b). The CPG authors identify TF-CBT and SIT as the two broad classes of evidence-based psychotherapy for PTSD. They give the strength of the evidence a grade of A, indicating that there is good evidence to support the claim that the intervention improved outcomes.	

Table A.12—Continued

Rationale for measure inclusion	**Research Evidence** Selection of these two classes of psychotherapy as the first-line behavioral treatments is consistent with other systematic reviews, including a Cochrane review that concluded that TF-CBT, stress management (a class that includes SIT), and EMDR are effective in the treatment of PTSD (Bisson and Andrew, 2007). Note that we have classified EMDR as a variant of TF-CBT, given evidence that calls into question the contribution of the eye-movement component of the treatment above and beyond the imaginal exposure component (Davidson and Parker, 2001; Spates et al., 2009). Civilian guidelines echo the VA/DoD CPGs. The American Psychiatric Association's *Practice Guideline for the Treatment of Patients with Acute Stress Disorder and Posttraumatic Stress Disorder* (American Psychiatric Association, 2004) include the recommendation that CBT be considered for acute and chronic PTSD and that other appropriate treatments include TF-CBT variants (e.g., EMDR, imagery rehearsal) and stress inoculation. An AHRQ report on treatment for PTSD confirms these conclusions (Jonas et al., 2013). *TF-CBT* refers to a broad range of psychological interventions based on learning theory, cognitive theory, emotional processing theory, and fear-conditioning models (see definition above). Treatment includes a variety of techniques most commonly involving exposure to trauma stimuli or cognitive restructuring. These treatments are structured, typically time limited (eight to 12 sessions), and often manualized (e.g., (Beck, Emery and Greenberg, 2005; Foa, Hembree and Rothbaum, 2007; Resick et al., 2008). Prolonged exposure (Foa, Hembree and Rothbaum, 2007), a treatment protocol that transitions from imaginal exposure to in vivo exposure, has been demonstrated to reduce PTSD in a variety of populations (for review, see Cahill et al., 2009). For prolonged exposure and other exposure treatments, symptom improvement is rapid, and effect sizes are large and maintained over time (Foa et al., 2005; Powers et al., 2010; Resick et al., 2002). In one long-term follow-up, PTSD remitted in 80 percent of treated patients, and remission was maintained for five to ten years (Resick et al., 2012). In comparative-effectiveness trials, exposure is superior to supportive counseling, relaxation training, treatment as usual, psychotherapy without an exposure element, and combinations of pharmacology, counseling, and group therapy (Asukai et al., 2010; Boudewyns and Hyer, 1990; Bryant, Moulds and Nixon, 2003; Marks et al., 1998; Nacasch et al., 2011; Schnurr et al., 2007; Taylor et al., 2003; Vaughan et al., 1994). Exposure treatments are comparable in efficacy to SIT and cognitive therapy techniques alone (for meta-analytic review, see Powers et al., 2010). Adding SIT to exposure therapy produced little added benefit (Foa et al., 1999; Foa et al., 2005). Cognitive techniques alone (without exposure) are also effective in reducing PTSD symptoms (Cottraux et al., 2008; Marks et al., 1998; Resick et al., 2008; Tarrier et al., 1999). SIT was originally developed for a broad class of anxiety disorders (Meichenbaum, 1974) and later modified to treat PTSD among rape victims (Kilpatrick, Edmunds and Seymour, 1992). The treatment does not focus as explicitly on trauma memories and includes relaxation training, education on positive thinking and positive self-talk, thought-stopping strategies, and assertiveness training (Foa, Davidson and Frances, 1999). Comparative-effectiveness studies find SIT to be equally effective to prolonged exposure and more effective than waiting-list control (Foa et al., 1999; Foa et al., 1991).
Feasibility	The denominator for this measure (patients with PTSD and those patients receiving any psychotherapy) were identified with administrative data. The numerator required medical record review to determine the therapy approach used to treat the patient's PTSD and assess whether therapy was evidence-based. The complexity of the content of mental health notes and variability of mental health provider documentation styles made this a challenging task for the medical record abstractors.

Table A.13
PTSD-T8: Psychotherapy for New Treatment Episode

MEASURE SUMMARY	
Measure statement	Percentage of PTSD patients in a new treatment episode who received any psychotherapy within four months
Numerator	Patients in the denominator who receive any psychotherapy within four months following the start of a new treatment episode
Denominator	Patients in a new treatment episode of PTSD
Measure type	Process
Care setting	Outpatient

NUMERATOR SPECIFICATIONS		**Data Source**
Psychotherapy	See Outpatient Psychotherapy in Key Definitions	CAPER, TED-NI
Any psycho-therapy	One or more psychotherapy encounters in the four months following the start of the new treatment episode. If the initial visit triggering the new treatment episode is a psychotherapy-related encounter, there must be at least one additional psychotherapy encounter to meet the performance criteria for this measure.	CAPER, TED-NI

DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with PTSD	See Table A.3.	CAPER, TED-NI, SIDR, TED-I
NTE	See New Treatment Episode – PTSD in Key Definitions	CAPER, TED-NI, SIDR, TED-I
Exclusions	None	

MEASURE BACKGROUND	
Measure source	Adapted from: Sorbero, M., Mannle, T.E., Smith, B., Watkins, K.E., Woodroffe, A., and Paddock, S.M., Program Evaluation of VHA Mental Health Services: Administrative Data Report (Contract# GS 10 F-0261k), Alexandria, Va.: Altarum Institute and RAND-University of Pittsburgh Health Institute, 2010.
Rationale for measure inclusion	**Source/Adaptation** This measure was modified from a measure used in the VA Mental Health Program Evaluation (Farmer et al., 2010; Watkins et al., 2011). Modifications include a change in the definition of a break in care from 5 months to 6 months to match the time frame that is more generally used. The requirement for a 6-month break in PTSD-related medication (antidepressant, antipsychotic, and prazosin) was maintained from the VA evaluation. However, in this study, NTEs were limited to those diagnosed in the outpatient setting.

Table A.13—Continued

Rationale for measure inclusion	**Guideline Support** This measure is consistent with the recommendations of the *VA/DoD Clinical Practice Guidelines for Management of Major Depressive Disorder* (2009a) and Post-Traumatic Stress (2010b), which recommend psychotherapy as a first-line treatment option. The CPG authors identify cognitive behavioral therapy (CBT) and interpersonal psychotherapy (IPT) as the two evidence-based psychotherapies for MDD with the strongest, most extensive evidence base. For PTSD, the CPG authors identified trauma-focused cognitive behavioral therapy (TF-CBT) and stress inoculation training (SIT) as the two modalities of evidence-based psychotherapy. The strength of the evidence for all recommendations was graded an 'A' indicating that there is good evidence to support the claim that the intervention improved outcomes. The American Psychiatric Association practice guidelines recommend that CBT be considered a first line treatment option for both MDD and PTSD (American Psychiatric Association, 2004; Glenberg et al., 2010). Other appropriate treatments for PTSD included TF-CBT variants (e.g., EMDR, imagery rehearsal and imagery rehearsal) and stress inoculation. An Agency for Healthcare Research and Quality report on treatment for PTSD confirms these conclusions (Jonas et al., 2013). **Research Evidence** Although there is research evidence supporting the claim that psychotherapy is effective as the primary or adjunct treatment for PTSD, this indicator does not capture the type of psychotherapy offered (i.e., evidence-based or not). Further, the threshold for success on the measure is met after a single psychotherapy session, which is unlikely to be adequate to achieve a response. For this reason this indicator should be used descriptively only.
Feasibility	The numerator and denominator for this measure were calculated with administrative claims data making it very feasible to implement. Because of this study's focus on outpatient care, the definition of an NTE was limited to a new diagnosis at an outpatient visit. Therefore, patients whose NTE was initiated with a hospitalization were not included in the denominator for this measure.

Table A.14
PTSD-T9: Receipt of Care in First Eight Weeks

MEASURE SUMMARY		
Measure statement	Percentage of PTSD patients in a new treatment episode who received four psychotherapy visits or two evaluation and management visits within the first eight weeks	
Numerator	Patients in the denominator who receive four psychotherapy visits or two evaluation and management visits within eight weeks of a new treatment episode	
Denominator	Patients in a new treatment episode of PTSD	
Measure type	Process	
Care setting	Outpatient	
NUMERATOR SPECIFICATIONS		**Data Source**
Psychotherapy	See Outpatient Psychotherapy in Key Definitions. Measure assesses whether at least four psychotherapy visits occurred during the eight weeks following the NTE visit	CAPER, TED-NI

Table A.14—Continued

Outpatient E&M visit	See Outpatient Evaluation and Management Visit in Key Definitions. Measure assesses whether at least two E&M visits occurred during the eight weeks following the NTE visit. The E&M visit is used to approximate medication management visits, although this definition is likely to overestimate the actual number of medication related visits.	CAPER, TED-NI
DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with PTSD	See Table A.3.	CAPER, TED-NI, SIDR, TED-I
NTE	See New Treatment Episode – PTSD in Key Definitions	CAPER, TED-NI. SIDR, TED-I
Exclusions	Patient with an acute or nonacute hospital admission during the eight-week follow-up period either for a mental health or non-mental health reason. These patients are excluded from the measure because inpatient admission may prevent an outpatient follow-up visit from occurring.	SIDR, TED-I
MEASURE BACKGROUND		
Measure source	New measure	
Rationale for measure inclusion	**Source/Adaptation** This measure was developed for this project via a RAND consensus process involving five clinician researchers and quality measurement experts. It is designed to assess a minimally appropriate level of care for mental health patients entering a new treatment episode. **Guideline Support** **Research Evidence** The VA/DoD Clinical Practice Guidelines for MDD and PTSD do not state explicitly the minimum or optimal number of visits during the initial treatment period (VA and DoD, 2009a; VA and DoD, 2010b). However, the measure is consistent with a key element of the MDD guideline which states that "patients require frequent visits early in treatment to assess response to intervention, suicidal ideation, side effects, and psychosocial support systems (VA and DoD, 2009a). The number of psychotherapy visits (4) matches the shortest evidence-based intervention recommended in the PTSD clinical practice guideline (brief CBT for acute stress disorder (VA and DoD, 2010b). The definition is also consistent with the technical specifications used in the VA Mental Health Program Evaluation in which any eight week period with fewer than four psychotherapy visits was defined as a period in which the patient was *not* receiving psychotherapy (Horvitz-Lennon et al., 2009). Two medication management visits within eight weeks was selected as minimally appropriate follow-up because, in addition to the first visit to prescribe the new medication, a second visit would be needed to meet VA/DoD practice guidelines. These guidelines recommend that the dose be titrated at four to six weeks if symptoms are non-responsive, and that the prescription should be changed at eight to 12 weeks if the patient's symptoms remain non-responsive (VA and DoD, 2009a). If the four to six-week visit occurs on schedule with guidelines, the care would meet the threshold for this measure. Note that this measure provides a two-week buffer time period beyond CPG recommendations.	
Rationale for measure inclusion	We draw attention to the different time frames specified for this measure and the T6 measures. For medication management, this measure allows *eight weeks* in which to complete the second visit, while the T6 measures assess whether second visit occurred within *30 days*. The reason for this difference is this measure assesses the minimally appropriate level of care for mental health patients, while T6 sets a higher threshold for ideal care.	

Table A.14—Continued

Feasibility	The numerator and denominator for this measure were calculated with administrative claims data making it very feasible to implement. CAPER data revealed somewhat frequent provider use of the E&M code 99499 "Unlisted evaluation and management service" which is not included in the E&M visit definition used for this study. Frequent use of this CPT code in the absence of more specific codes may result in an increased likelihood of failing this quality measure where evaluation and management occurred but at a visit that was not more specifically coded to the level of its complexity. Because of this study's focus on outpatient care, the definition of an NTE was limited to a new diagnosis at an outpatient visit. Therefore, patients whose NTE was initiated with a hospitalization were not included in the denominator for this measure.

Table A.15
PTSD-T10: Response to Treatment at Six Months

MEASURE SUMMARY		
Measure statement	Percentage of PTSD patients with response to treatment at six months	
Numerator	Patients who have a documented reduction of five or more points on the PCL[a] within six months (+/- 30 days)	
Denominator	Patients with PTSD and a PCL score that is positive for PTSD (PCL score 44 or more)	
Measure type	Outcome	
Care setting	Outpatient	
NUMERATOR SPECIFICATIONS		**Data Source**
Five-or-more point reduction in PCL within six months	The PCL is a 17-item self-report measure of symptoms of PTSD (Blanchard et al., 1996). Slight variants of the scale exist, all of which are scored identically. The PCL-C is the general version (civilian), and scale items refer to a "stressful experience from the past." The PCL-M is the military version, and items refer to a "stressful military experience." The PCL-S (PCL—Specific) limits responses to one particular stressful event by requiring the respondent to nominate a single stressful event; subsequent items refer to "the stressful experience." A newer version of this tool, the PCL-5 is based on DSM-V criteria for PTSD. The current specifications do not include the use of the PCL-5.	AHLTA or BHDP[b]

Table A.15—Continued

Five-or-more point reduction in PCL within six months	Collect PCL scores from the time inclusion criteria of PTSD diagnosis and PCL score of 44 or more are met (which is the index or anchor date) until seven months have elapsed. Calculate a response rate (PCL score with a five-or-more point reduction) from the most recent PCL done in the 60-day window (six months +/- 30 days from the index date). Patients with no PCL administered during this window of time are included in the denominator as "no response." RESPECT-Mil total scale scores for the PCL (Oxman et al., 2008) are an algebraic transformation from the original Blanchard, Jones-Alexander, et al. (1996) PCL scoring. To convert RESPECT-Mil PCL thresholds to conventional scale scores, add 17 to the RESPECT-Mil PCL score. This is a new outcome measure and would require the development of a risk adjustment model.	AHLTA or BHDP[b]
DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with PTSD	See Table A.3. Because BHDP was the data source for the numerator, the denominator was limited to the Army and those receiving direct care only	CAPER, SIDR
PCL score of 44 or more	Patients with PTSD with a PCL score of 44 or more in the first five months of the 12-month measurement period. For NTEs starting in the first month of the first measurement period, include scores in the 30 days prior to the NTE date. RESPECT-Mil total scale scores for the PCL (Oxman et al., 2008) are an algebraic transformation from the original Blanchard, Jones-Alexander, et al. (1996) PCL scoring. To convert RESPECT-Mil PCL thresholds to conventional scale scores, add 17 to the RESPECT-Mil PCL score.	AHLTA or BHDP
	During the first five months of the 12-month measurement period, PTSD patient was either seen at an office visit or contacted via another method (phone: 99441, 99442, 99443; email: 99444). Encounter may have been a primary care or behavioral health outpatient visit, telephone or email contact associated with ICD-9 CM code 309.81. For primary care providers, the code may have been primary or secondary; for behavioral health providers, the code must have been primary.[c]	CAPER
	Behavioral health providers (any setting): Psychiatrist: 070, 071, 073, 076 Psychologist/psychoanalyst: 072, 702 Psychiatric nurse practitioner: 611 Clinical social worker: 703, 714 *Primary care providers (any setting):* Family practice physician: 000, 001, 003 Internal medicine physician: 008, 011, 028, 097–099 Geriatrician: 017 Primary care nurse practitioner: 604, 605	CAPER: Provider Specialty (PROVSPEC1)

Table A.15—Continued

PCL score of 44 or more	*Primary care providers in conjunction with specific setting:* Clinical Nurse-entry level nurse practitioner: 610 Physician assistant: 901 *In conjunction with:* Family practice clinic: AGA, AGZ, BGA, BGZ Internal medicine clinic: AAA, BAA Primary care clinic: BHA, BHZ	CAPER: Provider Specialty (PROVSPEC1); MEPRS code, 3rd level (MEPR3)
Exclusions	Exclusions included the following: • **Death** during the measurement time frame • **Permanent nursing home resident** during the measurement time frame. • **Hospice:** Enrolled in hospice during the measurement time frame. • **Personality Disorder**[d] (in any position) during the measurement time frame: 301.0 Paranoid personality disorder 301.1 Affective personality disorder 301.10 Affective personality disorder unspecified 301.11 Chronic hypomanic personality disorder 301.12 Chronic depressive personality disorder 301.13 Cyclothymic disorder 301.2 Schizoid personality disorder 301.20 Schizoid personality disorder unspecified 301.21 Introverted personality 301.22 Schizotypal personality disorder 301.3 Explosive personality disorder 301.4 Obsessive-compulsive personality disorder 301.5 Histrionic personality disorder 301.50 Histrionic personality disorder unspecified 301.51 Chronic factitious illness with physical symptoms 301.59 Other histrionic personality disorder 301.6 Dependent personality disorder 301.7 Antisocial personality disorder 301.8 Other personality disorders 301.81 Narcissistic personality disorder 301.82 Avoidant personality disorder 301.83 Borderline personality disorder 301.84 Passive-aggressive personality 301.89 Other personality disorders 301.9 Unspecified personality disorder	

Table A.15—Continued

MEASURE BACKGROUND	
Measure source	Adapted from the following: Farmer, Carrie M., Katherine E. Watkins, Brad Smith, Susan M. Paddock, Abigail Woodroffe, Jacob Solomon, Melony E. Sorbero, Kimberly A. Hepner, Lanna Forrest, Lisa R. Shugarman, Cathy Call, and Harold A. Pincus, *Program Evaluation of VHA Mental Health Services: Medical Record Review Report*, Alexandria, Va.: Altarum Institute and RAND–University of Pittsburgh Health Institute, 2010. National Quality Forum, "NQF #1884 Depression Response at 6 Months—Progress Towards Remission," last updated March 4, 2014c. As of March 1, 2015: http://www.qualityforum.org/QPS/1884 Oxman, Thomas E., Allen J. Dietrich, John W. Williams Jr., Charles C. Engel, Mathew Friedman, Paula Schnurr, Stanley Rosenberg, and Sheila L. Barry, *RESPECT-Mil Primary Care Clinician's Manual: Three Component Model for Primary Care Management of Depression and PTSD (Military Version)*, 3CM, August 2008. As of May 12, 2014: http://www.pdhealth.mil/respect-mil/downloads/PCC_Final.pdf
Rationale for measure inclusion	**Source/Adaptation** This measure is based on an indicator developed for the VHA Mental Health Program Evaluation (Farmer et al., 2010; Watkins et al., 2011). At the time of the VHA program evaluation; there were no existing performance indicators to measure this component of quality mental health care. However, clinical experts in PTSD and in general mental health care, both internal and external to the VHA, endorsed the newly developed indicator of symptom improvement as being high-priority, relevant, useful, and meaningful within the VA system (Farmer et al., 2010). Note that an important caveat of this measure is that it can be reliably and validly derived only if the PCL is regularly administered to patients with PTSD. This measure is also related to a NQF-endorsed measure for monitoring MDD response to treatment (progress toward remission) within six months based on changes in PHQ-9 scores. Also, influencing the adaptation of these measures is the use of the PCL in the Re-Engineering Systems of Primary Care Treatment in the Military (RESPECT-Mil) program to monitor response to treatment (Oxman et al., 2008). In this program, the measure of response included an additional item to the PCL that addressed functional status. Functioning is not included in these measures because it is addressed in a separate measure using a validated measure of functioning. Given that this is an outcome measure, it is important to consider case-mix adjustment when comparing results. PCL scores can be stratified by baseline score. Other potential risk-adjustment variables include gender, ZIP Code, race and ethnicity, country of origin, and primary language. **Guideline Support** It is unclear to what extent the PCL is currently regularly administered across MHS facilities. However, *VA/DoD Clinical Practice Guideline for Management of Post-Traumatic Stress* (VA and DoD, 2010b) does specify that providers should assess PTSD symptoms during each visit. Although the authors of the guidelines make no requirement that a validated symptom measure be employed for this purpose, they do suggest that a measure, such as the PCL, be considered by clinicians. Moreover, the guideline authors specify that a more comprehensive reassessment and evaluation of progress should be completed at least every 90 days and that this reassessment should include a standardized measure of PTSD symptoms, such as the PCL (VA and DoD, 2010b). Thus, during the six-month follow-up period included in one of these quality measures, guideline-consistent care would include at least two comprehensive symptom assessments.

Table A.15—Continued

Rationale for measure inclusion	**Research Evidence** For a variety of reasons, we recommend that the PCL (Blanchard et al., 1996) be the standardized measurement tool for this purpose. First, the PCL has been validated with active-duty service members (Bliese et al., 2008). Importantly, the psychometric properties of the PCL are strong, with good internal consistency (α = 0.94–0.97) and reliable scale scores across short test-retest periods (r = 0.88–0.96) (Blanchard et al., 1996; Ruggiero et al., 2003; Weathers et al., 1993). Note that long-measurement-period reliability is neither expected nor desirable for a measure designed to be sensitive to symptom change over time. In fact, to the contrary, it is important to establish that measures employed for this purpose are sensitive to symptom change in response to treatment—a criterion passed by the PCL (Monson et al., 2008). Validity of the PCL as an indicator of DSM-IV diagnosis and symptom strength is strong, with the PCL being nearly collinear (r = 0.93) with CAPS, the gold-standard measure for psychiatric diagnosis (Blanchard et al., 1996). Moreover, there is good convergent validity with other validated measures of PTSD (r = 0.77–0.93) (Blanchard et al., 1996; Weathers et al., 1993). Investigators active in PCL refinement recommend that reductions in scale scores of 10 to 20 be considered clinically meaningful change and that reductions of five to ten points be considered reliable changes (Monson et al., 2008). We selected the minimum five-point threshold for this measure for two reasons. First, it is the threshold used to assess initial response to treatment in the RESPECT-Mil protocol for primary care management of PTSD (Oxman et al., 2008). Although this protocol is designed to assess initial response (after six weeks of care), we maintained the threshold here as a *minimum* standard of care. As treatment facilities are able to maximize performance on this achievable aim, administrators may wish to set new goals for treatment success. The recommended threshold for identifying a case as a probable PTSD case in a specialty mental health clinic is 45 to 50 (National Center for PTSD, 2012). The recommended cutoff identified by the scale author (50) (Weathers et al., 1993) is associated with good sensitivity (0.78–0.82) and specificity (0.83–0.86) (Blanchard et al., 1996). In a small sample of motor vehicle accident victims, lowering the cutoff to 44 was associated with improved sensitivity (0.94), similar specificity (0.86), and strong diagnostic efficiency (0.90) (Blanchard et al., 1996). Thresholds to identify PTSD in primary care settings, in which the prevalence of PTSD is much lower, are shifted downward to improve identification (under the assumption that a thorough assessment would occur after the screening). The recommended threshold for identifying possible PTSD in these settings is 30 for both civilians and active-duty service members (Blanchard et al., 1996; Bliese et al., 2008; National Center for PTSD, 2012; Oxman et al., 2008). Quality measures PTSD-T10 and T12 are new and there are arguments for various PCL score cut points to define the denominators. The cut point may be lower in a primary care population to improve case identification versus in behavioral health care. We selected a score of 44 for a broader application of the measure (primary care and behavioral health). Of note is the fact that the diagnostic criteria for PTSD were updated in the 2013 DSM-V (American Psychiatric Association, 2013). A revised version of the PCL (PCL-5) reflects these changes.(Weathers et al., 2013) It will be important to track the use of this instrument and the need to update items or scoring protocols.
Feasibility	The denominator for this measure (patients with PTSD) was partially calculated from administrative claims data. However, the assessment of PTSD symptoms using the PCL was retrieved from the BHDP, but could also have been collected from the medical record. These data sources are also required to access the subsequent PCL score at six months after the triggering score.

[a] PCL = PCL-C, PCL-M, or PCL-S or RESPECT Mil PCL with appropriate score modification.

[b] The intended data source had been AHLTA, but was changed to BHDP due to the need to shorten the medical record abstraction process of this study.

[c] Because BHDP was the data source and its use was limited at the time of data collection, encounters for this study were limited to those with a behavioral health provider and who received direct care only.

[d] Note that while the Depression-T10 measure excludes service members with bipolar disorder from the denominator, the PTSD-T10 measure does not exclude these cases.

Table A.16
PTSD-T12: Remission at Six Months

MEASURE SUMMARY	
Measure statement	Percentage of PTSD patients in remission at six months
Numerator	Patients with a PCL score indicative of PTSD remission (PCL[a] score less than 28) within six months
Denominator	Patients with PTSD and a PCL score that is positive for PTSD (PCL score 44 or more)
Measure type	Outcome
Care setting	Outpatient

NUMERATOR SPECIFICATIONS		Data Source
PCL score less than 28 within six months	The PCL is a 17-item self-report measure of symptoms of PTSD (Blanchard et al., 1996). Slight variants of the scale exist, all of which are scored identically. The PCL-C is the general version (civilian), and scale items refer to a "stressful experience from the past." The PCL-M is the military version, and items refer to a "stressful military experience." The PCL-S (PCL—Specific) limits responses to one particular stressful event by requiring the respondent to nominate a single stressful event; subsequent items refer to "the stressful experience." A newer version of this tool, the PCL-5 is based on DSM-V criteria for PTSD (Weathers et al., 2013). Collect PCL scores from the time inclusion criteria of PTSD diagnosis and PCL score of 44 or more are met (which is the index or anchor date) until seven months have elapsed. Calculate a remission rate (PCL score less than 28) from the most recent PCL done in the 60-day window (six months +/- 30 days from the index date). Patients with no PCL administered during this window of time are included in the denominator as "not in remission." RESPECT-Mil total scale scores for the PCL (Oxman et al., 2008) are an algebraic transformation from the original Blanchard, Jones-Alexander, et al. (1996) PCL scoring. To convert RESPECT-Mil PCL thresholds to conventional scale scores, add 17 to the RESPECT-Mil PCL score. This is a new outcome measure and would require the development of a risk adjustment model.	AHLTA or BHDP[b]

DENOMINATOR SPECIFICATIONS		Data Source
Patients with PTSD	See Table A.3. Because BHDP was the data source for the numerator; the denominator was limited to the Army and those receiving direct care only.	CAPER, SIDR
PCL score of 44 or more	Patients with PTSD with a PCL score of 44 in the first five months of the 12-month measurement period. For NTEs starting in the first month of the first measurement period, include scores in the 30 days prior to the NTE date.	AHLTA or BHDP

Table A.16—Continued

	During the first five months of the 12-month measurement period, PTSD patient was either seen at an office visit or contacted via another method (phone: 99441, 99442, 99443; email: 99444), Encounter may have been a primary care or behavioral health outpatient visit, telephone or email contact associated with ICD-9 CM code 309.81. For primary care providers, the code may have been primary or secondary; for behavioral health providers, the code must have been primary.[c]	CAPER
	Behavioral health providers (any setting): Psychiatrist: 070, 071, 073, 076 Psychologist/psychoanalyst: 072, 702 Psychiatric nurse practitioner: 611 Clinical social worker: 703, 714 *Primary care providers (any setting):* Family practice physician: 000, 001, 003 Internal medicine physician: 008, 011, 028, 097–099 Geriatrician: 017 Primary care nurse practitioner: 604, 605	CAPER: Provider Specialty (PROVSPEC1)
	Primary care providers in conjunction with specific setting: Clinical Nurse-entry level nurse practitioner: 610 Physician assistant: 901 *In conjunction with:* Family practice clinic: AGA, AGZ, BGA, BGZ Internal medicine clinic: AAA, BAA Primary care clinic: BHA, BHZ	CAPER: Provider Specialty (PROVSPEC1); MEPRS code, 3rd level (MEPR3)
Exclusions	Exclusions included the following: • **Death** during the measurement time frame • **Permanent nursing home resident** during the measurement time frame. • **Hospice:** Enrolled in hospice during the measurement time frame.	

Table A.16—Continued

Exclusions	• **Personality Disorder**[d] (in any position) during the measurement time frame: 301.0 Paranoid personality disorder 301.1 Affective personality disorder 301.10 Affective personality disorder unspecified 301.11 Chronic hypomanic personality disorder 301.12 Chronic depressive personality disorder 301.13 Cyclothymic disorder 301.2 Schizoid personality disorder 301.20 Schizoid personality disorder unspecified 301.21 Introverted personality 301.22 Schizotypal personality disorder 301.3 Explosive personality disorder 301.4 Obsessive-compulsive personality disorder 301.5 Histrionic personality disorder 301.50 Histrionic personality disorder unspecified 301.51 Chronic factitious illness with physical symptoms 301.59 Other histrionic personality disorder 301.6 Dependent personality disorder 301.7 Antisocial personality disorder 301.8 Other personality disorders 301.81 Narcissistic personality disorder 301.82 Avoidant personality disorder 301.83 Borderline personality disorder 301.84 Passive-aggressive personality 301.89 Other personality disorders 301.9 Unspecified personality disorder
MEASURE BACKGROUND	
Measure source	Adapted from the following: National Quality Forum, "NQF #0711 Depression Remission at 6 Months," last updated March 6, 2015a. As of March 18, 2015: http://www.qualityforum.org/QPS/0711 Oxman, Thomas E., Allen J. Dietrich, John W. Williams Jr., Charles C. Engel, Mathew Friedman, Paula Schnurr, Stanley Rosenberg, and Sheila L. Barry, *RESPECT-Mil Primary Care Clinician's Manual: Three Component Model for Primary Care Management of Depression and PTSD (Military Version)*, 3CM, August 2008. As of May 12, 2014: http://www.pdhealth.mil/respect-mil/downloads/PCC_Final.pdf
Rationale for measure inclusion	**Guideline Support** *VA/DoD Clinical Practice Guideline for Management of Post-Traumatic Stress* (VA and DoD, 2010b) specifies that providers should assess PTSD symptoms during each visit. Although the authors of the guidelines make no requirement that a validated symptom measure be employed for this purpose, they do suggest that an outcome measure, such as the PCL, be considered by clinicians. Moreover, the guideline authors specify that a more comprehensive reassessment and evaluation of progress should be completed every 90 days at minimum and that this reassessment should include a standardized measure of PTSD symptoms, such as the PCL (VA and DoD, 2010b). Thus, during the six-month follow-up period included in this quality measure, guideline-consistent care would include at least two comprehensive, quantitative symptom assessments.

Table A.16—Continued

Rationale for measure inclusion	**Research Evidence** For a variety of reasons, we recommend that the PCL (Blanchard et al., 1996) be the standardized measurement tool for this purpose. First, the PCL has been validated with active-duty service members (Bliese et al., 2008). Importantly, the psychometric properties of the PCL are strong, with good internal consistency (α = 0.94–0.97) and reliable scale scores across short test-retest periods (r = 0.88–0.96) (Blanchard et al., 1996; Ruggiero et al., 2003; Weathers et al., 1993). Note that long-measurement-period reliability is neither expected nor desirable for a measure designed to be sensitive to symptom change over time. In fact, to the contrary, it is important to establish that measures employed for this purpose are sensitive to symptom change in response to treatment—a criterion passed by the PCL (Monson et al., 2008). Validity of the PCL as an indicator of DSM-IV diagnosis and symptom strength is strong, with the PCL being nearly collinear (r = 0.93) with CAPS, the gold-standard measure for psychiatric diagnosis (Blanchard et al., 1996). Moreover, there is good convergent validity with other validated measures of PTSD (r = 0.77–0.93) (Blanchard et al., 1996; Weathers et al., 1993). Quality measures PTSD-T10 and T12 are new and there are arguments for various PCL score cut points to define the denominators. The cut point may be lower in a primary care population to improve case identification versus. in behavioral health care. We selected a score of 44 for a broader application of the measure (primary care and behavioral health). Of note is the fact that the diagnostic criteria for PTSD were updated in the 2013 DSM-V (American Psychiatric Association, 2013). A revised version of the PCL (PCL-5) reflects these changes (Weathers et al., 2013). It will be important to track the use of this instrument and the need to update items or scoring protocols.
Feasibility	The denominator for this measure (patients with PTSD) was partially calculated from administrative claims data. However, the assessment of PTSD symptoms using the PCL was retrieved from the BHDP, but could also have been collected from the medical record. These data sources are also required to access the subsequent PCL score at six months after the triggering score.

[a] PCL = PCL-C, PCL-M, or PCL-S or RESPECT Mil PCL with appropriate score modification.

[b] The intended data source had been AHLTA, but was changed to BHDP due to the need to shorten the medical record abstraction process of this study.

[c] Because BHDP was the data source and its use was limited at the time of data collection, encounters for this study were limited to those with a behavioral health provider and who received direct care only.

[d] Note that while the Depression T12 measure excludes service members with bipolar disorder from the denominator, the PTSD T12 measure does not exclude these cases.

Table A.17
PTSD-T14: Improvement in Functional Status

MEASURE SUMMARY		
Measure statement	Percentage of PTSD patients in a new treatment episode with improvement in functional status at six months	
Numerator	Patients in the denominator with an improvement in functional status from their first visit for PTSD to six months after the first visit	
Denominator	Patients with a new treatment episode of PTSD and who have at least two measures of functional status during the first six months of the new treatment episode	
Measure type	Outcome	
Care setting	Outpatient	
NUMERATOR SPECIFICATIONS		**Data Source**
Improvement in functional status	Measurement of change in function requires the repeated use of the same standardized tool first at the start of an NTE and repeated use during subsequent treatment. Since no specific standardized tool for measuring function has been recommended for use in the MHS, the application of this measure was limited to summarizing the use of any standardized tool to measure baseline function at the same visit or in the 30 days before or 30 days after the start of an NTE.	AHLTA
DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with PTSD	See Table A.3.	CAPER, SIDR
NTE	See New Treatment Episode-PTSD in Key Definitions. The NTE was defined from administrative data. Abstractors confirmed the NTE and NTE date based on information in the medical record. A correction to the NTE date was allowed by the abstractor, if applicable. NTEs are limited to those cases diagnosed in the outpatient setting.	CAPER, SIDR, PDTS, AHLTA
Measure of functional status	The use of a standardized tool to measure function, including but not limited to the following: • Brief Resilience Scale (Smith et al., 2008) • CDC HRQOL-4 (Healthy Days) (Moriarty, Zack and Kobau, 2003) • Sheehan Disability Scale (SDS) (Sheehan, Harnett-Sheehan and Raj, 1996) • Global Quality of Life (Hyland and Sodergren, 1996) • WHO Disability Assessment Scale (WHODAS) (Garin et al., 2010) • Schwartz Outcomes Scale-10 (SOS-10) (Blais et al., 1999) • Illness Management and Recovery (IMR) Scale (Sklar et al., 2012)	
Exclusions	None	

Table A.17—Continued

MEASURE BACKGROUND	
Measure source	Adapted from the following: Post-Deployment Health Guideline Expert Panel, *Recommendations for Monitoring Metrics: DoD/VA Practice Guideline for Post-Deployment Health Evaluation and Management*, July 6, 2001. As of September 13, 2013: http://www.pdhealth.mil/guidelines/downloads/view/3/2_recommendations_for_metrics.pdf
Rationale for measure inclusion	**Source/Adaptation** **Guideline Support** **Research Evidence** General functioning or health-related quality of life (HRQOL) is widely recognized as an important outcome (Moriarty, Zack and Kobau, 2003). In fact, it can be thought of as the complement to symptom-reduction or disease-remission measures, which is consistent with the World Health Organization's definition of health as "a state of complete physical, mental and social well-being—not merely the absence of disease or infirmity" (World Health Organization, 1948). The post deployment measure on which this measure is based did not specify the instrument to be used to measure change in function. Clinicians and researchers who wish to track patient functioning over time and in response to treatment have a variety of functioning measures from which to choose. However, many of these measures are lengthy (e.g., SF-36; (McHorney, Ware Jr. and Raczek, 1993), and some of the most popular short measures (e.g., Sheehan Disability Scale [SDS] (Sheehan, Harnett-Sheehan and Raj, 1996), [European Quality of Life – 5 Dimensions [EQ-5D] (Rabin and Charro, 2001) are associated with licensing fees. The Centers for Disease Control and Prevention (CDC) four-item HRQOL Healthy Days instrument (HRQOL-4) (Centers for Disease Control and Prevention, 2000) is one good option that balances the need for a validated instrument of functioning with a preference for a brief and no-cost instrument. The CDC HRQOL-4 is a four-item measure that includes a global assessment of self-reported health ("Would you say that your general health is: Excellent, Very Good, Good, Fair, or Poor?"). Two questions assess the number of days during the past 30 days on which the respondent's (1) physical health and (2) mental health were not good. The sum of these two items is known as the Unhealthy Days measure. The final item asks the respondent to estimate the number of days on which poor physical or mental health kept him or her from engaging in his or her typical daily activities. The CDC HRQOL-4 has been widely used in population-based public health surveys, such as the state-based Behavioral Risk Factor Surveillance System (BRFSS) (Nelson et al., 2000), the National Health and Nutrition Examination Survey (NHANES) (Centers for Disease Control and Prevention, 2013b), and the Medicare Health Outcomes Survey (HOS) (National Committee for Quality Assurance, 2013b). Benchmarking data for comparisons with state and national samples are available on the CDC HRQOL website (Centers for Disease Control and Prevention, 2013a). The test-retest reliabilities of measure items are moderate (intraclass correlation coefficient [ICC] = 0.57–0.75) (Andresen et al., 2003). Note that strong test-retest reliability is neither expected nor desired in measures that are designed to be sensitive to clinical change over time. In fact, to the contrary, it is important to establish that measures employed as indicators of treatment outcome are sensitive to change in response to treatment. This criterion is met by the CDC HRQOL-4. Moriarty, Zack, and Kobau (2003) observe that the "number of days in the past 30 days" response format of the Healthy Days measures makes them particularly well suited to respond to short-term changes. The measure is responsive to seasonal effects on populations (Moriarty, Zack and Kobau, 2003) and shifts in medical utilization (Albert, 2000). Concurrent validity of the measure has been established via strong correlations between the CDC HRQOL-4 and established measures of functioning, such as the SF-36 and EQ-5D (Andresen et al., 1999; Jia et al., 2011; Newschaffer, 1998). The measure has also been shown to distinguish between known disease groups (Currey et al., 2003).

Table A.17—Continued

Rationale for measure inclusion	Although the CDC HRQOL instrument has been used as a population health surveillance measure, to our knowledge, it has not been implemented as part of a quality measure. The validity of its use for this purpose will require pilot-testing. Additional work will also be necessary to determine the degree of improvement that must be observed before confirming that a patient has met the threshold to be classified as "improved" on the domain of functional status. That is, how many additional healthy days are required in order for a patient to be classified as improved? In the absence of this important information about change thresholds, investigators may wish to benchmark final scores against a population norm instead. For example, CDC reported that the average number of unhealthy days per month across the U.S. population is 6.0 (Zack et al., 2004). As expected, individuals with medical conditions report more unhealthy days. For example, on average, patients with diabetes report 8.6 unhealthy days per month, patients with asthma report 11.1 unhealthy days per month, and patients with liver conditions report 14.5 unhealthy days per month (Zahran et al., 2005). Of course, it would be most useful to benchmark against the number of unhealthy days reported by patients with active PTSD or MDD. Research in this area is limited, but, in a sample of Los Angeles County residents, those with depression reported an average of 20.1 unhealthy days (Shih and Simon, 2008). Because this is an outcome measure, adjustment for case mix is important to consider when evaluating outcomes in patient populations. Without case-mix adjustment, the sicker patients who generally receive more care and often have worse outcomes may distort the relationship between process and outcomes such that better care appears to worsen results
Feasibility	The denominator for this measure as applied here (baseline assessment of a new treatment episode for PTSD) was calculated from administrative data. However, the use of a standardized tool to assess function required medical record review. This study revealed almost no use of a standardized tool at baseline. Increased feasibility would be possible if a single standardized tool to measure function was recommended for routine use in the MHS and score results incorporated into an accessible data set, such as the BHDP.

Table A.18
PTSD-T15: Follow-Up After Hospitalization for Mental Illness

MEASURE SUMMARY	
Measure statement	Percentage of psychiatric inpatient hospital discharges of patients with PTSD with follow-up: T15a: Within seven days of discharge T15b: Within 30 days of discharge
Numerator	Inpatient discharges in the denominator where the inpatient discharge was followed with an outpatient visit, intensive outpatient encounter, or partial hospitalization with a mental health practitioner: T15a: Within seven days of discharge T15b: Within 30 days of discharge
Denominator	Patients with PTSD discharged from an acute inpatient setting with primary mental health diagnosis
Measure type	Process
Care setting	Outpatient

Table A.18—Continued

NUMERATOR SPECIFICATIONS		Data Source
Follow-up	Rate 1: An outpatient visit, intensive outpatient encounter or partial hospitalization with a mental health practitioner or transitional care management service within seven days after discharge. Include outpatient visits, intensive outpatient encounters or partial hospitalizations that occur on the date of discharge. Rate 2: An outpatient visit, intensive outpatient encounter or partial hospitalization with a mental health practitioner or transitional care management service within 30 days after discharge. Include outpatient visits, intensive outpatient encounters or partial hospitalizations that occur on the date of discharge. **CPT Codes to Identify Outpatient Visit Type** • Outpatient psychotherapy: 90804–90815 • Education for self-management: 98960–98962 • Group education: 99078 • Outpatient E&M: 99201–99205, 99211–99215, 99217–99220 • Outpatient consultation: 99241–99245 • Home visit: 99341–99345, 99347–99350, 99510 • Preventive medicine: 99383–99387, 99394–99397, 99401–99404, 99411, 99412 **HCPCS:** • Social work, activity therapy, self-care education, group therapy: G0155, G0176, G0177, G0409-G0411 • Behavioral health counseling, medication training, partial hospitalization/ community treatment, rehabilitation and community support: H0002, H0004, H0031, H0034–H0037, H0039, H0040, H2000, H2001, H2010–H2020 • Mental health medication management: M0064 • Partial hospitalization, intensive outpatient psychiatric treatment, crisis intervention: S0201, S9480, S9484, S9485 **CPT codes and place of service (POS)** • Psychiatric diagnostic: 90801, 90802 **2013:** 90791, 90792 • Psychotherapy and crisis (2013): 90832–90834, 90836–90840 • Inpatient/partial hospitalization psychotherapy: 90816–90819, 90821–90824, 90826–90829 • Psychoanalysis: 90845 • Family/group: 90847, 90849, 90853, 90857 • Medication management: 90862, **2013:** +90863[a]	CAPER, TED-NI, SIDR, TED-I

Table A.18—Continued

Follow-up	• Electroconvulsive therapy (ECT): 90870 • Biofeedback: 90875, 90876 • Inpatient E&M: 99221–99223 Subsequent hospital care: 99231–99233, 99238, 99239 • Inpatient consultation: 99251–99255 **WITH outpatient POS:** Above CPT-related encounter was attached to an outpatient visit **other than** emergency department. **Transitional care management (TCM) services:** TCM where the date of service on the claim is 29 days after the date the patient was discharged with a principal diagnosis of mental illness. • **Applies to seven- and 30-day scores:** 99496, face-to-face contact within seven days • **Applies to 30-day score:** 99495, face-to-face contact within 14 days Note: Transitional care management is a 30-day period that begins on the date of discharge and continues for the next 29 days. The date of service on the claim is 29 days after discharge and not the date of the face-to-face visit.	CAPER, TED-NI, SIDR, TED-I
Mental health practitioner	**CAPER:** Psychiatrist: 070, 071, 073, 076 Psychologist/Psychoanalyst: 072, 702 Psychiatric Nurse Practitioner: 611 Clinical Social Worker: 703, 714	CAPER: Provider Specialty (PROVSPEC1)
	TED-NI: Psychiatrist: 26 Psychologist: 62 Clinical Psychiatric Nurse Specialist: 91 Clinical Social Worker: 85 Certified Marriage and Family Therapist: 94	TED-NI: Provider Specialty (PROVSPEC)

DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with PTSD	See Table A.3.	CAPER, TED-NI, SIDR, TED-I
Primary mental health illness	Inpatient primary discharge diagnosis as defined by ICD-9-CM diagnosis codes: 295.xx–299.xx, 300.3, 300.4, 301.xx, 308.x, 309.xx, 311–314.xx.	SIDR, TED-I

Table A.18—Continued

Inpatient discharge	Discharge from an acute inpatient setting during the first 11 months of the measurement year. Unit of measurement is admissions rather than members. Include all discharges for members who have more than one discharge in the first 11 months of the measurement year. If the discharge is followed by readmission or direct transfer to an acute facility for a primary mental health diagnosis (290.xx, 293.xx–302.xx, 306.xx–316) and within the 30-day period, count only the readmission discharge or the discharge from the facility to which the member was transferred. Although re-hospitalization might not be for a selected mental health disorder, it is probably for a related condition.	SIDR, TED-I
Exclusions	*Late in the measurement year:* Both the initial discharge and readmission/direct transfer discharge if the readmission/direct transfer discharge occurred in month 12 of the measurement year. *Non-acute facility, mental health:* Discharges followed by readmission or direct transfer to a *nonacute* facility for any primary mental health diagnosis (290.xx, 293.xx–302.xx, 306.xx–316) within the 30-day follow-up period. These discharges are excluded from the measure because readmission or transfer may prevent an outpatient follow-up visit from taking place *Acute or nonacute facility, non–mental health:* Discharges in which the patient transferred directly or readmitted within 30 days of discharge to an acute or nonacute facility for a non–mental health primary diagnosis. These discharges are excluded from the measure because readmission or transfer may prevent an outpatient follow-up visit from occurring.	SIDR, TED-I
Nonacute care		SIDR, TED-I, TED-NI
	TED-I: Rehabilitation: 46, 48, 56, 82 Home health care: 70 Skilled nursing facility: 76 Residential/extended care facility: 72, 73 Hospice, 78, 79 Substance use disorders rehabilitation facility: 82 Ambulatory surgery: 75, 92	TED-I: Type of Institution (INSTTYPE)
	TED-NI: Skilled nursing facility: 31 Nursing facility: 32 Hospice: 34 Intermediate care facility: 54 Residential substance abuse treatment facility: 55 Psychiatric residential treatment center; 56 Comprehensive inpatient rehabilitation facility: 61	TED-NI: Place of Service (PLACE)
	HCPCS: Behavioral health, residential: H0017, H0018, H0019, T2048	TED-NI CPT codes

Table A.18—Continued

Transfer		SIDR, TED-I
	SIDR: ***Acute (or not specified) transfer:*** 21 = Transferred to Army MTF; 22 = Transferred to Navy MTF; 23 = Transferred to Air Force MTF; 24 = Discharged to another federal facility; 26 = Discharged to civilian acute care (non-AD) ***Nonacute transfer:*** 27 = Discharged to skilled civilian nursing facility (non-AD); 28 = Discharged to civilian intermediate care facility (non-AD)	SIDR: Disposition Type (DISPTYPE)
	TED-I: ***Acute (or not specified) transfer:*** 02 = Transferred; 05 = Discharged/transferred to another type of institution; 43 = Discharged/transferred to a federal hospital; 65 = Discharged/transferred to a psychiatric hospital; 66 = Discharged/transferred to a critical access hospital; 70 = Discharged/transferred to another type of health care institution not elsewhere defined ***Nonacute transfer:*** 03 = Discharged/transferred to a skilled nursing facility (SNF); 04 = Discharged/transferred to an intermediate care facility (ICF); 51 = Discharged to hospice-medical facility; 61 = Discharged/transferred within this institution to hosp-based Medicare apprvd swing-bed; 62 = Discharged/transferred to another rehab facility; 63 = Discharged/transferred to a long term care hospital; 64 = Discharged/transferred to a nursing facility	TED-I: Disposition Status (DISPSTAT)

MEASURE BACKGROUND	
Measure source	National Quality Forum, "NQF #0576 Follow-Up after Hospitalization for Mental Illness," Last Updated: January 6, 2014. As of July 30, 2014: http://www.qualityforum.org/QPS/0576 National Committee for Quality Assurance, HEDIS 2013. As of April 15, 2013: http://www.ncqa.org/HEDISQualityMeasurement/HEDISMeasures/HEDIS2013.aspx

Table A.18—Continued

Rationale for measure inclusion	**Source/Adaptation** This is an NQF-endorsed measure developed by the National Committee for Quality Assurance (National Quality Forum, 2013) and included in the Healthcare Effectiveness Data & Information Set (HEDIS) 2013 (National Committee for Quality Assurance, 2013a). NCQA states in its rationale statement: "as treatment of mentally ill patients continues to shift from inpatient to outpatient settings, coordinating and maintaining continuity of care are important aspects of health care quality. There are several clinical reasons for ensuring adequate and timely follow-up care for patients after discharge from an institution or hospital for mental illness: • Preventing readmission • Keeping track of those who will eventually require readmission • Providing transitional care from inpatient to outpatient setting." **Guideline Support** The care continuity targeted by this measure is not specifically included in the 2010 *VA/DoD Clinical Practice Guideline for PTSD* (2010b). However, the guideline does make references to the potential use of case management to coordinate and increase continuity of care (Rosen et al., 2006). The 2009 *VA/DoD Clinical Practice Guideline for MDD* (2009a) also recommends the use of a case manager to coordinate communication between primary and mental health care specialists as one component of case management (Bower et al., 2006; Gilbody et al., 2006; Williams et al., 2007). This measure has face validity, and it is the standard of care to provide patients with adequate follow-up after an inpatient psychiatric stay. Furthermore, this indicator is an industry standard measure, as indicated by its inclusion in HEDIS. **Research Evidence** It is important to provide regular follow-up therapy to patients after they have been hospitalized for mental illness. An outpatient visit with a mental health practitioner after discharge is recommended to ensure that the patient's transition to the home and work environment is supported and that gains made during hospitalization are not lost. It also helps health care providers to detect problems early and provide continuing care. Missed appointments increase the likelihood of re-hospitalization and increase the cost of outpatient care (Mitchell and Selmes, 2007). In terms of clinical characteristics, individuals with a co-occurring serious mental illness and a substance use disorder have high rates of treatment disengagement, as do individuals with higher levels of psychopathology (Kreyenbuhl, Nossel and Dixon, 2009). Disengagement from mental health services can be a significant problem that can lead to exacerbation of psychiatric symptoms, repeated hospitalizations, first episode or recurrent homelessness, violence against others, and suicide (Dixon et al., 2009; Fischer et al., 2008). Communication between inpatient and outpatient clinicians is an intervention associated with improved odds of a successful linkage to post-discharge outpatient care (Boyer et al., 2000).
Feasibility	The numerator and denominator for this measure were calculated with administrative claims data making it very feasible to implement. This score was computed based on administrative data from SIDR and TED-I. However, identifying and summarizing separate inpatient stays from these data proved to be challenging. For example, a disposition status of "still a patient (interim billing)" was followed with a line with a "new" (next day) admission date. An attempt was made to reconcile such cases (this example was assumed to be a continuing stay rather than a new admission given the coded status). Other cases, for example with a status of "discharge" or "return to active duty" with a next-day admission were assumed to be a new inpatient stay. (See the Appendix of the Phase I report (Hepner et al., 2016) for details of the assumptions used to process these data for analysis.) However, this measure focuses on the last readmission discharge in 30 days, if applicable; difficulty distinguishing between a continued stay and an immediate readmission would not have a significant effect since the last readmission discharge is the discharge of interest.

[a] Code +90863 (Pharmacologic management, including prescription and review of medication, when performed with psychotherapy services [for providers who may not report E&M codes]) is not included in the 2014 updated definition of the numerator for NQF #0576. However, it has been included in this study due to the common use of prescribing clinical psychologists in MTFs.

APPENDIX B

Technical Specifications for Quality Measures for Depression

This appendix provides technical specifications for the implementation of the administrative data and/or medical record review data–based depression quality measures described in the body of this report. It is divided into the following sections:

1. *Diagnostic Cohort, Medical Record, and Symptom Questionnaire Samples*: This section describes the eligibility criteria for inclusion used to place service members in the depression cohort and the rules used to select the medical record review sample. This cohort formed the population whose care was evaluated during the 12 months after entry into the diagnostic cohort. The entire cohort was eligible for quality measures based on administrative data. For the medical-record based measures, the eligible population was limited to those in the cohort who received all of their care at the MTFs. This limitation was required as the only medical record documentation that was accessible for the study was that documenting direct care. Based on the nature of the medical record-based quality measures, the source of data for these measures was limited to outpatient direct care.
2. *Key Definitions*: This section describes the technical specifications for key definitions that are frequently referenced throughout this appendix. These definitions include qualifying notes where applicable.
3. *Quality Measures for Depression*: These sections describe the technical specifications for each depression quality measure, including the following:
    a. Measure Summary—measure statement, numerator, denominator, measure type (e.g., process, outcome), and care setting (e.g., outpatient).
    b. Numerator Specifications—definitions of variables used in the numerator and relevant data sources.
    c. Denominator Specifications—definitions of variables used in the denominator, relevant data sources, and denominator exclusions, if applicable.
    d. Measure Background—source of the measure, any adaptation to the measure that was made by the project team in implementation, clinical practice guideline support for the measure, existing research evidence behind the measure, and feasibility of measure implementation.

The study population includes service members only and excludes their spouses, and other dependents, retirees, and their dependents. The rules applied for ensuring that patients in the cohort were engaged in care with the MHS match those applied in the VA Mental Health Evaluation. The application of these rules defining engagement seeks to demonstrate a minimum level of interaction by the service member with the MHS as a care provider.

The cohort diagnostic-code requirement of just one code-specific encounter was chosen to create in the cohort the broadest population of patients with depression. The most inclusive denominators in related NQF measures require just one diagnosis-related encounter as well. Cohort-inclusion in the VA evaluation was based on the study diagnosis with the most encounters (out of five possible study diagnoses) during the measurement period and was limited to one study diagnosis of interest, unlike this study where a patient may have been included in both PTSD and depression cohorts.

The diagnostic code list for inclusion in the depression cohort used in the VA evaluation was limited to codes for MDD. This study includes a broader range of diagnostic codes for depression (major depressive disorder or depression/dysthymia) as the basis for cohort inclusion. These diagnostic codes reflect the broadest inclusion criteria for the quality measure denominators utilized in this study, including relevant NQF and VA evaluation measure implementations. Also, the newly updated CPG for MDD supports the consideration of its principles when treating depressive disorders other than MDD (Department of Veterans Affairs and Department of Defense, 2016). For some quality measures where the denominator is more narrowly defined than is the diagnostic cohort, those measures were applied to a subset of the larger depression cohort. Exclusions were applied to the denominators in both cohorts to make results as comparable as possible to NQF and VA evaluation applications. Where applicable, reference has been made in the specifications to how the implementations of these measures may have varied across applications.

The data sources used for this study are shown in Table B.1:

While four of these data sets are distinguished as outpatient/inpatient and provider/facility, they may all apply to the same date(s) of service. The interpretation of crossover of data lines of service within these data sets was challenging. Also, variables distinguishing characteristics of care provided (e.g., place of service, provider specialty) vary greatly among the data sets both in content and level of detail. These inconsistencies presented challenges to classifying and describing care across these data sets. Specific rules were developed to categorize data in as standardized a manner as possible across all sources of administrative data sets. The rules dealt with issues such as identifying providers of similar specialty, handling of same-day encounters to multiple providers, and classifying care by place of service. See the Phase I report (Hepner et al., 2016) for a summary of the rules applied to these data and the rationale behind them.

The PDTS was used to evaluate all pharmacologic care provided during the measurement period. The PDTS database used included a scrambled SSN of the plan spon-

Table B.1
Content of Data Sources for Direct Care and Purchased Care

Content	Data Source
Outpatient services delivered within MTFs (direct care)	Comprehensive Ambulatory Professional Encounter Record (CAPER)
Inpatient services delivered within MTFs (direct care)	Standard Inpatient Data Record (SIDR)
Provider services delivered outside of MTFs (purchased care)	TRICARE Encounter Data–Non-Institutional (TED-NI)
Facility services delivered outside of MTFs (purchased care)	TRICARE Encounter Data–Institutional (TED-I)
TRICARE eligibility and enrollment	VM6 Beneficiary Level
TRICARE eligibility/active duty status	Active Duty Master File
Dispensed medication	Pharmacy Data Transaction Services (PDTS)
Service characteristics	Defense Manpower Data Center (DMDC)
Deployment history	Contingency Tracking System–Deployments
Medical record of outpatient care delivered within MTFs (direct care)	Armed Forces Health Longitudinal Technology Application (AHLTA)
Patient symptom questionnaire data (direct care)	Behavioral Health Data Portal (BHDP)

sor. It was assumed that the vast majority of the sponsors were the active component members, but relationship to the sponsor was not an included variable in the dataset. To address this problem, cross checks between PDTS and VM6 Beneficiary Level files were made of member age and gender. Cases that were not matches were deleted from the PDTS database.

Nurse abstractors used AHLTA to review the clinical notes of direct outpatient care provided during the measurement period. These data supplemented the administrative data and were the source of data for the hybrid quality measures that utilized both administrative data and medical record data. These hybrid measures were applied to a sample of service members within the cohort that received only direct care during the measurement period. Because the medical record review focused on direct care only, technical specifications for the medical record measures presented here were limited to defining the application in direct care and do not include specifications for applying those measures to purchased care.

Symptom questionnaire data, including the PHQ-9, were retrieved from the BHDP system. PHQ-9 scores were used to construct three depression quality measures. A limitation of this data source during the study period was that it was at that time utilized primarily by the Army. Therefore, denominators for these measures were limited to direct outpatient care provided by the Army.

Diagnostic Cohort, Medical Record, and Symptom Questionnaire Samples

The following are the criteria applied for service member inclusion into the depression diagnostic cohort and medical record review sample for this study.

Eligibility for cohort inclusion: Active-component service members were eligible for inclusion in the depression cohort. These individuals were most likely enrolled in TRICARE Prime, Standard, or Extra. Active component spouses and dependents and all retirees and dependents were ineligible. Eligibility was calculated based on all care received (i.e., direct care and/or purchased care). Service members who were completely missing from the Active-Duty Master File (which was current through September 2013) were dropped from inclusion.[1]

Depression cohort: Inclusion in the depression cohort required a condition-related diagnosis during the measurement period and a minimal level of engagement during that time with TRICARE-provided care for any health reason.

Condition-related diagnosis: During the six-month period from January 1 through June 30, 2012, for Phase I, and from January 1 through June 30, 2013, for Phase II, active-component members were identified who had a depression diagnosis occurring in at least one TRICARE-provided inpatient episode or one TRICARE-provided outpatient encounter. The first diagnosis of depression during the six-month period was identified using the ICD-9-CM codes (primary or secondary) listed in Table B.2 associated with any TRICARE encounter. The date of the first depression diagnosis defined the start date of the 12-month measurement period during which care for depression was observed. The codes for inclusion in the depression cohort include more than just those for MDD. We chose this broader definition of depression to include relevant NQF-endorsed depression measure denominator codes (for dysthymia and other depressive disorders). Those codes also included 296.26 and 296.36 (MDD, full remission), so they are included here as well (though they were not included in the definition of a depression new treatment episode). We chose to require just one encounter to be more inclusive, but acknowledge that we may have included patients whose depression diagnoses were not confirmed. On the other hand, one encounter meant that we would not have excluded those patients with a valid diagnosis who may not have received indicated follow-up care.

Engaged with and eligible for MHS care: Patients selected for the cohort also had to have at least one TRICARE-provided inpatient episode or two outpatient encounters *for any reason* during the 12-month measurement period starting with the first qualifying diagnosis of depression, and during that same 12-month measurement period,

[1] Active-duty service members are eligible to receive care at MTFs or through the TRICARE network through TRICARE Prime. A check of both the eligibility and enrollment files occasionally showed unexpected gaps in coverage, so we used the DMDC's Active-Duty Master File to verify that the service member was still serving on active duty.

Table B.2
Qualifying ICD-9-CM Codes for Depression Cohort Inclusion

ICD-9-CM Code	Description
296.20	Major depressive disorder, single episode, unspecified
296.21	Major depressive disorder, single episode, mild
296.22	Major depressive disorder, single episode, moderate
296.23	Major depressive disorder, single episode, severe, without mention of psychotic behavior
296.24	Major depressive disorder, single episode, severe, specified as with psychotic behavior
296.25	Major depressive disorder, single episode, in partial or unspecified remission
296.26	Major depressive disorder, single episode, in full remission
296.30	Major depressive disorder, recurrent episode, unspecified
296.31	Major depressive disorder, recurrent episode, mild
296.32	Major depressive disorder, recurrent episode, moderate
296.33	Major depressive disorder, recurrent episode, severe, without mention of psychotic behavior
296.34	Major depressive disorder, recurrent episode, severe, specified as with psychotic behavior
296.35	Major depressive disorder, recurrent episode, in partial or unspecified remission
296.36	Major depressive disorder, recurrent episode, in full remission
293.83	Mood disorder in conditions classified elsewhere: transient organic psychotic conditions, depressive type
296.90	Unspecified episodic mood disorder (affective psychosis, melancholia, mood disorder not otherwise specified)
296.99	Other specified episodic mood disorder (mood swings: brief compensatory, rebound)
298.0	Depressive type psychosis
300.4	Dysthymic disorder
309.1	Prolonged depressive reaction
311	Depressive disorder, not elsewhere classified

did not have two or more consecutive months of TRICARE ineligibility based on the VM6 Beneficiary Level files.

Exclusions: Measure denominator exclusions, if any, were made on a measure-by-measure basis (e.g., in hospice treatment, resident of long-term care facility) as indicated for the measure, and these are specified in each measure's technical specifica-

tions. In all cases, we strove to follow the technical specifications as indicated by the measure's source. In general, denominator exclusions for inpatient admissions were allowed when the window of time for the recommended outpatient care was short (e.g., 30 days) or the measure assessed a minimum amount of care within a relatively short time (e.g., four psychotherapy visits or two E&M visits within eight weeks). This exclusion was based on the assumption that the admission might have interfered with the ability to access the outpatient care. Patients were excluded from a measure denominator if the time remaining in the study period after requirements for measure eligibility were met was less than the specified time period allowed for the provision of the care being evaluated.

Comorbidity: If an active-component member was included in both the PTSD and depression cohorts, applicable administrative data quality measures for both conditions were applied. Medical record-based measures, on the other hand, were applied only for the condition cohort the patient was sampled for medical record review.

Medical Record Review Sample: The study population for the MRR was service members in the Army, Air Force, Marine Corps, and Navy[2] who received only MHS care directly through military treatment facilities (e.g., direct care only) for depression. We drew a stratified sample of 400 service members from the depression cohort. We stratified based on whether service members had a new treatment episode (NTE) on Day 1 of cohort entry versus not having a NTE during the study period, branch, region, and whether service members were in both the PTSD and depression cohorts. We oversampled service members with NTEs starting on Day 1 of cohort entry so that 60 percent of the sample would include individuals with NTEs to increase the sample size available for estimating prevalence of NTE-based measures. Some quality measures require an observation period of up to 6 months (e.g., functional status, symptom response/remission). To maximize the number of NTEs with sufficiently long observation periods, we removed from the MRR study population individuals having an NTE after Day 1 of cohort entry.[3]

To yield two distinct MRR samples for PTSD and depression, we randomly split the cohort-overlap sample (n = 1,616) to assign these service members either to PTSD (70 percent) or depression (30 percent). More service members are sampled for the PTSD cohort since a larger proportion of the PTSD cohort is in the overlap (32 percent) than in the depression cohort (13 percent).

Sampling weights for estimating the measure scores for the NTE and all-cohort measures were applied to account for the stratified sampling plan. The weights were developed to match population totals based on having an NTE, branch, and belonging to both the PTSD and depression cohorts. See Appendix C for a detailed description of the MRR sampling methodology.

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[2] Coast Guard service members and those with missing region are excluded from the sampled population.

[3] Those with an NTE after Day 1 of cohort entry were 1 to 4 percent of the total cohort population.

Symptom Questionnaire Sample: Symptom scores for behavioral health conditions, which are based on questionnaires such as the PCL for PTSD and the PHQ-9 for depression, are available from a dedicated data collection system within MHS. The system, known as the BHDP, has been in operation since May 2012 in all of Army's behavioral health clinics. Implementation of the BHDP throughout the MHS is in different stages of development and implementation, but the system is separate from the electronic health record. The symptom questionnaire data collected through the BHDP offer a way to track clinical outcomes of treatment for PH conditions provided by providers at MTFs. Although separate from the medical record, the BHDP system offers an efficient method of patients completing the questionnaires online and providing feedback to providers immediately for use during patient encounters minutes later. Symptom data are captured in structured fields, making the data easily accessible. Despite these advantages, limitations include the need for providers to manually enter the data into the medical record, the fact that use at the time of data collection may not have been consistent among providers, and access to the system was not yet universal across services and specialties. Also, the analysis of observational data sources, such as the symptom questionnaire data, should be adjusted for differences in severity across groups. Standard risk adjustment approaches such as covariate adjustment in regression are limited to adjusting for known patient characteristics, such as demographics and baseline symptoms scores, but unobserved or unrecorded differences are not accounted.

Table B.3
Key Definitions

Variable	Definition	Questions/ Notes
New treatment episode (NTE): depression	The new treatment episode (NTE) for depression applies to patients in the depression cohort and is defined as:	
	An outpatient visit with a primary diagnosis of depression (Table B.2, but excluding 296.26 and 296.36) AND No outpatient visits in the prior six months for depression (primary or secondary diagnosis, Table E.2, but excluding 296.26 and 296.36) from CAPER and TED-NI AND No treatment with an antidepressant in the prior six months based on the PDTS and AHLTA AND No admission or transfer to an inpatient or residential bed from SIDR or TED-I in the prior six months with a diagnosis (primary or secondary) of depression (Table B.2, but excluding 296.26 and 296.36) and when the depression diagnosis is not primary, a primary psychiatric diagnosis (ICD-9 codes: 290.xx – 319.xx). The first visit after the clean period in which depression is the primary diagnosis indicates the start date of the NTE. In the medical record review, if an abstractor could not distinguish primary from secondary diagnoses, the requirement was just that the code from Table B.2 (excluding 296.26 and 296.36) or the diagnosis was associated with the encounter. The inclusion of the required depression-related medication "clean period" prior to the NTE was designed to create a higher degree of certainty that the case identified was a true NTE. While some depression medications are used for unrelated reasons, it was not possible to identify which cases with medication treatment in the prior six months represented treatment for depression and which did not. The care of NTEs evaluated in this report is limited to those diagnosed in an outpatient setting since the selected quality measures focus on outpatient care. Patients whose NTEs were initiated by an inpatient stay are not included in the denominators of measures focusing on NTE care. If a patient had more than one depression NTE during the measurement period, performance of care was only evaluated for the first NTE.	"Outpatient visit" does not include telephone/email encounters
Antidepressant treatment	Treatment with (dispensing of) a drug listed in the PDTS of Therapeutic Class THERCLSS 281604 (antidepressants) OR Product Name PRODNAME Savella. For medical record review, abstractors were provided a list of antidepressants (brand and generic names).	Product Name is used for drugs not consistently identified via the Therapeutic Class

Table B.3—Continued

Outpatient psychotherapy	Any study diagnosis-related (primary or secondary diagnosis for depression from Table B.2) outpatient clinic encounters from CAPER or TED-I for which the following CPT codes are present:	CPT codes for psychiatric services changed significantly in 2013
	Pre-2013: • 90804, 90805, 90806, 90807, 90808, 90809 Office or other outpatient facility, insight oriented, behavior modifying and/or supportive psychotherapy: Face-to-face with patient, with or without E&M services, 20–80 minutes duration • 90810, 90811, 90812, 90813, 90814, 90815 Office or other outpatient facility, interactive psychotherapy: Using play equipment, physical devices, language interpreter, or other mechanisms of non-verbal communication, with or without E&M services, 20-80 minutes duration • 90816, 90817, 90818, 90819, 90821, 90822 Inpatient hospital, partial hospital or residential treatment facility: Face-to-face with patient, with or without E&M services, 20-80 minutes duration • 90823, 90824, 90826, 90827, 90828, 90829 Inpatient hospital, partial hospital or residential treatment facility, interactive psychotherapy: Using play equipment, physical devices, language interpreter, or other mechanisms of non-verbal communication, with or without E&M services, 20-80 minutes duration • 90845 Psychoanalysis • 90853 Group psychotherapy (other than of a multiple-family group) • 90857 Interactive group psychotherapy	Inpatient codes included for partial hospitalization setting
	2013 forward: • +90785, 90832, +90833, 90834, +90836, 90837, +90838 Psychotherapy, with patient and/or family member: With or without E&M services, 16-53+ minutes duration. • 90839, +90840 Psychotherapy for crisis: First 60 minutes with additional 30-minute add-on code (+90840) • 90845 Psychoanalysis	"+" = add-on code. In 2013, interactive complexity is an add-on code (+90785) and codes are no longer site-specific.

Table B.3—Continued

	• 90853 Group psychotherapy (other than of a multiple family group)	
	Psychotherapy sessions of less than 30 minutes duration are included in this definition. While sessions of this duration were not very frequently utilized, these sessions may extend to up to 37 minutes in the 2013 coding rules and therefore may be significant in terms of a therapeutic treatment session.	
Outpatient evaluation and management (E&M) visit	Diagnosis-related (primary or secondary diagnosis from Table B.2 for depression) E&M visit from CAPER or TED-NI. E&M visit codes are used by qualified health care professionals who can prescribe medication. The E&M visit is used to approximate and include a medication management visit; although E&M visits are likely to overestimate actual medication management visits. An E&M visit is defined as any diagnosis-related encounter for which one of the following CPT codes is present:	
	• 90805, 90807, 90809, 90811, 90813, 90815 90817, 90819, 90822,90824, 90827, 90829 Office or other outpatient or inpatient facility: Individual psychotherapy with medical evaluation and management services, 20–80 minutes duration	Inpatient codes included for partial hospitalization setting
	• 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215 Office or other outpatient services: Evaluation and management services	
	• 99241, 99242, 99243, 99244, 99245 Office or other outpatient consultations	
	• 90862 Pharmacological management, including prescription use, and review of medication with no more than minimal medical psychotherapy	Code 90862 discontinued in 2013
	• +90863 Pharmacological management, including prescription and review of medication, when performed with psychotherapy services (for those providers who cannot report E&M codes).	New code in 2013. Not for use by physicians or other qualified health care professionals
Inpatient stays	The primary sources of administrative data for inpatient stays were SIDR (direct care) and TED-I (purchased facility services). See the Phase I report for the rules used to identify inpatient care (acute and nonacute) from these data.	
Outpatient visits	The primary sources of administrative data for outpatient visits were CAPER (direct care) and TED-NI (purchased provider services). See the Phase I report for the rules used to identify outpatient care from these data. The source of medical record data for outpatient direct care was AHLTA.	

Table B.4
Depression-A1: Baseline Symptom Assessment with PHQ-9

MEASURE SUMMARY		
Measure statement	Percentage of depression patients in a new treatment episode with assessment of symptoms with PHQ-9	
Numerator	Patients in the denominator who have an assessment of depression symptoms within the first 30 days of a new treatment episode	
Denominator	Patients with depression in a new treatment episode	
Measure type	Process	
Care setting	Outpatient	
NUMERATOR SPECIFICATIONS		**Data Source**
PHQ-9	The nine-item Patient Health Questionnaire (PHQ-9) is the depression module of the full PHQ scale and is in the public domain (Kroenke, Spitzer and Williams, 2001). Each item corresponds to one of the DSM-IV criteria for major depressive disorder and is administered as a self-report scale completed by the patient. The measure can be scored continuously (from 0 to 27) or via a diagnostic algorithm that matches item responses to the diagnostic criteria of the DSM-IV (Kroenke, Spitzer and Williams, 2001). Assessment with the PHQ-9 was required within 30 days prior or 30 days after the date of the PTSD NTE and in the outpatient setting. Assessments of symptom severity that did not include the full PHQ-9 were not acceptable for this measure.	AHLTA
DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with depression	See Table B.3.	CAPER, SIDR
NTE	See New Treatment Episode – Depression in Key Definitions. The NTE was defined from administrative data. Abstractors confirmed the PTSD NTE and the NTE date based on information in the medical record. A correction to the date was allowed by the abstractor, if applicable. NTEs in this study were limited to those cases diagnosed in the outpatient setting.	CAPER, SIDR, PDTS, AHLTA
Exclusions	None	
MEASURE BACKGROUND		
Measure source	Adapted from: Farmer C, Watkins K, Smith B, et al., *Program Evaluation of VHA Mental Health Services, Medical Record Review Report* (Contract #GS 10 F-0261K), Alexandria, Va.: Altarum Institute and RAND-University of Pittsburgh Health Institute, October 2010. National Quality Forum, "NQF #0712 Depression Utilization of the PHQ-9 Tool," Last updated: September 25, 2014. As of March 1, 2015: http://www.qualityforum.org/QPS/0712	

Table B.4—Continued

Rationale for measure inclusion	**Source/Adaptation** This measure was adapted from the VA Mental Health Program Evaluation (Farmer et al., 2010; Watkins et al., 2011) by changing the definition of break in care from five to six months, which is used more commonly in the literature. Consistent with NQF recommendations (National Quality Forum, 2013), we have also changed the measure to specify that the PHQ-9 be the standardized tool used rather than allowing any standardized tool. **Guideline Support** This measure is consistent with the *VA/DoD Clinical Practice Guideline for Management of Major Depressive Disorder* (Department of Veterans Affairs and Department of Defense, 2009a), which states that the PHQ-9 ought to be used as part of an initial assessment for any patient with a positive depression screen or for whom depression is suspected. The strength of evidence for this recommendation was rated as a 'B,' which indicates that the authors believe that there exists "at least fair evidence that the intervention improves health outcomes and concludes that benefits outweigh harm" (Department of Veterans Affairs and Department of Defense, 2009a). Note that the guidelines recommend that the PHQ-9 be included as an adjunct assessment tool even when a full diagnostic interview is conducted (Department of Veterans Affairs and Department of Defense, 2009a). This measure is also consistent with the Institute for Clinical Systems Improvement guideline for care of MDD in primary care settings, which recommend routine monitoring of symptoms with a standardized tool such as the PHQ-9 (Trangle et al., 2012). Measurement of MDD symptoms at the start of care using a standardized instrument allows clinicians to track treatment response quantitatively, and when necessary due to treatment nonresponse, to adjust the treatment plan. In order to make a determination of symptom improvement (or non-response) at a future time point, a baseline assessment of symptoms is necessary. **Research Evidence** The PHQ-9 (Kroenke, Spitzer and Williams, 2001) is the recommended standardized measurement tool for a variety of reasons. Although there are a number of validated tools to assess depression, the PHQ-9 is particularly efficient, simple to administer, and easy to score and interpret (Kroenke, Spitzer and Williams, 2001). Internal reliability of the scale is strong (α=0.86-0.89) and 48-hour test-retest reliability is also strong (r = 0.84) even when the mode of administration differs (patient-completed versus interviewer administered; (Kroenke, Spitzer and Williams, 2001). In a recent meta-analysis of 14 psychometric evaluations of the PHQ-9, Gilbody, Richards, Brealey, and Hewitt (2007) reported a pooled sensitivity estimate of the measure of 0.80 and a specificity estimate of 0.92. Across the full range of the scale, the diagnostic performance of the scale is strong (AUC = 0.95) (Kroenke, Spitzer and Williams, 2001). Importantly, diagnostic performance did not differ depending on the scoring strategy (a diagnostic algorithm versus continuous scoring with a cut-point of 10) or based on the prevalence of depression in the evaluated population (Gilbody et al., 2007). In a summary of optimal cut points for identifying probable depression, the authors of this meta-analysis note that empirical optimal cut points have varied from 9 (community sample) to 12 (inpatient traumatic brain injury sample) (Gilbody et al., 2007). Finally, the scale performs as expected with strong correlations between the PHQ-9 and SF-20 Health-related Quality of Life Scales (r = 0.33-0.73), self-reported disability days (r = 0.24) and heath care utilization (physician visits, r = 0.24) (Kroenke, Spitzer and Williams, 2001), all of which suggest good construct validity.
Feasibility	The denominator for this measure (new treatment episodes of depression) was derived from administrative claims data and validated with medical record review. The determination of the assessment of depression symptoms using the PHQ-9 was collected from the medical record, but could also have been retrieved from the BHDP.

Table B.5
Depression-A2: Assessment for Manic or Hypomanic Behaviors

MEASURE SUMMARY	
Measure statement	Percentage of depression patients in a new treatment episode assessed for manic or hypomanic behaviors
Numerator	Patients in the denominator who are assessed for the presence or absence of the symptoms or behaviors associated with mania or hypomania within 30 days of the start of the new treatment episode
Denominator	Patients with depression in a new treatment episode
Measure type	Process
Care setting	Outpatient

NUMERATOR SPECIFICATIONS		Data Source
Assessed for mania/ hypomania	Any documentation of the presence or absence of manic or hypomanic behaviors, either by formal assessment (standardized tool) or by interview that was completed at the same visit or occurred in the 30 days prior to the 30 days after the start of the NTE. Documentation of the presence or absence of current or prior symptoms of mania/hypomania or reference to presence or absence (prior or current) of specific symptoms of mania/hypomania, such as any of the following: • A period of elevated, expansive or irritable mood • Grandiosity (unrealistic beliefs in one's ability, intelligence, and powers; may be delusional) • Decreased need for sleep • More talkative than usual • Flight of ideas • Racing thoughts, distractibility • High sex drive • Tendency to show poor judgment, such as impulsively deciding to quit a job • Increased reckless behaviors (such as lavish spending sprees, impulsive sexual indiscretions, abuse of alcohol or drugs, or ill-advised business decisions) There are several standardized bipolar screening tools that may be used to assess for mania/hypomania, including but not limited to the following: • Altman Self Report Mania Scale (ASRM) (Altman et al., 1997) • Bech-Rafaelsen Mania Rating Scale (BRMS) (Bech and Rafaelsen, 1980) • Bipolar Spectrum Diagnostic Scale (BSDS) (Nassir et al., 2005) • Brief Bipolar Disorder Symptom Scale (BDSS) (Dennehy et al., 2004) • Clinical Global Impression – Bipolar (CGI-BP) (Spearing et al., 1997) • Hypomanic Personality Scale (Eckblad and Chapman, 1986) • Mood Disorder Questionnaire (MDQ) (Hirschfeld et al., 2000) • Self-Report Mania Inventory (SRMI) (Shugar et al., 1992) • Young Mania Rating Scale (YMRS) (Young et al., 1978)	AHLTA

Table B.5—Continued

DENOMINATOR SPECIFICATIONS		Data Source
Patients with depression	See Table B.3.	CAPER, SIDR
NTE	See New Treatment Episode –Depression in Key Definitions. The NTE was defined from administrative data. Abstractors confirmed the NTE and NTE date based on information in the medical record. A correction to the date was allowed by the abstractor, if applicable. The NTEs in this study were limited to those initiated in the outpatient setting.	CAPER, SIDR, PDTS, AHLTA
Exclusions	None	
MEASURE BACKGROUND		
Measure source	Adapted from: National Quality Forum, "NQF #0109 - Bipolar Disorder and Major Depression: Assessment for Manic or Hypomanic Behaviors," Last Updated: September 18, 2014. NOTE: This measure was removed by the steward from NQF endorsement. As of March 18, 2015: http://www.qualityforum.org/QPS/0109	
Rationale for measure inclusion	**Source/Adaptation** This measure was based on what was an NQF-endorsed measure until September of 2014. The denominator used for this measure is slightly more expansive in that it includes a small number of nonspecific diagnostic codes for depression (293,83, 296.90, 296.99, 298.0, and 309.1) that were not included in the original NQF denominator specifications. We also did not include the requirement of treatment (pharmacologic or psychotherapy) specified in the former NQF measure. **Guideline Support** The *VA/DoD Clinical Practice Guideline for MDD* (2009a) recommends that the "possible existence of bipolar disorder should be assessed in patients presenting with depressive symptoms, using a clinical interview or bipolar questionnaire." Similarly, the American Psychiatric Association's *Practice Guideline for Treatment of Patients with Major Depressive Disorder* notes that major depressive episodes are common in the course of bipolar disorder, and therefore, it is critical that providers consider "bipolar disorders as part of the differential diagnosis of major depressive disorder," and that "all patients who present for treatment for a major depressive episode should be screened for a past history of manic or hypomanic episodes and for past adverse reactions to antidepressants that might be consistent with a "switch" into hypomania or mania (Glenberg et al., 2010). **Research Evidence** Some patients experiencing a major depressive episode have bipolar disorder rather than a depressive disorder. For these patients, the appropriate treatment differs considerably from the treatment for MDD, and in fact, typical pharmacological treatments for depression may precipitate a manic episode (e.g., Altshuler et al., 1995). For this reason, it is critical that a provider assessing a patient who is currently depressed rule out a history of manic or hypomanic episodes before proceeding with treatment.	
Feasibility	The denominator for this measure applies to depression patients in new treatment episodes and can be identified with administrative claim data. The performance of the screen for mania/hypomania was collected from the medical record.	

Table B.6
Depression-A3: Assessment for Suicide Risk

MEASURE SUMMARY	
Measure statement	Percentage of depression patients in a new treatment episode assessed for suicide risk
Numerator	Patients in the denominator who are assessed for current suicide risk during the same visit in which a new treatment episode began
Denominator	Patients with depression in a new treatment episode
Measure type	Process
Care setting	Outpatient

NUMERATOR SPECIFICATIONS		Data Source
Assessed for suicide risk	This assessment must be completed during the same visit in which the NTE began Suicide risk assessment must include questions about the following: • suicidal ideation (SI) • patient's intent to initiate a suicide attempt or suicidal behavior • *and*, if either is present (for patients not hospitalized), • patient's plans for a suicide attempt • whether the patient has access to the means for completing suicide	AHLTA
Suicidal ideation (SI)	SI includes any reference to the patient not wanting to live anymore, comments about killing oneself or doing oneself serious harm, passing thoughts of death, or similar thoughts. Absence of SI is documentation of specific denial of SI (e.g., "no suicidal thoughts," "denies SI"). Using the PHQ-9, which includes an item assessing SI, would count for assessment of SI, but a PHQ of fewer items (e.g., PHQ-2, PHQ-8) would not.	AHLTA
Suicidal intent	Suicidal intent is any indication of imminent threat of suicide, patient has a specific plan for hurting or killing him/herself (e.g., location, how, when) or indication about chosen means to self-harm or suicide or access to lethal means (e.g., pills, firearms).	AHLTA
Suicidal behavior	Suicidal behavior is characterized by an unsuccessful attempt to kill oneself. If an attempted suicide involves a suicidal action unlikely to have any potential of being fatal (e.g., ingesting six Tylenol tablets), it is called a suicidal gesture.	AHLTA
Suicide plan	Any indication that the patient has determined or has been thinking about exactly how to complete the suicide	AHLTA
Access to means	Patient has access to the means that the patient would use or might use to complete the suicide	AHLTA

DENOMINATOR SPECIFICATIONS		Data Source
Patients with depression	See Table B.3.	CAPER, SIDR

Table B.6—Continued

NTE	See New Treatment Episode – Depression in Key Definitions. The NTE was defined from administrative data. Abstractors confirmed the NTE and NTE date based on information in the medical record. A correction to the NTE date was allowed by the abstractor, if applicable. NTEs were limited to those cases diagnosed in the outpatient setting.	CAPER, SIDR, PDTS, AHLTA
Exclusions	None	
MEASURE BACKGROUND		
Measure source	Adapted from the following: Farmer, Carrie M., Katherine E. Watkins, Brad Smith, Susan M. Paddock, Abigail Woodroffe, Jacob Solomon, Melony E. Sorbero, Kimberly A. Hepner, Lanna Forrest, Lisa R. Shugarman, Cathy Call, and Harold A. Pincus, *Program Evaluation of VHA Mental Health Services: Medical Record Review Report*, Alexandria, Va.: Altarum Institute and RAND–University of Pittsburgh Health Institute, 2010. National Quality Forum, "NQF #0104 Adult Major Depressive Disorder: Suicide Risk Assessment," last updated February 27, 2015. As of March 18, 2015: http://www.qualityforum.org/QPS/0104	
Rationale for measure inclusion	**Source/Adaptation** This measure is based on the NQF endorsed measure #0104 that recommends screening for suicide risk among patients with a new treatment episode of MDD (National Quality Forum, 2013). Moreover, assessing SI is a routine part of the mental status exam conducted in psychiatry, and the American Psychiatric Association recommends that it be used as part of standard practice (2006). The measure used in this study was applied to a denominator that was more broadly defined (depression NTE as defined in Table B.3) than in the NQF measure which was limited to the MDD codes 296.20–296.24 and 296.30–296.34. We reported the measure scores for both denominator specifications. The measure used in the VHA evaluation required a screen for SI at least once during the measurement year and was not linked to NTEs (Farmer et al., 2010; Watkins et al., 2011).	

Table B.6—Continued

Rationale for measure inclusion	**Guideline Support** The VA/DoD guideline also recommends that treatment providers consider non-modifiable risk factors for suicide (e.g., younger age, male gender, family history of suicide, same-sex orientation) and modifiable risk factors (e.g., unstable housing, financial problems, psychiatric disorders) in order to determine whether the relative risk of a completed suicide is low, intermediate or high (VA and DoD, 2013). These risk factors and ultimate risk status are not included in the current measure. Determining acute risk status for suicide (low, intermediate, or high) requires complex clinical judgment; integrating all risks into a single acute risk category would be difficult to perform reliably or consistently with the clinician responsible for the patient's clinical care. It is our judgment that instantiating these guidelines into a quality measure will require a record of the *clinician's judgment* of the patient's risk category. Such a record of the clinician's judgment is not currently a field in the electronic health record and would therefore require medical record review. That being said, we suspect that even a medical record review would reveal that not all guideline specified risk factors are documented in the record. However, we also believe that as these recently released guidelines are promulgated, it is possible that a field will be added to the electronic health record requiring providers to indicate—when a patient is positive to for suicidal ideation—whether the acute risk of an attempt is low, intermediate or high. Were this to occur, the quality measure in place should be updated to include this field in the criteria for evaluating measure performance. Assessing SI is a routine part of the mental status exam conducted in psychiatry, and the American Psychiatric Association recommends that it be used as part of standard practice (American Psychiatric Association, 2006). This recommendation received a grade of I, which indicates that it was "recommended with substantial clinical confidence." This measure's required components for a suicide risk assessment (ideation, intent, plans, and means) is consistent with recommendations in *VA/DoD Clinical Practice Guideline for Assessment and Management of Patients at Risk for Suicide* (VA and DoD, 2013). **Research Evidence** Given the increased risk of attempted and completed suicide associated with most psychiatric conditions (Cavanagh et al., 2003; Kelly and Mann, 1996), it is important for providers to assess suicidal ideation among new or returning patients, and when present, to implement a safety plan and begin quality mental health services (Ramchand et al., 2011). Case-control studies show that one-half to three-quarters of all suicides can be attributed to psychiatric disorders, typically mood and anxiety disorders (Cavanagh et al., 2003). MDD, the most strongly related disorder, increases the risk for death by suicide by 20 times relative to the general population (Cavanagh et al., 2003; Harris and Barraclough, 1997). The demographic profile of active duty service members (younger and more likely to be male than the civilian population) also matches the demographic risk factors for completed suicide (Goldsmith et al., 2002; McKeown, Cuffe and Schulz, 2006). For these reasons, it is important that all patients with a new treatment episode for a psychological health condition be assessed for suicide risk.
Feasibility	The denominator for this measure was identified with administrative claims data. The numerator for this measure requires medical record data to have access to additional assessment data for patients with positive screens (assessment for presence/absence of a plan, restriction of lethal means discussion).

Table B.7
Depression-A4: Assessment of Recent Substance Use

MEASURE SUMMARY	
Measure statement	Percentage of depression patients in a new treatment episode assessed for substance use
Numerator	Patients in the denominator who have an assessment of recent substance use, including type, quantity, and frequency within the first 30 days of a new treatment episode
Denominator	Patients with depression in a new treatment episode
Measure type	Process
Care setting	Outpatient

NUMERATOR SPECIFICATIONS		**Data Source**
Assessed for recent substance use	This assessment must be completed at the same visit or within the 30 days prior or 30 days after the visit in which the NTE began. Documentation of no alcohol and/or no recent drug use *or* documentation of recent alcohol use, including quantity and frequency *or* recent drug use, including type and frequency. An appropriate screening tool may be used. • Type (for drug use only): An assessment of alcohol, marijuana, cocaine, heroin or other opiates, amphetamine or methamphetamine, or note indicating that the patient denied all other substance use • Quantity (for alcohol use only): Any evidence of a quantity assessment, including number of drinks per day, number of drinks per week, any note about binge drinking (at least five drinks in one drinking episode for men, at least four drinks in one drinking episode for women) • Frequency: Note about daily, monthly, weekly, or occasional use. Standardized tools for **alcohol use** include (but are not limited to) the following: • AUDIT (10 items, score 0–40) • AUDIT-PC (5 items, score 0–20) • AUDIT-C (3 items, score 0–12) • FAST (4 items, score 0–16) • Single-Item Alcohol Screening Questionnaire (SASQ) (asked of those who sometimes drink): *In the last 12 months how many times have you had 5 or more [if male]/4 or more [if female] drinks in a day?* • ASSIST (screen for alcohol, tobacco, and substance) • Do NOT give credit for the use of CAGE in the absence of any other assessment for alcohol use. Standardized tools for **drug** screening include (but are not limited to) the following: • CAGE-AID • DAST-10 • ASSIST (screen for alcohol, tobacco, and substance).	AHLTA
Recent substance use	Use in the past three months.	

Table B.7—Continued

DENOMINATOR SPECIFICATIONS		Data Source
Patients with depression	See Table B.3.	CAPER, SIDR
NTE	See New Treatment Episode – Depression in Key Definitions. The NTE was defined from administrative data. Abstractors confirmed the NTE and NTE date based on information in the medical record. A correction to the NTE date was allowed by the abstractor, if applicable. NTEs were limited to those cases diagnosed in the outpatient setting.	CAPER, SIDR, PDTS, AHLTA
Exclusions	None	
MEASURE BACKGROUND		
Measure source	Adapted from the following: Farmer, Carrie M., Katherine E. Watkins, Brad Smith, Susan M. Paddock, Abigail Woodroffe, Jacob Solomon, Melony E. Sorbero, Kimberly A. Hepner, Lanna Forrest, Lisa R. Shugarman, Cathy Call, and Harold A. Pincus, *Program Evaluation of VHA Mental Health Services: Medical Record Review Report*, Alexandria, Va.: Altarum Institute and RAND–University of Pittsburgh Health Institute, 2010. National Quality Forum, "NQF #0110 Bipolar Disorder and Major Depression: Appraisal for Alcohol or Chemical Substance Use," last updated September 18, 2014. NOTE: The steward of this measure removed it from NQF endorsement in September of 2014. As of March 18, 2015: http://www.qualityforum.org/QPS/0110	
Rationale for measure inclusion	**Source/Adaptation** This measure was based on what was an NQF-endorsed measure until September of 2014 which recommended assessing comorbid alcohol and substance use in patients with bipolar or unipolar depression (National Quality Forum, 2013). This measure was applied to a more expansive definition of depression rather than just MDD. This measure was also used in the VHA Mental Health Program Evaluation (Farmer et al., 2010; Watkins et al., 2011). The definition of a new treatment episode was modified from its use in that study in that what constitutes a break in care was changed from five months to six months to match the time frame that is more generally used. NTEs were limited to those cases diagnosed in the outpatient setting. **Guideline Support** **Research Evidence** Mental health patients who are currently using alcohol or other drugs do not respond to treatment as well as patients who are not using alcohol or drugs (Le Fauve et al., 2004). Moreover, the impairment associated with their mental health conditions appears to be more severe and chronic than for patients without concurrent substance use (Kessler, 2004). *VA/DoD Clinical Practice Guideline for Management of Post-Traumatic Stress* and the 2009 *Clinical Practice Guideline for Management of Major Depressive Disorder (MDD)* both recommend that current substance use patterns of patients with these disorders be assessed in order to identify substance abuse or dependency, including alcohol, nicotine, and prescribed and illicit drugs (VA and DoD, 2009a; VA and DoD, 2010b; Kessler, 2004; Rock et al., 2011).	
Feasibility	The denominator for this measure applies to all patients with new treatment episodes for depression and was identified with administrative claim data with medical record validation. The substance use assessment was also collected from medical record review, but could be accessed from the BHDP for use of AUDIT or AUDIT-C for substance screening.	

Table B.8
Depression-T1: Periodic Symptom Assessment with PHQ-9

MEASURE SUMMARY	
Measure statement	Percentage of depression patients with assessment of symptoms with PHQ-9 during the four-month assessment period
Numerator	Patients in the denominator who have a PHQ-9 administered at least once during the four-month measurement period
Denominator	Patients with depression and an encounter within the four-month measurement period
Measure type	Process
Care setting	Outpatient

NUMERATOR SPECIFICATIONS		Data Source
PHQ-9 administered	The nine-item Patient Health Questionnaire (PHQ-9) is the depression module of the full PHQ scale and is in the public domain (Kroenke, Spitzer and Williams, 2001). Each item corresponds to one of the DSM-IV criteria for major depressive disorder, and is administered as a self-report scale completed by the patient. The measure can be scored continuously (from 0 to 27) or via a diagnostic algorithm that matches item responses to the diagnostic criteria of the DSM-IV (Kroenke, Spitzer and Williams, 2001). PHQ-9 was administered at least once during the four-month measurement period. The 12-month period used in this evaluation allowed for a maximum of three four-month measurement periods for each patient. For NTEs starting in the first month of the first measurement period, include scores in the 30 days prior to the NTE date.	AHLTA or BHDP[a]

DENOMINATOR SPECIFICATIONS		Data Source
Patients with depression	See Table B.3. Include patients with any of the following ICD-9 CM codes: 296.2x, 296.3x, 300.4.	CAPER, SIDR
Four-month measurement period with encounter	Time window in which the depression patient is either seen at an office visit or contacted via another method (phone: 99441, 99442, 99443; email: 99444), during a four-month time period defined by dates of service that fall into that time period (e.g., June 1, 2012, to September 30, 2012). The potentially eligible intervals for this study were the first, second, and third four-month intervals of the 12-month observation period. Encounter may be a primary care or behavioral health outpatient visit, telephone or email contact associated with any of the following ICD-9 CM codes: 296.2x, 296.3x, or 300.4. For primary care providers, the code may have been primary or secondary; for behavioral health providers, the code must have been primary.	CAPER[b]

Table B.8—Continued

Four-month measurement period with encounter	*Behavioral health providers (any setting):* Psychiatrist: 070, 071, 073, 076 Psychologist/psychoanalyst: 072, 702 Psychiatric nurse practitioner: 611 Clinical social worker: 703, 714 *Primary care providers (any setting):* Family practice physician: 000, 001, 003 Internal medicine physician: 008, 011, 028, 097–099 Geriatrician: 017 Primary care nurse practitioner: 604, 605	CAPER: Provider Specialty (PROVSPEC1)
	Primary care providers in conjunction with specific setting: Clinical Nurse-entry level nurse practitioner: 610 Physician assistant: 901 *In conjunction with setting:* Family practice clinic: AGA, AGZ, BGA, BGZ Internal medicine clinic: AAA, BAA, Primary care clinic: BHA, BHZ	CAPER: Provider Specialty (PROVSPEC1); MEPRS code, 3rd level (MEPR3)
Exclusions	Exclusions included the following: • **Death** during the measurement time frame • **Permanent nursing home resident** during the measurement time frame. There were no direct care permanent nursing home residents in the sample. • **Hospice:** Enrolled in hospice during the measurement time frame. There were no direct care hospice patients in the sample. • **Bipolar Disorder** (in any position) during the measurement time frame: 296.0x Bipolar I disorder 296.1x Manic disorder 296.4x Bipolar I disorder, most recent episode manic 296.5x Bipolar I disorder, most recent episode depressed 296.6x Bipolar I disorder, most recent episode mixed 296.7 Bipolar I disorder, most recent episode unspecified 296.80 Bipolar disorder NOS 296.81 Atypical manic disorder 296.82 Atypical depressive disorder 296.89 Bipolar II disorder	

Table B.8—Continued

Exclusions

- **Personality Disorder** (in any position) during the measurement time frame:

301.0	Paranoid personality disorder
301.1	Affective personality disorder
301.10	Affective personality disorder unspecified
301.11	Chronic hypomanic personality disorder
301.12	Chronic depressive personality disorder
301.13	Cyclothymic disorder
301.2	Schizoid personality disorder
301.20	Schizoid personality disorder unspecified
301.21	Introverted personality
301.22	Schizotypal personality disorder
301.3	Explosive personality disorder
301.4	Obsessive-compulsive personality disorder
301.5	Histrionic personality disorder
301.50	Histrionic personality disorder unspecified
301.51	Chronic factitious illness with physical symptoms
301.59	Other histrionic personality disorder
301.6	Dependent personality disorder
301.7	Antisocial personality disorder
301.8	Other personality disorders
301.81	Narcissistic personality disorder
301.82	Avoidant personality disorder
301.83	Borderline personality disorder
301.84	Passive-aggressive personality
301.89	Other personality disorders
301.9	Unspecified personality disorder

MEASURE BACKGROUND

Measure source: NQF, "NQF #0712 Depression Utilization of the PHQ-9 Tool," last updated March 5, 2015. As of March 18, 2015: http://www.qualityforum.org/QPS/0712

Rationale for measure inclusion:

Source/Adaptation

This is an NQF-endorsed measure requiring regular evaluation of depression symptoms with the PHQ-9.

Guideline Support

This measure is consistent with the *VA/DoD Clinical Practice Guideline for MDD* (VA and DoD, 2009a), which recommends that depressive symptoms be carefully assessed at follow-up visits, and that the PHQ-9 be used to monitor treatment response 4-6 weeks after initiation of treatment and periodically thereafter until full remission is achieved. The authors of the VA/DoD CPG rated the strength of the recommendations as a 'B', which corresponds to a judgment that "at least fair evidence was found that the intervention improves health outcomes and concludes that benefits outweigh harms" (VA and DoD, 2009a). Guidelines issued by the Institute for Clinical Systems Improvement also recommend the PHQ-9 as the preferred tool to detect and monitor depression in the primary care setting (Trangle et al., 2012).

We note that the NQF recommendation that symptoms be re-assessed every four months is more specific, but consistent, with the VA/DoD guideline which recommends "periodic" reassessment after the initial re-assessment at 4-6 weeks, (VA and DoD, 2009a; National Quality Forum, 2013). No specific rationale for the selection of four months rather than another time period is provided in the NQF measure documentation (National Quality Forum, 2013); however, measurement should be more frequent than just the beginning and end of care to ensure inclusion of patients who may not complete care and to provide intermittent assessments for treatment adjustments, if indicated. This window provides a sufficiently lengthy time period to allow a lenient estimate of compliance with measurement-based care standards.

Table B.8—Continued

Rationale for measure inclusion	**Research Evidence** There is an increasing emphasis on the need to deliver treatment that is evidence-based and effective. Harding and colleagues (2011) make the case for measurement-based care as the standard for psychiatric practice to align treatment for psychological health disorders with physical health care. Standardized, repeated measurement of MDD symptoms allows clinicians to track individual patient response to treatment, and also allows administrators and organizations to monitor the treatment outcomes of larger patient groups. Systematic measurement of response to treatment is considered an important component of enhanced primary care. In randomized trials, compared to treatment as usual, enhanced primary care for depression roughly doubles the likelihood of a treatment response (Bower et al., 2006; Gilbody et al., 2006; Williams et al., 2007). Note that dysthymia is included in the denominator as that is the definition specified by NQF for this measure. The PHQ-9 (Kroenke, Spitzer and Williams, 2001) is the recommended standardized measurement tool for a variety of reasons. Although there are a number of validated tools to assess depression, the PHQ-9 is particularly efficient, simple to administer, and easy to score and interpret (Kroenke, Spitzer and Williams, 2001). Internal reliability of the scale is strong (α = 0.86–0.89), and 48-hour test-retest reliability is also strong (r = 0.84) despite different modes of administration (patient-completed versus interviewer administered; (Kroenke, Spitzer and Williams, 2001). In a recent meta-analysis of 14 psychometric evaluations of the PHQ-9, Gilbody, Richards, Brealey, and Hewitt (2007) reported a pooled sensitivity estimate of the measure of 0.80 and a specificity estimate of 0.92. Across the full range of the scale, diagnostic performance is strong (AUC = 0.95) (Kroenke, Spitzer and Williams, 2001). Importantly, diagnostic performance did not differ depending on the scoring strategy (a diagnostic algorithm versus continuous scoring with a cut-point of 10) or based on the prevalence of depression in the evaluated population (Gilbody et al., 2007). In a summary of optimal cut points for identifying probable depression, the Gilbody and colleagues (2007) note that empirical optimal cut points have varied from 9 (community sample) to 12 (inpatient traumatic brain injury sample). Finally, the scale performs as expected with strong correlations between the PHQ-9 and SF-20 Health-related Quality of Life Scales (r = 0.33-0.73), self-reported disability days (r = 0.24) and heath care utilization (physician visits, r = 0.24) (Kroenke, Spitzer and Williams, 2001), all of which suggest good construct validity. Importantly, the scale is sensitive to change in clinical status (Löwe et al., 2004a; Löwe et al., 2004b).
Feasibility	The denominator for this measure (patients with depression and encounters during the measurement period) was determined from administrative claim data. PHQ-9 scores could be collected form the medical record, or as in this case, from the BHDP.

[a] The intended data source had been AHLTA, but was changed to BHDP due to the need to shorten the medical record abstraction process of this study.

[b] To assure that all requisite care was accessible, the denominator was limited to behavioral health encounters since the BHDP was not in general use at the time of data collection.

Table B.9
Depression-T3: Appropriate Follow-up for Endorsed Suicidal Ideation

MEASURE SUMMARY	
Measure statement	Percentage of patient contacts of depression patients with SI with appropriate follow-up (Depression-T3)
Numerator	Documentation of appropriate follow-up for the suicidal ideation, intent, or behavior
Denominator	Outpatient visits or contacts where the depression patient endorsed suicidal ideation, intent, or behavior
Measure type	Process
Care setting	Outpatient

NUMERATOR SPECIFICATIONS		Data Source
Appropriate follow-up	Hospitalization or referral for hospitalization OR [Assessment of presence/absence of a plan and access to means AND Limitation of lethal means counseling or documented negative assessment for access to means AND Follow-up referral or appointment] Additionally, data were collected describing the frequencies of key assessments and provider actions during the visit when SI was noted. Key assessments of modifying factors during the visit: • Level of persistence of SI (persistent, not persistent but current, recent) • Intention to act on SI • Suicide plan • Access to means • Documented level of risk (high, intermediate, low) • Recent preparatory behavior ("recent" or within the past 2 weeks) • Recent suicide attempts ("recent" or within the past 2 weeks) • Prior history of suicide attempts (more than 2 weeks ago) • Recent substance abuse ("recent" or within the past 2 weeks) • Prior history of substance abuse (more than 2 weeks ago) Provider actions during the visit the where the positive SI was noted: • Hospitalization • Patient assessment by behavioral health • If not hospitalized: • Discussion with patient/family of limitation of lethal means • Referral to/appointment with behavioral health • Return appointment with the same provider	AHLTA

Table B.9—Continued

DENOMINATOR SPECIFICATIONS		Data Source
Patients with depression	See Table B.3.	CAPER, SIDR
SI	A positive response to a standardized screening tool for SI or any reference to the patient's not wanting to live anymore, comments about killing oneself or doing oneself serious harm, and thoughts of death as a solution that was current or recent (within the past 2 weeks). This includes intent such as suicide attempts or gestures or plan. The application of this measure focused on the first occurrence of SI in an outpatient setting during the measurement period.[a]	AHLTA
Exclusions	None	
MEASURE BACKGROUND		
Measure source	Adapted from: Farmer, Carrie M., Katherine E. Watkins, Brad Smith, Susan M. Paddock, Abigail Woodroffe, Jacob Solomon, Melony E. Sorbero, Kimberly A. Hepner, Lanna Forrest, Lisa R. Shugarman, Cathy Call, and Harold A. Pincus, *Program Evaluation of VHA Mental Health Services: Medical Record Review Report*, Alexandria, Va.: Altarum Institute and RAND–University of Pittsburgh Health Institute, 2010.	
Rationale for measure inclusion	**Source/Adaptation** A similar measure was used in the VHA Mental Health Program Evaluation (Farmer et al., 2010; Watkins et al., 2011). That measure has been modified here based on the *VA/DoD Clinical Practice Guideline for Assessment and Management of Patients at Risk for Suicide* (VA and DoD, 2013). Whereas the VA measure had the abstractor evaluate the appropriateness of the follow-up, we limited this measure's application to summarizing relevant patient assessments and provider actions. While the complexity of suicide risk assessment and management makes it difficult to assess in the context of a larger evaluation of quality, it can be examined in terms of the provider's approach to the evaluation and management of the patient. **Guideline Support** The measure was used in the VHA Mental Health Program Evaluation (Farmer et al., 2010; Watkins et al., 2011). It has been modified to reflect the *Clinical Practice Guideline for Assessment and Management of Patients at Risk for Suicide* (VA and DoD, 2013). The recommendations are also consistent with *Clinical Practice Guidelines for the Management of Substance Use Disorders* (Management of Substance Use Disorders Working Group, 2009), *VA/DoD Clinical Practice Guideline for Management of Post-Traumatic Stress* and VA/DoD *Clinical Practice Guideline for Management of Major Depressive Disorder (MDD)*, which state that, when a patient is a threat to himself or herself or others, a plan should be implemented to ensure safety until the patient can be further evaluated and treated by a mental health professional (Bongar, 2002; VA and DoD, 2009a; VA and DoD, 2009b; VA and DoD, 2010b; VA and DoD, 2010a). The American Psychiatric Association CPGs also recommend thorough assessment of suicidality during intake evaluations (Jacobs et al., 2003). The indicator was developed by RAND researchers incorporating consultation with suicide experts and VA clinical leadership for the VHA Mental Health Program Evaluation (Farmer et al., 2010; Watkins et al., 2011).	

Table B.9—Continued

Rationale for measure inclusion	It is important to note that *VA/DoD Clinical Practice Guideline for Assessment and Management of Patients at Risk for Suicide* (VA and DoD, 2013) specifies that the recommended course of treatment be tied to a clinical judgment of whether the acute risk for suicide is low, intermediate, or high. Decisions about acute risk status require the clinical provider to integrate data about SI, thoughts, planning, impulse control, previous attempts, persistence of ideation, and the strength of intent to act into a single risk status judgment. That acute risk status judgment (low, intermediate, high) is then mapped onto several possible clinical responses. When acute risk status is low, the provider can choose to consult with a behavioral health provider or address the safety issues and treat the presenting problems. When acute risk status is intermediate, the recommendations are to limit access to lethal means, conduct a complete behavioral evaluation (or refer to a behavioral health provider to do so), and determine an appropriate referral. The appropriate referral is left to the judgment of the clinician, who must select the "least restrictive level of care necessary to ensure safety." When acute risk status is high, the guidelines recommend maintenance of direct observational control of the patient and transfer to an emergency care setting for hospitalization. As these guidelines are promulgated, it is possible that fields will be added to the electronic record to capture more-complex decisions, such as assignment to an acute risk category. Moreover, choices for the "least restrictive level of care necessary to ensure safety" may be further operationalized into an "if-then" decision making tool to guide provider action. **Research Evidence** Given that SI may predict suicidal behavior, it is important that providers with patients who endorse these thoughts provide immediate and appropriate follow-up care to reduce their patients' risk. For patients who are actively suicidal, inpatient psychiatric hospitalization is a common prevention measure to ensure their safety. Although hospitalization typically prevents suicide during the stay, hospitalization alone has not been demonstrated to reduce the risk of suicide following discharge (Goldsmith et al., 2002; Jacobs et al., 2003). Rather, specific interventions that are conducted during the inpatient stay are the key (Brown et al., 2005; Linehan et al., 2006). Unfortunately, hospital stays are often too short to allow any specific intervention to be delivered (Goldsmith et al., 2002). Nonetheless, without other strategies to keep a patient safe who poses a short-term danger to himself or herself, hospitalization may be an appropriate strategy (VA and DoD, 2013; Jacobs et al., 2003).

Table B.9—Continued

Rationale for measure inclusion	An alternative is to develop a safety plan with a suicidal patient and his or her family and support network. These plans are widely used by mental health providers (Miller, Jacobs and Gutheil, 1998). Safety plans generally include personalized coping strategies and resources defined in conjunction with the patient to reduce the suicide risk. A Safety Plan Worksheet was added to the VA/DoD Suicide Risk CPG in 2014 (VA, 2013). No evidence exists to support their effectiveness (Goldsmith et al., 2002), but detecting a treatment effect in programs targeting low-base-rate behaviors, such as suicide, is difficult (Jacobs et al., 2003). One component of safety plans, means restriction, does hold promise (Ramchand et al., 2011). *Means restriction* refers to any strategy that removes a suicidal patient's access to lethal means. This typically refers to removal of firearms from the patient's residence or access to firearms while on duty but also includes public health initiatives, such as packaging medications that are lethal when overdosed in blister packs or engineering shower rods to fail if an individual attempts to use one to hang himself or herself (Ramchand et al., 2011). Safety plans, particularly when they involve the patient's family, can and should include means-restriction plans. Given that firearms are the most common route to suicide among service members, DoD providers may wish to pay particular attention to developing plans with the patient and family to restrict firearm access (Blue Ribbon Work Group on Suicide Prevention in the Veteran Population, 2008; Hilton et al., 2009). Note that safety plans, which put specific suicide risk reduction strategies into place, are distinct from no-suicide contracts, in which the patient simply promises not to engage in suicidal behavior. No-suicide contracts are not recommended because of the lack of supportive empirical evidence and concern that providers may not closely monitor suicidal patients who sign such contracts (VA and DoD, 2013).
Feasibility	The data source for this measure is the patient's medical record because of the complexity of the screening and assessment for SI risk and the determination of an appropriate follow-up. Because the publication of the suicide risk CPG occurred just shortly before data collection, it is probable that insufficient time had elapsed for the generalized adoption of the elements of the CPG (e.g., categorizing suicide risk level as high, intermediate, or low). A minimum level of care was utilized here to evaluate the follow-up for SI. These specifications may be altered in the future to better reflect key elements in the CPG.

[a] The time frame in this study for identifying positive SI was reduced early in the abstraction to the first six months of the measurement period to reduce abstractor burden.

Table B.10
Depression-T5: Duration of Antidepressant Treatment

MEASURE SUMMARY	
Measure statement	Percentage of depression patients with a newly prescribed antidepressant medication for: T5a: 12 weeks T5b: Six months
Numerator	T5a: Effective Acute Phase Treatment: At least 84 days (12 weeks) of continuous treatment with antidepressant medication during the 114-day period following the initial prescription. T5b: Effective Continuation Phase Treatment: At least 180 days (six months) of continuous treatment with antidepressant medication during the 231-day period following the initial prescription.
Denominator	Patients with depression with a new prescription for an antidepressant
Measure type	Process
Care setting	Outpatient

NUMERATOR SPECIFICATIONS		Data Source
Effective acute phase treatment	At least 84 days (12 weeks) of continuous treatment with antidepressant medication during the 114-day period following the initial prescription. Gaps in medication treatment up to a total of 30 days during the 114-day period are allowed. Gaps can include either washout period gaps to change medication or treatment gaps to refill the same medication. Regardless of the number of gaps, there may be no more than 30 gap days. Count any combination of gaps (e.g., two washout gaps of 15 days each, or two washout gaps of 10 days each and one treatment gap of 10 days). "Treatment days" are equal to the sum all the days' supply for each script that falls in the treatment period, regardless of overlapping prescriptions or prescriptions for the same or different applicable medications. If a prescription date falls at the end of the measurement interval, the days' supply that fall after the end of the interval are not counted. For example, in the Effective Continuation Phase Treatment indicator, a prescription of 90-days (3 months) supply dispensed on the 151st day will have 80 days counted in the 231-day interval.	PDTS: Therapeutic Class (THERCLSS), Product Name (PRODNAME), and Days Supply (DAYSUPLY)
Effective continuation phase treatment	At least 180 days (6 months) of continuous treatment with antidepressant medication during the 231-day period following the initial prescription. Gaps in medication treatment up to a total of 51 days during the 231-day period are allowed.	PDTS: Therapeutic Class (THERCLSS), Product Name (PRODNAME), and Days Supply (DAYSUPLY)

Table B.10—Continued

Effective continuation phase treatment	Gaps can include either washout period gaps to change medication or treatment gaps to refill the same medication. Regardless of the number of gaps, gap days may total no more than 51. Count any combination of gaps (e.g., two washout gaps, each 25 days or two washout gaps of 10 days each and one treatment gap of 10 days). "Treatment days" are equal to the sum all the days' supply for each script that falls in the treatment period, regardless of overlapping prescriptions or prescriptions for the same or different applicable medications. If a prescription date falls at the end of the measurement interval, the days' supply that fall after the end of the interval are not counted. For example, in the Effective Continuation Phase Treatment indicator, a prescription of 90-days (3 months) supply dispensed on the 151st day will have 80 days counted in the 231-day interval.	PDTS: Therapeutic Class (THERCLSS), Product Name (PRODNAME), and Days Supply (DAYSUPLY)
DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with depression	See Table B.3. (See measure application algorithm below)	CAPER
New prescription	Prescription for an antidepressant in the 30 days prior or 14 days after the first depression encounter during the measurement period and no antidepressant treatment in the 90 days prior	PDTS
Anti-depressant	Miscellaneous antidepressants: bupropion, vilazodone, vortioxetine Monoamine oxidase inhibitors: isocarboxazid, phenelzine, selegiline, tranylcypromine Phenylpiperazine antidepressants: nefazodone, trazodone Psychotherapeutic combinations: amitriptyline-chlordiazepoxide, amitriptyline-perphenazine, fluoxetine-olanzapine SNRI antidepressants : desvenlafaxine, duloxetine, venlafaxine, levomilnacipran, milnacipran SSRI antidepressants: citalopram, escitalopram, fluoxetine, fluvoxamine, paroxetine, sertraline Tetracyclic antidepressants: maprotiline, mirtazapine Tricyclic antidepressants: amitriptyline, amoxapine, clomipramine, desipramine, doxepin, imipramine, nortriptyline, protriptyline, trimipramine	PDTS: Therapeutic Class (THERCLSS), Product Name (PRODNAME), and Days Supply (DAYSUPLY)
Measure application algorithm	**Step 1:** Identify all members who met at least one of the following criteria during the Intake Period (measurement year). • At least one principal diagnosis of depression in an outpatient, ED, intensive outpatient or partial hospitalization setting, OR • At least two visits in an outpatient, ED, intensive outpatient or partial hospitalization setting on different dates of service with any diagnosis depression, OR • At least one inpatient (acute or non-acute) claim/encounter with any diagnosis of depression **Codes to Identify Depression** ICD-9-CM Diagnosis: 296.20–296.25, 296.30–296.35, 298.0, 311	

Table B.10—Continued

Measure application algorithm	**CPT Codes to Identify Visit Type** • Emergency Department: 99281–99285 • Outpatient psychotherapy: 90804–90815 • Education for self-management: 98960–98962 • Group education: 99078 • Outpatient E&M: 99201–99205, 99211–99215, 99217–99220 • Outpatient consultation: 99241–99245 • Home visit: 99341–99345, 99347–99350, 99510 • Preventive medicine: 99384–99387, 99394–99397, 99401–99404, 99411, 99412 **HCPCS:** • Social work, activity therapy, self-care education, group therapy: G0155, G0176, G0177, G0409–G0411 • Behavioral health counseling, medication training, partial hospitalization/ community treatment, rehabilitation and community support: H0002, H0004, H0031, H0034–H0037, H0039, H0040, H2000, H2001, H2010–H2020 • Mental health medication management: M0064 • Partial hospitalization, intensive outpatient psychiatric treatment, crisis intervention: S0201, S9480, S9484, S9485 **CPT codes and place of service (POS)** • Psychiatric diagnostic: 90801, 90802 **2013:** 90791, 90792 • Psychotherapy and crisis (2013): 90832–90834, 90836–90840 • Inpatient/partial hospitalization psychotherapy: 90816–90819, 90821–90824, 90826–90829 • Psychoanalysis: 90845 • Family/group: 90847, 90849, 90853, 90857 • Medication management: 90862, **2013:** 90863[a] • Electroconvulsive therapy (ECT): 90870 • Biofeedback: 90875, 90876 • Inpatient E&M: 99221–99223 • Subsequent hospital care: 99231–99233, 99238, 99239 • Inpatient consultation: 99251–99255 **WITH outpatient POS:** Above CPT-related encounter was attached to an outpatient visit. **Step 2:** Determine the Index Episode Start Date (IESD). For each member identified in step 1, identify the date of the earliest encounter during the Intake Period with any diagnosis of depression. If the member had more than one encounter during the Intake Period, include only the first encounter.

Table B.10—Continued

Measure application algorithm	**Step 3:** Identify the Index Prescription Start Date (IPSD). The IPSD is the date of the earliest dispensing event for an antidepressant medication during the period of 30 days prior to the IESD (inclusive) through 14 days after the IESD (inclusive). Exclude members who did not fill a prescription for an antidepressant medication during this period. **Step 4:** Test for Negative Medication History. Exclude members who filled a prescription for an antidepressant in the 90 days (3 months) prior to the IPSD. **Step 5:** Calculate continuous enrollment. Members must be continuously enrolled (did not have two or more consecutive months of TRICARE ineligibility based on the VM6 Beneficiary Level files) for 90 days (3 months) prior to the IESD to 245 days after the IESD.	
Exclusions	Patient with a prescription filled for an antidepressant in the 90 days prior to the date of the new prescription	PDTS
MEASURE BACKGROUND		
Measure source	National Quality Forum, "NQF #0105 – Antidepressant Medication Management," Last Updated: December 23, 2014. As of March 1, 2015: http://www.qualityforum.org/QPS/0105 National Committee for Quality Assurance, HEDIS 2015. As of March 1, 2015: http://www.ncqa.org/HEDISQualityMeasurement/HEDISMeasures/HEDIS2015.aspx	
Rationale for measure inclusion	**Source/Adaptation** This measure is NQF-endorsed and has been part of the HEDIS Quality Measurement set. The measure can be implemented using exclusively administrative data. It may also be implemented using medical record data to supplement the administrative data for reasons for early medication discontinuation. **Guideline Support** This indicator is consistent with recommendations in the *VA/DoD Clinical Practice Guideline for Management of Major Depressive Disorder* (2009a). The guideline strongly recommends antidepressant medications as a first-line treatment option for patients with MDD (see also Fournier et al., 2010; Moncrieff, Wessely and Hardy, 2004). Given limited evidence to recommend one antidepressant over another (Gartlehner et al., 2007), the guideline suggests clinicians choose between medications based on side effect profiles, patient and family history, concurrent medical illness, and other prescribed medications. Recommended classes of antidepressants include selective serotonin reuptake inhibitors (SSRIs), serotonin and norepinephrine reuptake inhibitors (SNRIs), buproprion, and mirtazapine (VA and DoD, 2009a). For patients who remit, the guidelines recommend that patients continue to take the same dose for 6-12 months to reduce the risk of relapse. The CPG authors rate the strength of the evidence supporting each of these recommendations as an 'A', which corresponds to a "strong recommendation that clinicians provided the intervention to eligible patients" and is reserved for recommendations where "good evidence was found that the intervention improves important health outcomes and ... benefits substantially outweigh harm" (VA and DoD, 2009a).	

Table B.10—Continued

Rationale for measure inclusion	The VA/DoD *Clinical Practice Guideline* is consistent with the civilian treatment guideline issued by the American Psychiatric Association (Glenberg et al., 2010). The APA also recommends antidepressants as a treatment option for depression, and that for patients who respond to antidepressants, that treatment be continued for 4-9 months to reduce the risk of relapse. Both recommendations are graded by the guideline authors with an 'I', which corresponds to recommendations that are supported with "substantial clinical confidence" (Glenberg et al., 2010). Similarly, the Institute for Clinical Systems Improvement guideline recommends antidepressants for patients with depression, indicating that the time to remission can take as long as 3 months, and that the medication be continued for 6-12 months for patients who respond to antidepressants (Trangle et al., 2012). **Research Evidence** The empirical literature supports the claim that an antidepressant trial should be optimized before shifting to a new treatment strategy. For example, in a trial of fluoxetine, even among patients who showed no improvement at week 6, 31-41 percent achieved full remission by 12 weeks (Quitkin et al., 2003). Although antidepressant treatments should be continued for at least 6 months after remission to reduce the risk of relapse (VA and DoD, 2009a), half of patients who begin treatment with an antidepressant discontinue the medication within 1-6 months after initiation (Melartin et al., 2005; Simon, 2002). These early discontinuations are associated with an increased risk for relapse and future depressive episodes (Melartin et al., 2005; Simon, 2002).
Feasibility	This measure was implemented as an administrative data measure making it highly feasible. However, calculating the numerator from the PDTS alone lacks the opportunity to capture data about valid reasons why an initiated medication trial may have been terminated early, which would only have been available from medical record review.

[a] Code +90863 (Pharmacologic management, including prescription and review of medication, when performed with psychotherapy services [for providers who may not report E&M codes]) is included in this study due to the common use of prescribing clinical psychologists in MTFs.

Table B.11
Depression-T6: Follow-Up of New Prescription for Antidepressant

MEASURE SUMMARY		
Measure statement	Percentage of depression patients newly prescribed an antidepressant with follow-up visit within 30 days	
Numerator	Depression patients who have a follow-up visit within 30 days of the new prescription for an antidepressant	
Denominator	Patients with depression with a new prescription for an antidepressant	
Measure type	Process	
Care setting	Outpatient	
NUMERATOR SPECIFICATIONS		**Data Source**
Follow-up visit	An outpatient, depression-related E&M visit within 30 days following the new prescription for the antidepressant	CAPER, TED-NI
Outpatient E&M visit	See Outpatient Evaluation and Management Visit in Key Definitions. The E&M visit is used to approximate medication management visits, although this definition is likely to overestimate the actual number of medication related visits.	CAPER, TED-NI

Table B.11—Continued

DENOMINATOR SPECIFICATIONS		Data Source
Patients with depression	ICD-9-CM Diagnosis codes: 296.20-296.25, 296.30-296.35, 298.0, 311. (See measure application algorithm below.)	CAPER, TED-NI, SIDR, TED-I
New prescription	Prescription for an antidepressant in the 30 days prior or 14 days after the first depression encounter during the measurement period with no prescription for an antidepressant in the prior 90 days	PDTS
Antidepressant	Miscellaneous antidepressants: bupropion, vilazodone, vortioxetine Monoamine oxidase inhibitors: isocarboxazid, phenelzine, selegiline, tranylcypromine Phenylpiperazine antidepressants: nefazodone, trazodone Psychotherapeutic combinations: amitriptyline-chlordiazepoxide, amitriptyline-perphenazine, fluoxetine-olanzapine SNRI antidepressants : desvenlafaxine, duloxetine, venlafaxine, levomilnacipran, milnacipran SSRI antidepressants: citalopram, escitalopram, fluoxetine, fluvoxamine, paroxetine, sertraline Tetracyclic antidepressants: maprotiline, mirtazapine Tricyclic antidepressants: amitriptyline, amoxapine, clomipramine, desipramine, doxepin, imipramine, nortriptyline, protriptyline, trimipramine	PDTS: Therapeutic Class (THERCLSS), Product Name (PRODNAME), and Days Supply (DAYSUPLY)
Measure application algorithm	The following algorithm is based on the implementation of NQF measure #0105 Antidepressant Medication Management on which the prior measure Depression-T5 is based. It has been adapted to reflect the data sources used for this study. **Step 1:** Identify all members who met at least one of the following criteria during the Intake Period (measurement year). • At least one principal diagnosis of depression in an outpatient, ED, intensive outpatient or partial hospitalization setting, OR • At least two visits in an outpatient, ED, intensive outpatient or partial hospitalization setting on different dates of service with any diagnosis depression, OR • At least one inpatient (acute or non-acute) claim/encounter with any diagnosis of depression **Codes to Identify Depression** ICD-9-CM Diagnosis: 296.20–296.25, 296.30–296.35, 298.0, 311 **CPT Codes to Identify Visit Type** • Emergency Department: 99281–99285 • Outpatient psychotherapy: 90804–90815 • Education for self-management: 98960–98962 • Group education: 99078 • Outpatient E&M: 99201–99205, 99211–99215, 99217–99220 • Outpatient consultation: 99241–99245 • Home visit: 99341–99345, 99347–99350, 99510 • Preventive medicine: 99384–99387, 99394–99397, 99401–99404, 99411, 99412	CAPER, TED-NI, SIDR, TED-I

Table B.11—Continued

Measure application algorithm	**HCPCS:** • Social work, activity therapy, self-care education, group therapy: G0155, G0176, G0177, G0409–G0411 • Behavioral health counseling, medication training, partial hospitalization/ community treatment, rehabilitation and community support: H0002, H0004, H0031, H0034–H0037, H0039, H0040, H2000, H2001, H2010–H2020 • Mental health medication management: M0064 • Partial hospitalization, intensive outpatient psychiatric treatment, crisis intervention: S0201, S9480, S9484, S9485 **CPT codes and place of service (POS)** • Psychiatric diagnostic: 90801, 90802 **2013:** 90791, 90792 • Psychotherapy and crisis (2013): 90832–90834, 90836–90840 • Inpatient/partial hospitalization psychotherapy: 90816–90819, 90821–90824, 90826–90829 • Psychoanalysis: 90845 • Family/group: 90847, 90849, 90853, 90857 • Medication management: 90862, **2013:** 90863[a] • Electroconvulsive therapy (ECT): 90870 • Biofeedback: 90875, 90876 • Inpatient E&M: 99221–99223 • Subsequent hospital care: 99231–99233, 99238, 99239 • Inpatient consultation: 99251–99255. **WITH outpatient POS:** Above CPT-related encounter was attached to an outpatient visit. **Step 2:** Determine the Index Episode Start Date (IESD). For each member identified in step 1, identify the date of the earliest encounter during the Intake Period with any diagnosis of depression. If the member had more than one encounter during the Intake Period, include only the first encounter. **Step 3:** Identify the Index Prescription Start Date (IPSD). The IPSD is the date of the earliest dispensing event for an antidepressant medication during the period of 30 days prior to the IESD (inclusive) through 14 days after the IESD (inclusive). Exclude members who did not fill a prescription for an antidepressant medication during this period. **Step 4:** Test for Negative Medication History. Exclude members who filled a prescription for an antidepressant in the 90 days (3 months) prior to the IPSD	CAPER, TED-NI, SIDR, TED-I

Table B.11—Continued

Exclusions	Patient with an acute or nonacute hospital admission during the 30-day follow-up period either for a mental health or non-mental health reason.	SIDR, TED-I
MEASURE BACKGROUND		
Measure source	New measure	
Rationale for measure inclusion	**Guideline Support** This is a newly developed measure that will require validation. We believe the 30-day follow-up window represents an adequate trial to allow the provider to make a determination of initial response and evaluate side effects experienced by the patient (VA and DoD, 2010b). The follow-up visit provides an opportunity to address any medication side effects to enhance adherence. Although the RAND team selected a 30-day window for the first follow-up, we note that this time period was selected based on clinical judgment. Research has not yet been conducted to determine the precise threshold for the time period. Validation research will be necessary in order to determine the time frame that jointly maximizes the time available for the provider and patient to schedule a visit, while ensuring that the time frame is no longer than the period after which treatment engagement suffers. Finally, we draw attention to the different time frames specified for this measure and the T9 measures (PTSD and depression). This measure checks for two E&M visits (prescribing visit and follow-up E&M visit) within *30 days* while the T9 measure allows *eight weeks* in which to complete the second E&M visit. The reason for this difference is that the T9 measure assesses the *minimally* appropriate level of care for mental health patients, while this measure sets a higher threshold for ideal care. **Research Evidence** Although there is clear evidence that antidepressant medications are associated with symptom reduction (Fournier et al., 2010), one-third of patients will discontinue treatment within a month of receiving the prescription (Simon, 2002). For this reason, it is important for providers to maintain contact with patients in order to assess side effects and barriers to medication adherence and treatment engagement. Providers who follow-up with patients have the opportunity to work collaboratively with them to problem solve strategies to maintain medication adherence and treatment engagement.	
Feasibility	This measure was implemented using administrative claims data and pharmacy data making it very feasible to operationalize. An appropriate follow-up visit was defined as any one of a series of selected E&M codes (see Key Definitions). CAPER data revealed somewhat frequent provider use of the E&M code 99499 "Unlisted evaluation and management service" which is not included in the E&M visit definition used for this study. Providers using this CPT code make it difficult to know the actual complexity of their patient encounters. Use of this code in the absence of other more specific codes could result in an increased likelihood of appropriate care's not being recognized due to nonspecific coding with the result of a lower performance on this quality measure.	

[a] Code +90863 (Pharmacologic management, including prescription and review of medication, when performed with psychotherapy services [for providers who may not report E&M codes]) is included in this study due to the common use of prescribing clinical psychologists in MTFs.

Table B.12
Depression-T7: Evidence-Based Psychotherapy

MEASURE SUMMARY	
Measure statement	Percentage of depression patients who receive evidence-based psychotherapy
Numerator	Patients in the denominator who received any evidence-based psychotherapy during the measurement period
Denominator	Patients with depression who received any psychotherapy
Measure type	Process
Care setting	Outpatient

NUMERATOR SPECIFICATIONS		**Data Source**
Outpatient psychotherapy	See Outpatient psychotherapy in Key Definitions	CAPER
Evidence-based psychotherapy	Cognitive behavioral therapy (CBT) (National Collaborating Centre for Mental Health, 2004) is recommended to treat depression and including interpersonal psychotherapy (IPT) (Klerman et al., 1984) and problem-solving therapy (PST) (National Collaborating Centre for Mental Health, 2004). The following components (at least two) were used to identify a psychotherapy session that incorporated evidence-based therapy: • *Thoughts:* Discussion of the role of thoughts in improving or worsening depression • *Behaviors:* Addressing the role of behaviors in improving or worsening depression • *Homework:* Between-session homework, practice, or assignments to try a skill or idea introduced during the session	AHLTA
Total number of evidence-based psychotherapy visits	Total number of visits during the measurement period with the same provider as the first evidence-based psychotherapy visit during the measurement period.	AHLTA

DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with depression	See Table B.3.	CAPER, SIDR
Measurement period	Twelve-month measurement period after entry into the depression cohort	CAPER, SIDR
Exclusions	None	

MEASURE BACKGROUND	
Measure source	Adapted from the following: Farmer, Carrie M., Katherine E. Watkins, Brad Smith, Susan M. Paddock, Abigail Woodroffe, Jacob Solomon, Melony E. Sorbero, Kimberly A. Hepner, Lanna Forrest, Lisa R. Shugarman, Cathy Call, and Harold A. Pincus, *Program Evaluation of VHA Mental Health Services: Medical Record Review Report*, Alexandria, Va.: Altarum Institute and RAND–University of Pittsburgh Health Institute, 2010.

Table B.12—Continued

Rationale for measure Inclusion	**Source/Adaptation** This measure comes from the VHA Mental Health Program Evaluation (Farmer et al., 2010; Watkins, Pincus, Paddock, et al., 2011) and has been updated from the source to include IPT. **Guideline Support** This measure is consistent with the recommendations of the *VA/DoD Clinical Practice Guideline for Management of Major Depressive Disorder* (2009a). This guideline identifies cognitive behavioral therapy (CBT), interpersonal psychotherapy (IPT), and problem solving therapy (PST) as evidence-based psychotherapies for MDD with the strongest, most extensive evidence base for the first two. The guideline grades the strength of the evidence for both as 'I' (reserved for conclusions supported by at least one well-conducted RCT), and grade the strength of the recommendation as an 'A' indicating that there is good evidence to support the claim that the intervention improved outcomes and that the benefits outweigh harm. **Research Evidence** Selection of these two psychotherapy modalities as the first-line behavioral treatments in specialty mental health care is consistent with other systematic reviews. Cognitive behavioral therapy for MDD outperforms waitlist controls or placebo interventions with respect to MDD response and remission and performs as well as other evidence-based treatments (DeRubeis et al., 2005; Dimidjian et al., 2006; Ellis, 2004; National Collaborating Centre for Mental Health, 2004). Practice guidelines from the American Psychiatric Association acknowledge this evidence and include CBT as an appropriate first-line treatment for MDD (Glenberg et al., 2010). Systematic reviews of IPT have included multiple well-conducted RCT trials showing a symptom reduction relative to placebo (de Mello et al., 2005; National Collaborating Centre for Mental Health, 2004). The effect sizes associated with IPT (small to moderate) were similar to those found for CBT, and comparative effectiveness trials showed that IPT performed similarly to both CBT and antidepressants (de Mello et al., 2005; National Collaborating Centre for Mental Health, 2004). American Psychiatric Association practice guidelines also include IPT, along with CBT, as the psychotherapeutic approach with the strongest evidence (Glenberg et al., 2010). The guideline authors give IPT an "I" rating, which corresponds to a recommendation with "substantial clinical confidence" (Glenberg et al., 2010).
Feasibility	The denominator for this measure (patients with depression and those patients receiving any psychotherapy) were identified with administrative claim data. The numerator required medical record review to determine the therapy approach used to treat the patient's depression and assess whether therapy was evidence-based. The complexity of the content of mental health notes and variability of mental health provider documentation styles made this a challenging task for the medical record abstractors.

Table B.13
Depression-T8: Psychotherapy for New Treatment Episode

MEASURE SUMMARY		
Measure statement	Percentage of depression patients in a new treatment episode who received any psychotherapy within four months	
Numerator	Patients in the denominator who receive any psychotherapy within four months following the start of a new treatment episode	
Denominator	Patients in a new treatment episode of depression	
Measure type	Process	
Care setting	Outpatient	
NUMERATOR SPECIFICATIONS		**Data Source**
Psychotherapy	See Outpatient Psychotherapy in Key Definitions	CAPER, TED-NI
Any psychotherapy	One or more psychotherapy encounters in the four months following the start of the new treatment episode. If the initial visit triggering the new treatment episode is a psychotherapy-related encounter, there must be at least one additional psychotherapy encounter to meet the performance criteria for this measure.	CAPER, TED-NI
DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with depression	See Table B.3.	CAPER, TED-NI, SIDR, TED-I
NTE	See New Treatment Episode – Depression in Key Definitions	CAPER, TED-NI, SIDR, TED-I, PDTS, AHLTA
Exclusions	None	
MEASURE BACKGROUND		
Measure source	Adapted from: Sorbero, M., Mannle, T.E., Smith, B., Watkins, K.E., Woodroffe, A., and Paddock, S.M., *Program Evaluation of VHA Mental Health Services: Administrative Data Report* (Contract# GS 10 F-0261k), Alexandria, Va.: Altarum Institute and RAND-University of Pittsburgh Health Institute, 2010.	

Table B.13—Continued

Rationale for measure inclusion	**Source/Adaptation** This measure was modified from a measure used in the VA Mental Health Program Evaluation (Farmer et al., 2010; Watkins et al., 2011). Modifications include a change in the definition of a break in care from five months to six months to match the time frame that is more generally used. The requirement for a six-month break in antidepressant treatment was maintained from the VA evaluation. However, in this study, NTEs were limited to those diagnosed in the outpatient setting. **Guideline Support** This measure is consistent with the recommendations of the *VA/DoD Clinical Practice Guideline for Management of Major Depressive Disorder* (2009a) and *VA/DoD Clinical Practice Guideline for Post-Traumatic Stress* (2010b), which recommend psychotherapy as a first-line treatment option. The CPG authors identify cognitive behavioral therapy (CBT) and interpersonal psychotherapy (IPT) as the two evidence-based psychotherapies for MDD with the strongest, most extensive evidence base. For PTSD, the CPG authors identified trauma-focused cognitive behavioral therapy (TF-CBT) and stress inoculation training (SIT) as the two modalities of evidence-based psychotherapy. The strength of the evidence for all recommendations was graded an 'A' indicating that there is good evidence to support the claim that the intervention improved outcomes. The American Psychiatric Association practice guidelines recommend that CBT be considered a first line treatment option for both MDD and PTSD (American Psychiatric Association, 2004; Glenberg et al., 2010). Other appropriate treatments for PTSD included TF-CBT variants (e.g., EMDR, imagery rehearsal and imagery rehearsal) and stress inoculation. An Agency for Healthcare Research and Quality report on treatment for PTSD confirms these conclusions (Jonas et al., 2013). **Research Evidence** Although there is research evidence supporting the claim that psychotherapy is effective as the primary or adjunct treatment for PTSD, this indicator does not capture the type of psychotherapy offered (i.e., evidence-based or not). Further, the threshold for success on the measure is met after a single psychotherapy session, which is unlikely to be adequate to achieve a response. For this reason this indicator should be used descriptively only.
Feasibility	The numerator and denominator for this measure were calculated with administrative claims data making it very feasible to implement. Because of this study's focus on outpatient care, the definition of an NTE was limited to a new diagnosis at an outpatient visit. Therefore, patients whose NTE was initiated with a hospitalization were not included in the denominator for this measure.

Table B.14
Depression-T9: Receipt of Care in First Eight Weeks

MEASURE SUMMARY		
Measure statement	Percentage of depression patients in a new treatment episode who received four psychotherapy visits or two evaluation and management visits within the first eight weeks	
Numerator	Patients in the denominator who receive four psychotherapy visits or two evaluation and management visits within eight weeks of a new treatment episode	
Denominator	Patients in a new treatment episode of depression	
Measure type	Process	
Care setting	Outpatient	
NUMERATOR SPECIFICATIONS		**Data Source**
Psychotherapy	See Outpatient Psychotherapy in Key Definitions. Measure assesses whether at least four psychotherapy visits occurred during the eight weeks following the NTE visit	CAPER, TED-NI
Outpatient E&M visit	See Outpatient Evaluation and Management Visit in Key Definitions. Measure assesses whether at least two E&M visits occurred during the eight weeks following the NTE visit. The E&M visit is used to approximate medication management visits, although this definition is likely to overestimate the actual number of medication related visits.	CAPER, TED-NI
DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with depression	See Table B.3.	CAPER, TED-NI, SIDR, TED-I
NTE	See New Treatment Episode – PTSD in Key Definitions	CAPER, TED-NI. SIDR, TED-I, PDTS, AHLTA
Exclusions	Patient with an acute or nonacute hospital admission during the eight-week follow-up period either for a mental health or non-mental health reason. These patients are excluded from the measure because inpatient admission may prevent an outpatient follow-up visit from occurring.	SIDR, TED-I
MEASURE BACKGROUND		
Measure source	New measure	

Table B.14—Continued

Rationale for measure inclusion	**Source/Adaptation** This measure was developed for this project via a RAND consensus process involving five clinician researchers and quality measurement experts. It is designed to assess a minimally appropriate level of care for mental health patients entering a new treatment episode. **Guideline Support** **Research Evidence** The VA/DoD CPGs for MDD and PTSD do not state explicitly the minimum or optimal number of visits during the initial treatment period (VA and DoD, 2009a; VA and DoD, 2010b). However, the measure is consistent with a key element of the MDD guideline which states that "patients require frequent visits early in treatment to assess response to intervention, suicidal ideation, side effects, and psychosocial support systems (VA and DoD, 2009a). The number of psychotherapy visits (4) matches the shortest evidence-based intervention recommended in the PTSD clinical practice guideline (brief CBT for acute stress disorder (VA and DoD, 2010b). The definition is also consistent with the technical specifications used in the VA Mental Health Program Evaluation in which any eight week period with fewer than four psychotherapy visits was defined as a period in which the patient was *not* receiving psychotherapy (Horvitz-Lennon et al., 2009). Two medication management visits within eight weeks was selected as minimally appropriate follow-up because, in addition to the first visit to prescribe the new medication, a second visit would be needed to meet VA/DoD practice guidelines. These guidelines recommend that the dose be titrated at four to six weeks if symptoms are nonresponsive, and that the prescription should be changed at eight to 12 weeks if the patient's symptoms remain nonresponsive (VA and DoD, 2009a). If the four to six-week visit occurs on schedule with guidelines, the care would meet the threshold for this measure. Note that this measure provides a two-week buffer time period beyond CPG recommendations. We draw attention to the different time frames specified for this measure and the T6 measures. For medication management, this measure allows *eight weeks* in which to complete the second visit, while the T6 measures assess whether the second visit occurred within *30 days*. The reason for this difference is this measure assesses the minimally appropriate level of care for mental health patients, while T6 sets a higher threshold for ideal care.
Feasibility	The numerator and denominator for this measure were calculated with administrative claims data making it very feasible to implement. CAPER data revealed somewhat frequent provider use of the E&M code 99499 "Unlisted evaluation and management service" which is not included in the medication management definition used for this study. Frequent use of this CPT code in the absence of more specific codes may result in an increased likelihood of failing this quality measure where evaluation and management occurred but at a visit that was not more specifically coded to the level of its complexity.

Table B.15
Depression-T10: Response to Treatment at Six Months

MEASURE SUMMARY	
Measure statement	Percentage of depression patients with response to treatment at six months
Numerator	Patients who have a six-month (+/- 30 days) PHQ-9 score that is reduced by ≥ 50% from the initial PHQ-9 score
Denominator	Patients with depression and an initial PHQ-9 score positive for depression (PHQ-9 score greater than 9)
Measure type	Outcome
Care setting	Outpatient

NUMERATOR SPECIFICATIONS		Data Source
50%-or-more reduction in PHQ-9 score within six months	The nine-item Patient Health Questionnaire (PHQ-9) is the depression module of the full PHQ scale and is in the public domain (Kroenke, Spitzer and Williams, 2001). Each item corresponds to one of the DSM-IV criteria for major depressive disorder and is administered as a self-report scale completed by the patient. The measure can be scored continuously (from 0 to 27) or via a diagnostic algorithm that matches item responses to the diagnostic criteria of the DSM-IV (Kroenke, Spitzer and Williams, 2001). Collect PHQ-9 scores from the time of inclusion criteria of depression diagnosis and PHQ-9 score greater than nine are met (which is the index or anchor date) until seven months have elapsed. Calculate a response rate (PHQ-9 score with a 50%-or-more score reduction) from the most recent PHQ-9 six months +/- 30 days from the index date. Patients with no PHQ-9 administered after the index date during the next seven months are included in the denominator as "no response." This outcome measure and would require the development of a risk adjustment model for its application in the MHS. The risk adjustment model developed by Minnesota Community Measurement (measure steward) is not applicable to the MHS population.	AHLTA or BHDP[a]

DENOMINATOR SPECIFICATIONS		Data Source
Patients with depression	See Table B.3. Include patients with any of the following ICD-9 CM codes: 296.2x, 296.3x, 300.4. For primary care providers, the code may have been primary or secondary; for behavioral health providers, the code must have been primary. Because the BHDP was the data source for the numerator, the denominator was limited to the Army and those receiving direct care only.	CAPER, SIDR
PHQ-9 score of more than nine	Patients with depression with a PHQ-9 score of more than nine in the first five months of the 12-month measurement period.[b] For NTEs starting in the first month of the first measurement period, include scores in the 30 days prior to the NTE date.	AHLTA or BHDP

Table B.15—Continued

PHQ-9 score of more than nine	During the first five months of the 12-month measurement period, depression patient was either seen at an office visit or contacted via another method (phone: 99441, 99442, 99443; email: 99444), Encounter may have been a primary care or behavioral health outpatient visit, telephone or email contact associated with ICD-9 CM codes 296.2x, 296.3x, 300.4. For primary care providers, the code may have been primary or secondary; for behavioral health providers, the code must have been primary.[7]	CAPER
	Behavioral health providers (any setting): Psychiatrist: 070, 071, 073, 076 Psychologist/psychoanalyst: 072, 702 Psychiatric nurse practitioner: 611 Clinical social worker: 703, 714	CAPER: Provider Specialty (PROVSPEC1)
	Primary care providers (any setting): Family practice physician: 000, 001, 003 Internal medicine physician: 008, 011, 028, 097-099 Geriatrician: 017 Primary care nurse practitioner: 604, 605	
	Primary care providers in conjunction with specific setting: Clinical Nurse-entry level nurse practitioner: 610 Physician assistant: 901 *In conjunction with:* Family practice clinic: AGA, AGZ, BGA, BGZ Internal medicine clinic: AAA, BAA Primary care clinic: BHA, BHZ	CAPER: Provider Specialty (PROVSPEC1); MEPRS code, 3rd level (MEPR3)
Exclusions	Exclusions included the following: *Death* during the measurement time frame *Permanent nursing home resident* during the measurement time frame. There were no direct care permanent nursing home residents in the sample. *Hospice:* Enrolled in hospice during the measurement time frame. There were no direct care hospice patients in the sample. *Bipolar Disorder (in any position) during the measurement time frame:* 296.0x Bipolar I disorder 296.1x Manic disorder 296.4x Bipolar I disorder, most recent episode manic 296.5x Bipolar I disorder, most recent episode depressed 296.6x Bipolar I disorder, most recent episode mixed 296.7 Bipolar I disorder, most recent episode unspecified 296.80 Bipolar disorder NOS 296.81 Atypical manic disorder 296.82 Atypical depressive disorder 296.89 Bipolar II disorder	

Table B.15—Continued

Exclusions	*Personality Disorder (in any position) during the measurement time frame:* 301.0 Paranoid personality disorder 301.1 Affective personality disorder 301.10 Affective personality disorder unspecified 301.11 Chronic hypomanic personality disorder 301.12 Chronic depressive personality disorder 301.13 Cyclothymic disorder 301.2 Schizoid personality disorder 301.20 Schizoid personality disorder unspecified 301.21 Introverted personality 301.22 Schizotypal personality disorder 301.3 Explosive personality disorder 301.4 Obsessive-compulsive personality disorder 301.5 Histrionic personality disorder 301.50 Histrionic personality disorder unspecified 301.51 Chronic factitious illness with physical symptoms 301.59 Other histrionic personality disorder 301.6 Dependent personality disorder 301.7 Antisocial personality disorder 301.8 Other personality disorders 301.81 Narcissistic personality disorder 301.82 Avoidant personality disorder 301.83 Borderline personality disorder 301.84 Passive-aggressive personality 301.89 Other personality disorders 301.9 Unspecified personality disorder

MEASURE BACKGROUND

Measure source	National Quality Forum, "NQF #1884 Depression Response at 6 Months—Progress Towards Remission," last updated March 4, 2014. As of March 1, 2015: http://www.qualityforum.org/QPS/0711
Rationale for measure inclusion	**Source/Adaptation** This measure is an NQF-endorsed measure for monitoring depression response to treatment (progress toward remission) at six months based on changes in PHQ-9 scores. There is an increasing emphasis on the need to deliver treatment that is evidence-based and effective. Harding and colleagues (Harding et al., 2011) make the case for measurement-based care as the standard for psychiatric practice to align treatment for psychological health disorders with physical health care. Standardized, repeated measurement of MDD symptoms allows clinicians to track individual patient response to treatment, and also allows administrators and organizations to monitor the treatment outcomes of larger patient groups. Systematic measurement of response to treatment is considered an important component of collaborative care. In randomized trials, compared to treatment as usual, collaborative care for depression roughly doubles the likelihood of a treatment response (Bower et al., 2006; Gilbody et al., 2006; Williams et al., 2007). **Guideline Support** The measure is consistent with the *VA/DoD Clinical Practice Guideline for MDD* (VA and DoD, 2009a), which recommends that the PHQ-9 be used to monitor treatment response following the initiation of treatment and after each change in treatment. The guideline authors score the strength of this recommendation a 'B', which corresponds to the judgment that "at least fair evidence was found that the intervention improves health outcomes and concludes that benefits outweigh harms" (VA and DoD, 2009a). Guidelines issued by the Institute for Clinical Systems Improvement also recommend the PHQ-9 as the preferred tool to monitor depression in the primary care setting (Trangle et al., 2012).

Table B.15—Continued

Rationale for measure inclusion	**Research Evidence** Documentation of the NQF measure includes the statement that the "measure itself is determined to have face validity based on expert panel and workgroups…. Experts agreed on the use of common tool (PHQ-9) and that response is defined as greater than 50% improvement from the initial PHQ-9 score" (National Quality Forum, 2013).The Institute for Clinical Systems Improvement also suggests a 50-percent reduction on a standardized rating scale as a measure of treatment response (Trangle et al., 2012) and cites as support for this threshold two STAR*D reports that describe the use of a 50-percent reduction in the Quick Inventory of Depressive Symptomatology, Self-Report (QIDS-SR) as the measure of treatment response (Rush et al., 2006; Trivedi et al., 2006). The *VA/DoD Clinical Practice Guideline for MDD* (VA and DoD, 2009a) suggests a 5-point reduction or total score less than 10 be used as the measure of significant improvement. This alternate recommendation is consistent with an empirical evaluation of the minimal clinically important difference in PHQ-9 scores. Löwe and colleagues (2004b) reported analyses revealing that a 5-point (or greater) change in PHQ-9 scores reflects clinically significant change. Thus, for patients with very low inclusion scores (e.g., PHQ-9 = 10), this magnitude of change is consistent with a 50-percent reduction in scores. However, for patients with severe depression (e.g., PHQ-9 = 20), a 50-percent reduction is a considerably more stringent criterion than that suggested by the Lowe analyses. The PHQ-9 (Kroenke, Spitzer and Williams, 2001) is the recommended standardized measurement tool for a variety of reasons. Although there are a number of validated tools to assess depression, the PHQ-9 is particularly efficient, simple to administer, and easy to score and interpret (Kroenke, Spitzer and Williams, 2001). Internal reliability of the scale is strong (α = 0.86–0.89), and 48-hour test-retest reliability is also strong (r = 0.84) despite different modes of administration (patient-completed versus interviewer administered) (Kroenke, Spitzer and Williams, 2001). In a recent meta-analysis of 14 psychometric evaluations of the PHQ-9, Gilbody, Richards, Brealey, and Hewitt (2007) reported a pooled sensitivity estimate of the measure of 0.80 and a specificity estimate of 0.92. Across the full range of the scale, diagnostic performance is strong (AUC=0.95) (Kroenke, Spitzer and Williams, 2001). Importantly, diagnostic performance did not differ depending on the scoring strategy (a diagnostic algorithm versus continuous scoring with a cut point of 10) or based on the prevalence of depression in the evaluated population (Gilbody et al., 2007). In a summary of optimal cut points for identifying probable depression, Gilbody and colleagues (2007) noted that empirical optimal cut points have varied from 9 (community sample) to 12 (inpatient TBI sample). Finally, the scale performs as expected with strong correlations between the PHQ-9 and SF-20 Health-related Quality of Life Scales (r = 0.33-0.73), self-reported disability days (r = 0.24) and heath care utilization (physician visits, r = 0.24) (Kroenke, Spitzer and Williams, 2001), suggesting good construct validity. Importantly, the scale is sensitive to change in clinical status (Löwe et al., 2004a; Löwe et al., 2004b). Given that this is an outcome measure, it is important to consider case mix adjustment. At a minimum, the PHQ-9 scores can be stratified by baseline score. Other potential risk adjustment variables include gender, zip code, race and ethnicity, country of origin and primary language.
Feasibility	The denominator for this measure (patients with depression) can be partially calculated from administrative claims data. However, the determination of the PHQ-9 score that triggered the measure required either medical record abstraction or access to scores via the BHDP. These data sources are also required to access the subsequent PHQ-9 score at six months after the triggering score.

[a] The intended data source had been AHLTA, but was changed to BHDP due to the need to shorten the medical record abstraction process of this study.

[b] Because BHDP was the data source and its use was limited at the time of data collection, encounters for this study were limited to those with a behavioral health provider and who received direct care only.

Table B.16
Depression-T12: Remission at Six Months

MEASURE SUMMARY	
Measure statement	Percentage of depression patients in remission at six months
Numerator	Patients who achieve remission at six months (+/- 30 days) as demonstrated by a PHQ-9 score of less than five
Denominator	Patients with depression and an initial PHQ-9 score positive for depression (PHQ-9 score greater than 9)
Measure type	Outcome
Care setting	Outpatient

NUMERATOR SPECIFICATIONS		Data Source
PHQ-9 score less than five within six months	The nine-item Patient Health Questionnaire (PHQ-9) is the depression module of the full PHQ scale and is in the public domain (Kroenke, Spitzer and Williams, 2001). Each item corresponds to one of the DSM-IV criteria for major depressive disorder and is administered as a self-report scale completed by the patient. The measure can be scored continuously (from 0 to 27) or via a diagnostic algorithm that matches item responses to the diagnostic criteria of the DSM-IV (Kroenke, Spitzer and Williams, 2001). Collect PHQ-9 scores from the time of inclusion criteria of depression diagnosis and PHQ-9 score greater than nine are met (which is the index or anchor date) until seven months have elapsed. Calculate a response rate (PHQ-9 score less than five) from the most recent PHQ-9 done in the 60-day window (six months +/- 30 days from the index date). Patients with no PHQ-9 administered after the index date during the next seven months are included in the denominator as "no response." This outcome measure and would require the development of a risk adjustment model for its application in the MHS. The risk adjustment model developed by Minnesota Community Measurement (measure steward) is not applicable to the MHS population.	AHLTA or BHDP[a]

DENOMINATOR SPECIFICATIONS		Data Source
Patients with depression	See Table B.3. Include patients with any of the following ICD-9 CM codes: 296.2x, 296.3x, 300.4. For primary care providers, the code may have been primary or secondary; for behavioral health providers, the code must have been primary. Because the BHDP was the data source for the numerator, the denominator was limited to the Army and those receiving direct care only.	CAPER, SIDR
PHQ-9 score of more than nine	Patients with depression with a PHQ-9 score of more than nine that occurred at least seven months before the end of the measurement period. For NTEs starting in the first month of the first measurement period, include scores in the 30 days prior to the NTE date.	AHLTA or BDHP

Table B.16—Continued

PHQ-9 score of more than nine	During the first five months of the 12-month measurement period, depression patient was either seen at an office visit or contacted via another method (phone: 99441, 99442, 99443; email: 99444), Encounter may have been a primary care or behavioral health outpatient visit, telephone or email contact associated with ICD-9 CM codes 296.2x, 296.3x, 300.4. For primary care providers, the code may have been primary or secondary; for behavioral health providers, the code must have been primary.[b]	CAPER
	Behavioral health providers (any setting): Psychiatrist: 070, 071, 073, 076 Psychologist/psychoanalyst: 072, 702 Psychiatric nurse practitioner: 611 Clinical social worker: 703, 714	CAPER: Provider Specialty (PROVSPEC1)
	Primary care providers (any setting): Family practice physician: 000, 001, 003 Internal medicine physician: 008, 011, 028, 097-099 Geriatrician: 017 Primary care nurse practitioner: 604, 605	
	Primary care providers in conjunction with specific setting: Clinical Nurse-entry level nurse practitioner: 610 Physician assistant: 901 *In conjunction with:* Family practice clinic: AGA, AGZ, BGA, BGZ Internal medicine clinic: AAA, BAA Primary care clinic: BHA, BHZ	CAPER: Provider Specialty (PROVSPEC1); MEPRS code, 3rd level (MEPR3)
Exclusions	Exclusions included the following: • *Death* during the measurement time frame. • *Permanent nursing home resident* during the measurement time frame. • *Hospice:* Enrolled in hospice during the measurement time frame. There were no direct care hospice patients in the sample. • *Bipolar Disorder* (in any position) during the measurement time frame: 296.0x Bipolar I disorder 296.1x Manic disorder 296.4x Bipolar I disorder, most recent episode manic 296.5x Bipolar I disorder, most recent episode depressed 296.6x Bipolar I disorder, most recent episode mixed 296.7 Bipolar I disorder, most recent episode unspecified 296.80 Bipolar disorder NOS 296.81 Atypical manic disorder 296.82 Atypical depressive disorder 296.89 Bipolar II disorder	

Table B.16—Continued

Exclusions	• *Personality Disorder* (in any position) during the measurement frame: 301.0 Paranoid personality disorder 301.1 Affective personality disorder 301.10 Affective personality disorder unspecified 301.11 Chronic hypomanic personality disorder 301.12 Chronic depressive personality disorder 301.13 Cyclothymic disorder 301.2 Schizoid personality disorder 301.20 Schizoid personality disorder unspecified 301.21 Introverted personality 301.22 Schizotypal personality disorder 301.3 Explosive personality disorder 301.4 Obsessive-compulsive personality disorder 301.5 Histrionic personality disorder 301.50 Histrionic personality disorder unspecified 301.51 Chronic factitious illness with physical symptoms 301.59 Other histrionic personality disorder 301.6 Dependent personality disorder 301.7 Antisocial personality disorder 301.8 Other personality disorders 301.81 Narcissistic personality disorder 301.82 Avoidant personality disorder 301.83 Borderline personality disorder 301.84 Passive-aggressive personality 301.89 Other personality disorders 301.9 Unspecified personality disorder

MEASURE BACKGROUND

Measure source	National Quality Forum, "NQF #0711 Depression Remission at 6 Months," last updated March 6, 2015. As of March 18, 2015: http://www.qualityforum.org/QPS/0711
Rationale for measure inclusion	**Source/Adaptation** This measure is an NQF-endorsed measure for monitoring depression response to treatment (progress toward remission) at six months based on changes in PHQ-9 scores. There is an increasing emphasis on the need to deliver treatment that is evidence-based and effective. Harding and colleagues (Harding et al., 2011) make the case for measurement-based care as the standard for psychiatric practice to align treatment for psychological health disorders with physical health care. Standardized, repeated measurement of MDD symptoms allows clinicians to track individual patient response to treatment, and also allows administrators and organizations to monitor the treatment outcomes of larger patient groups. Systematic measurement of response to treatment is considered an important component of collaborative care. In randomized trials, compared to treatment as usual, collaborative care for depression roughly doubles the likelihood of a treatment response (Bower et al., 2006; Gilbody et al., 2006; Williams et al., 2007).

Table B.16—Continued

Rationale for measure inclusion	**Guideline Support** The measure is consistent with the *VA/DoD Clinical Practice Guideline for MDD* (VA and DoD, 2009a), which recommends that the PHQ-9 be used to monitor treatment response following the initiation of treatment and after each change in treatment. The guideline authors score the strength of this recommendation a 'B', which corresponds to the judgment that "at least fair evidence was found that the intervention improves health outcomes and concludes that benefits outweigh harms" (VA and DoD, 2009a). Guidelines issued by the Institute for Clinical Systems Improvement also recommend the PHQ-9 as the preferred tool to monitor depression in the primary care setting (Trangle et al., 2012) **Research Evidence** Documentation of the NQF measure includes the statement that the "measure itself is determined to have face validity based on expert panel and workgroups.... Experts agreed on the use of common tool (PHQ-9) and that response is defined as greater than 50% improvement from the initial PHQ-9 score" (National Quality Forum, 2013). The Institute for Clinical Systems Improvement also suggests a 50% reduction on a standardized rating scale as a measure of treatment response (Trangle et al., 2012) and cites as support for this threshold two STAR*D reports that describe the use of a 50% reduction in the Quick Inventory of Depressive Symptomatology, Self-Report (QIDS-SR) as the measure of treatment response (Rush et al., 2006; Trivedi et al., 2006). The *VA/DoD Clinical Practice Guideline for MDD* (VA and DoD, 2009a) suggests a 5-point reduction or total score less than 10 be used as the measure of significant improvement. This alternate recommendation is consistent with an empirical evaluation of the minimal clinically important difference in PHQ-9 scores. Löwe and colleagues (2004b) reported analyses revealing that a 5-point (or greater) change in PHQ-9 scores reflects clinically significant change. Thus, for patients with very low inclusion scores (e.g., PHQ-9 = 10), this magnitude of change is consistent with a 50-percent reduction in scores. However, for patients with severe depression (e.g., PHQ-9 = 20), a 50-percent reduction is a considerably more stringent criterion than that suggested by the Lowe analyses. The PHQ-9 (Kroenke, Spitzer and Williams, 2001) is the recommended standardized measurement tool for a variety of reasons. Although there are a number of validated tools to assess depression, the PHQ-9 is particularly efficient, simple to administer, and easy to score and interpret (Kroenke, Spitzer and Williams, 2001). Internal reliability of the scale is strong (α = 0.86-0.89), and 48-hour test-retest reliability is also strong (r = 0.84) despite different modes of administration (patient-completed versus interviewer administered) (Kroenke, Spitzer and Williams, 2001). In a recent meta-analysis of 14 psychometric evaluations of the PHQ-9, Gilbody, Richards, Brealey, and Hewitt (2007) reported a pooled sensitivity estimate of the measure of 0.80 and a specificity estimate of 0.92. Across the full range of the scale, diagnostic performance is strong (AUC = 0.95) (Kroenke, Spitzer and Williams, 2001). Importantly, diagnostic performance did not differ depending on the scoring strategy (a diagnostic algorithm versus continuous scoring with a cut point of 10) or based on the prevalence of depression in the evaluated population (Gilbody et al., 2007). In a summary of optimal cut points for identifying probable depression, Gilbody and colleagues (2007) noted that empirical optimal cut points have varied from 9 (community sample) to 12 (inpatient TBI sample). Finally, the scale performs as expected with strong correlations between the PHQ-9 and SF-20 Health-related Quality of Life Scales (r = 0.33-0.73), self-reported disability days (r = 0.24) and heath care utilization (physician visits, r = 0.24) (Kroenke, Spitzer and Williams, 2001), suggesting good construct validity. Importantly, the scale is sensitive to change in clinical status (Löwe et al., 2004a; Löwe et al., 2004b).

Table B.16—Continued

Rationale for measure inclusion	Given that this is an outcome measure, it is important to consider case mix adjustment. At a minimum, the PHQ-9 scores can be stratified by baseline score. Other potential risk adjustment variables include gender, zip code, race and ethnicity, country of origin and primary language.
Feasibility	The denominator for this measure (patients with depression) can be partially calculated from administrative claims data. However, the determination of the PHQ-9 score that triggered the measure required either medical record abstraction or access to scores via the BHDP. These data sources are also required to access the subsequent PHQ-9 score at six months after the triggering score.

[a] The intended data source had been AHLTA, but was changed to BHDP due to the need to shorten the medical record abstraction process of this study.

[b] Because BHDP was the data source and its use was limited at the time of data collection, encounters for this study were limited to those with a behavioral health provider and who received direct care only.

Table B.17
Depression-T14: Improvement in Functional Status

MEASURE SUMMARY		
Measure statement	Percentage of depression patients in a new treatment episode with improvement in functional status at six months	
Numerator	Patients in the denominator with an improvement in functional status from their first visit for depression to six months after the first visit	
Denominator	Patients with a new treatment episode of depression and who have at least two measures of functional status during the first six months of the new treatment episode	
Measure type	Outcome	
Care setting	Outpatient	
NUMERATOR SPECIFICATIONS		**Data Source**
Improvement in functional status	Measurement of change in function requires the repeated use of the same standardized tool first at the start of an NTE and repeated use during subsequent treatment. Since no specific standardized tool for measuring function has been recommended for use in the MHS, this study was limited to summarizing the use of any standardized tool to measure baseline function in the 30 days before or 30 days after the start of an NTE.	AHLTA
DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with depression	See Table B.3.	CAPER, SIDR

Table B.17—Continued

NTE	See New Treatment Episode-PTSD in Key Definitions. The NTE was defined from administrative data. Abstractors confirmed the NTE and NTE date based on information in the medical record. A correction to the NTE date was allowed by the abstractor, if applicable. NTEs are limited to those cases diagnosed in the outpatient setting.	CAPER, SIDR, PDTS, AHLTA
Measure of wfunctional status	The use of a standardized tool to measure function, including but not limited to the following: • Brief Resilience Scale(Smith et al., 2008) • CDC HRQOL-4 (Healthy Days) (Moriarty, Zack and Kobau, 2003) • Sheehan Disability Scale (SDS) (Sheehan, Harnett-Sheehan and Raj, 1996) • Global Quality of Life (Hyland and Sodergren, 1996) • WHO Disability Assessment Scale (WHODAS) (Garin et al., 2010) • Schwartz Outcomes Scale-10 (SOS-10) (Blais et al., 1999) • Illness Management and Recovery (IMR) Scale (Sklar et al., 2012)	
Exclusions	None	

MEASURE BACKGROUND

Measure source	Adapted from the following: Post-Deployment Health Guideline Expert Panel, *Recommendations for Monitoring Metrics: DoD/VA Practice Guideline for Post-Deployment Health Evaluation and Management*, July 6, 2001. As of September 13, 2013: http://www.pdhealth.mil/guidelines/downloads/view/3/2_recommendations_for_metrics.pdf
Rationale for measure inclusion	**Source/Adaptation** **Guideline Support** **Research Evidence** General functioning or health-related quality of life (HRQOL) is widely recognized as an important outcome (Moriarty, Zack and Kobau, 2003). In fact, it can be thought of as the complement to symptom-reduction or disease-remission measures, which is consistent with the World Health Organization's definition of health as "a state of complete physical, mental and social well-being—not merely the absence of disease or infirmity (World Health Organization, 1948)." The post deployment measure on which this measure is based did not specify the instrument to be used to measure change in function. Clinicians and researchers who wish to track patient functioning over time and in response to treatment have a variety of functioning measures from which to choose. However, many of these measures are lengthy (e.g., SF-36; (McHorney, Ware Jr. and Raczek, 1993), and some of the most popular short measures (e.g., Sheehan Disability Scale [SDS] (Sheehan, Harnett-Sheehan and Raj, 1996), [European Quality of Life – 5 Dimensions [EQ-5D] (Rabin and Charro, 2001)) are associated with licensing fees. The Centers for Disease Control and Prevention (CDC) four-item HRQOL Healthy Days instrument (HRQOL-4) (Centers for Disease Control and Prevention, 2000) is one good option that balances the need for a validated instrument of functioning with a preference for a brief and no-cost instrument. The CDC HRQOL-4 is a four-item measure that includes a global assessment of self-reported health ("Would you say that your general health is: Excellent, Very Good, Good, Fair, or Poor?"). Two questions assess the number of days during the past 30 days on which the respondent's (1) physical health and (2) mental health were not good. The sum of these two items is known as the Unhealthy Days measure. The final item asks the respondent to estimate the number of days on which poor physical or mental health kept him or her from engaging in his or her typical daily activities.

Table B.17—Continued

Rationale for measure inclusion	The CDC HRQOL-4 has been widely used in population-based public health surveys, such as the state-based Behavioral Risk Factor Surveillance System (BRFSS) (Nelson et al., 2000), the National Health and Nutrition Examination Survey (NHANES) (Centers for Disease Control and Prevention, 2013b), and the Medicare Health Outcomes Survey (HOS) (National Committee for Quality Assurance, 2013b). Benchmarking data for comparisons with state and national samples are available on the CDC HRQOL website (Centers for Disease Control and Prevention, 2013a). The test-retest reliabilities of measure items are moderate (intraclass correlation coefficient [ICC] = 0.57–0.75) (Andresen et al., 2003). Note that strong test-retest reliability is neither expected nor desired in measures that are designed to be sensitive to clinical change over time. In fact, to the contrary, it is important to establish that measures employed as indicators of treatment outcome are sensitive to change in response to treatment. This criterion is met by the CDC HRQOL-4. Moriarty, Zack, and Kobau (2003) observe that the "number of days in the past 30 days" response format of the Healthy Days measures makes them particularly well suited to respond to short-term changes. The measure is responsive to seasonal effects on populations (Moriarty, Zack and Kobau, 2003) and shifts in medical utilization (Albert, 2000). Concurrent validity of the measure has been established via strong correlations between the CDC HRQOL-4 and established measures of functioning, such as the SF-36 and EQ-5D (Andresen et al., 1999; Jia et al., 2011; Newschaffer, 1998). The measure has also been shown to distinguish between known disease groups (Currey et al., 2003). Although the CDC HRQOL instrument has been used as a population health surveillance measure, to our knowledge, it has not been implemented as part of a quality measure. The validity of its use for this purpose will require pilot-testing. Additional work will also be necessary to determine the degree of improvement that must be observed before confirming that a patient has met the threshold to be classified as "improved" on the domain of functional status. That is, how many additional healthy days are required in order for a patient to be classified as improved? In the absence of this important information about change thresholds, investigators may wish to benchmark final scores against a population norm instead. For example, CDC reported that the average number of unhealthy days per month across the U.S. population is 6.0 (Zack et al., 2004). As expected, individuals with medical conditions report more unhealthy days. For example, on average, patients with diabetes report 8.6 unhealthy days per month, patients with asthma report 11.1 unhealthy days per month, and patients with liver conditions report 14.5 unhealthy days per month (Zahran et al., 2005). Of course, it would be most useful to benchmark against the number of unhealthy days reported by patients with active PTSD or MDD. Research in this area is limited, but, in a sample of Los Angeles County residents, those with depression reported an average of 20.1 unhealthy days (Shih and Simon, 2008). Because this is an outcome measure, adjustment for case mix is important to consider when evaluating outcomes in patient populations. Without case-mix adjustment, the sicker patients who generally receive more care and often have worse outcomes may distort the relationship between process and outcomes such that better care appears to worsen results.
Feasibility	The denominator for this measure (new treatment episodes for depression) was calculated from administrative data. However, the use of a standardized tool to measure function required medical record review. Increased feasibility would be possible if a single, standardized tool to measure function were routinely used in the MHS and score results incorporated into an accessible data set such as the BDHP.

Table B.18
Depression-T15: Follow-Up After Hospitalization for Mental Illness

MEASURE SUMMARY	
Measure statement	Percentage of psychiatric inpatient hospital discharges of patients with depression with follow-up: T15a: Within seven days of discharge T15b: Within 30 days of discharge
Numerator	Inpatient discharges in the denominator where the inpatient discharge was followed with an outpatient visit, intensive outpatient encounter, or partial hospitalization with a mental health practitioner: T15a: Within seven days of discharge T15b: Within 30 days of discharge
Denominator	Patients with depression discharged from an acute inpatient setting with primary mental health diagnosis
Measure type	Process
Care setting	Outpatient

NUMERATOR SPECIFICATIONS		Data Source
Follow-up	T15a: An outpatient visit, intensive outpatient encounter or partial hospitalization with a mental health practitioner or transitional care management service within seven days after discharge. Include outpatient visits, intensive outpatient encounters or partial hospitalizations that occur on the date of discharge. T15b: An outpatient visit, intensive outpatient encounter or partial hospitalization with a mental health practitioner or transitional care management service within 30 days after discharge. Include outpatient visits, intensive outpatient encounters or partial hospitalizations that occur on the date of discharge. **CPT Codes to Identify Outpatient Visit Type** • Outpatient psychotherapy: 90804–90815 • Education for self-management: 98960–98962 • Group education: 99078 • Outpatient E&M: 99201–99205, 99211–99215, 99217–99220 • Outpatient consultation: 99241–99245 • Home visit: 99341–99345, 99347–99350, 99510 • Preventive medicine: 99383–99387, 99394–99397, 99401–99404, 99411, 99412	CAPER, TED-NI, SIDR, TED-I

Table B.18—Continued

Follow-up	**HCPCS:** • Social work, activity therapy, self-care education, group therapy: G0155, G0176, G0177, G0409–G0411. • Behavioral health counseling, medication training, partial hospitalization/ community treatment, rehabilitation and community support: H0002, H0004, H0031, H0034–H0037, H0039, H0040, H2000, H2001, H2010–H2020. • Mental health medication management: M0064 • Partial hospitalization, intensive outpatient psychiatric treatment, crisis intervention: S0201, S9480, S9484, S9485 CPT codes and place of service (POS) • Psychiatric diagnostic: 90801, 90802 **2013:** 90791, 90792 • Psychotherapy and crisis (2013): 90832–90834, 90836–90840 • Inpatient/partial hospitalization psychotherapy: 90816–90819, 90821–90824, 90826–90829 • Psychoanalysis: 90845 • Family/group: 90847, 90849, 90853, 90857 • Medication management: 90862, **2013:** +90863[a] • Electroconvulsive therapy (ECT): 90870. • Biofeedback: 90875, 90876 • Inpatient E&M: 99221–99223 • Subsequent hospital care: 99231–99233, 99238, 99239 • Inpatient consultation: 99251-99255 **WITH outpatient POS:** Above CPT-related encounter was attached to an outpatient visit **other than** emergency department. **Transitional care management (TCM) services:** TCM where the date of service on the claim is 29 days after the date the patient was discharged with a principal diagnosis of mental illness. • **Applies to seven- and 30-day scores:** 99496, face-to-face contact within seven days • **Applies to 30-day score:** 99495, face-to-face contact within 14 days Note: Transitional care management is a 30-day period that begins on the date of discharge and continues for the next 29 days. The date of service on the claim is 29 days after discharge and not the date of the face-to-face visit.	CAPER, TED-NI, SIDR, TED-I
Mental health practitioner	**CAPER:** Psychiatrist: 070, 071, 073, 076 Psychologist/Psychoanalyst: 072, 702 Psychiatric Nurse Practitioner: 611 Clinical Social Worker: 703, 714	CAPER: Provider Specialty (PROVSPEC1)

Table B.18—Continued

Mental health practitioner	**TED-NI:** Psychiatrist: 26 Psychologist: 62 Clinical Psychiatric Nurse Specialist: 91 Clinical Social Worker: 85 Certified Marriage and Family Therapist: 94	TED-NI: Provider Specialty (PROVSPEC)

DENOMINATOR SPECIFICATIONS		**Data Source**
Patients with depression	See Table B.3.	CAPER, TED-NI, SIDR, TED-I
Primary mental health illness	Inpatient primary discharge diagnosis as defined by ICD-9-CM diagnosis codes: 295.xx–299.xx, 300.3, 300.4, 301.xx, 308.x, 309.xx, 311–314.xx.	SIDR, TED-I
Inpatient discharge	Discharge from an acute inpatient setting during the first 11 months of the measurement year. Unit of measurement is admissions rather than members. Include all discharges for members who have more than one discharge in the first 11 months of the measurement year. If the discharge is followed by readmission or direct transfer to an acute facility for a primary mental health diagnosis (290.xx, 293.xx–302.xx, 306.xx–316) and within the 30-day period, count only the readmission discharge or the discharge from the facility to which the member was transferred. Although re-hospitalization might not be for a selected mental health disorder, it is probably for a related condition.	SIDR, TED-I
Exclusions	*Late in the measurement year:* Both the initial discharge and readmission/direct transfer discharge if the readmission/direct transfer discharge occurred in month 12 of the measurement year. *Non-acute facility, mental health:* Discharges followed by readmission or direct transfer to a **non-acute** facility for any primary mental health diagnosis (290.xx, 293.xx–302.xx, 306.xx–316) within the 30-day follow-up period. These discharges are excluded from the measure because readmission or transfer may prevent an outpatient follow-up visit from taking place *Acute or non-acute facility, non-mental health:* Discharges in which the patient transferred directly or readmitted within 30 days of discharge to an acute or non-acute facility for a non-mental health primary diagnosis. These discharges are excluded from the measure because readmission or transfer may prevent an outpatient follow-up visit from occurring.	SIDR, TED-I
Nonacute care		SIDR, TED-I, TED-NI
	TED-I: Rehabilitation: 46, 48, 56, 82 Home health care: 70 Skilled nursing facility: 76 Residential/extended care facility: 72, 73 Hospice, 78, 79 Substance use disorders rehabilitation facility: 82 Ambulatory surgery: 75, 92	TED-I: Type of Institution (INSTTYPE)

Table B.18—Continued

Nonacute care	**TED-NI:** Skilled nursing facility: 31 Nursing facility: 32 Hospice: 34 Intermediate care facility: 54 Residential substance abuse treatment facility: 55 Psychiatric residential treatment center; 56 Comprehensive inpatient rehabilitation facility: 61	TED-NI: Place of Service (PLACE)
	HCPCS: Behavioral health, residential: H0017, H0018, H0019, T2048	TED-NI CPT codes
Transfer		SIDR, TED-I
	SIDR: *Acute (or not specified) transfer:* 21 = Transferred to Army MTF; 22 = Transferred to Navy MTF; 23 = Transferred to Air Force MTF; 24 = Discharged to another federal facility; 26 = Discharged to civilian acute care (non-AD) *Nonacute transfer:* 27 = Discharged to skilled civilian nursing facility (non-AD); 28 = Discharged to civilian intermediate care facility (non-AD)	SIDR: Disposition Type (DISPTYPE)
	TED-I: *Acute (or not specified) transfer:* 02 = Transferred; 05 = Discharged/transferred to another type of institution; 43 = Discharged/transferred to a federal hospital; 65 = Discharged/transferred to a psychiatric hospital; 66 = Discharged/transferred to a critical access hospital; 70 = Discharged/transferred to another type of health care institution not elsewhere defined *Nonacute transfer:* 03 = Discharged/transferred to a skilled nursing facility (SNF); 04 = Discharged/transferred to an intermediate care facility (ICF); 51 = Discharged to hospice-medical facility; 61 = Discharged/transferred within this institution to hosp-based Medicare apprvd swing-bed; 62 = Discharged/transferred to another rehab facility; 63 = Discharged/transferred to a long term care hospital; 64 = Discharged/transferred to a nursing facility	TED-I: Disposition Status (DISPSTAT)
MEASURE BACKGROUND		
Measure source	National Quality Forum, "NQF #0576 Follow-Up after Hospitalization for Mental Illness," Last Updated: December 23, 2014. As of March 1, 2015: http://www.qualityforum.org/QPS/0576 National Committee for Quality Assurance, HEDIS 2015. As of March 1, 2015: http://www.ncqa.org/HEDISQualityMeasurement/HEDISMeasures/HEDIS2015.aspx	

Table B.18—Continued

Rationale for measure inclusion	**Source/Adaptation** This is an NQF-endorsed measure developed by the National Committee for Quality Assurance (National Quality Forum, 2013) and included in the Healthcare Effectiveness Data & Information Set (HEDIS) 2015 (National Committee for Quality Assurance, 2013a). NCQA states in its rationale statement: "as treatment of mentally ill patients continues to shift from inpatient to outpatient settings, coordinating and maintaining continuity of care are important aspects of health care quality. There are several clinical reasons for ensuring adequate and timely follow-up care for patients after discharge from an institution or hospital for mental illness: • Preventing readmission • Keeping track of those who will eventually require readmission • Providing transitional care from inpatient to outpatient setting." **Guideline Support** The care continuity targeted by this measure is not specifically included in the *VA/DoD Clinical Practice Guideline for PTSD* (2010b). However, the guideline does make references to the potential use of case management to coordinate and increase continuity of care (Rosen et al., 2006). The *VA/DoD Clinical Practice Guideline for MDD* (2009a) also recommends the use of a case manager to coordinate communication between primary and mental health care specialists as one component of case management (Bower et al., 2006; Gilbody et al., 2006; Williams et al., 2007). This measure has face validity, and it is the standard of care to provide patients with adequate follow-up after an inpatient psychiatric stay. Furthermore, this indicator is an industry standard measure, as indicated by its inclusion in HEDIS. **Research Evidence** It is important to provide regular follow-up therapy to patients after they have been hospitalized for mental illness. An outpatient visit with a mental health practitioner after discharge is recommended to ensure that the patient's transition to the home and work environment is supported and that gains made during hospitalization are not lost. It also helps health care providers to detect problems early and provide continuing care. Missed appointments increase the likelihood of re-hospitalization and increase the cost of outpatient care (Mitchell and Selmes, 2007). In terms of clinical characteristics, individuals with a co-occurring serious mental illness and a substance use disorder have high rates of treatment disengagement, as do individuals with higher levels of psychopathology (Kreyenbuhl, Nossel, and Dixon, 2009). Disengagement from mental health services can be a significant problem that can lead to exacerbation of psychiatric symptoms, repeated hospitalizations, first episode or recurrent homelessness, violence against others, and suicide (Dixon et al., 2009; Fischer et al., 2008). Communication between inpatient and outpatient clinicians is an intervention associated with improved odds of a successful linkage to post-discharge outpatient care (Boyer et al., 2000).

Table B.18—Continued

Feasibility	The numerator and denominator for this measure were calculated with administrative claims data, making it theoretically very feasible to implement. This measure score was computed based on administrative data from SIDR and TED-I. However, identifying and summarizing separate inpatient stays from these data proved to be challenging. For example, a disposition status of "still a patient (interim billing) was followed with a line with a "new" (next day) admission date. An attempt was made to reconcile such cases (this example was assumed to be a continuing stay rather than a new admission given the coded status). Other cases, for example with a status of "discharge" or "return to active duty" with a next-day admission were assumed to be a new inpatient stay. However, this measure focuses on the last readmission discharge in 30 days, if applicable; difficulty distinguishing between a continued stay and an immediate readmission would not have a large effect since the last readmission discharge is the discharge of interest.

[a] Code +90863 (Pharmacologic management, including prescription and review of medication, when performed with psychotherapy services [for providers who may not report E&M codes]) is not included in the 2014 updated definition of the numerator for NQF #0576. However, it has been included in this study due to the common use of prescribing clinical psychologists in MTFs.

APPENDIX C

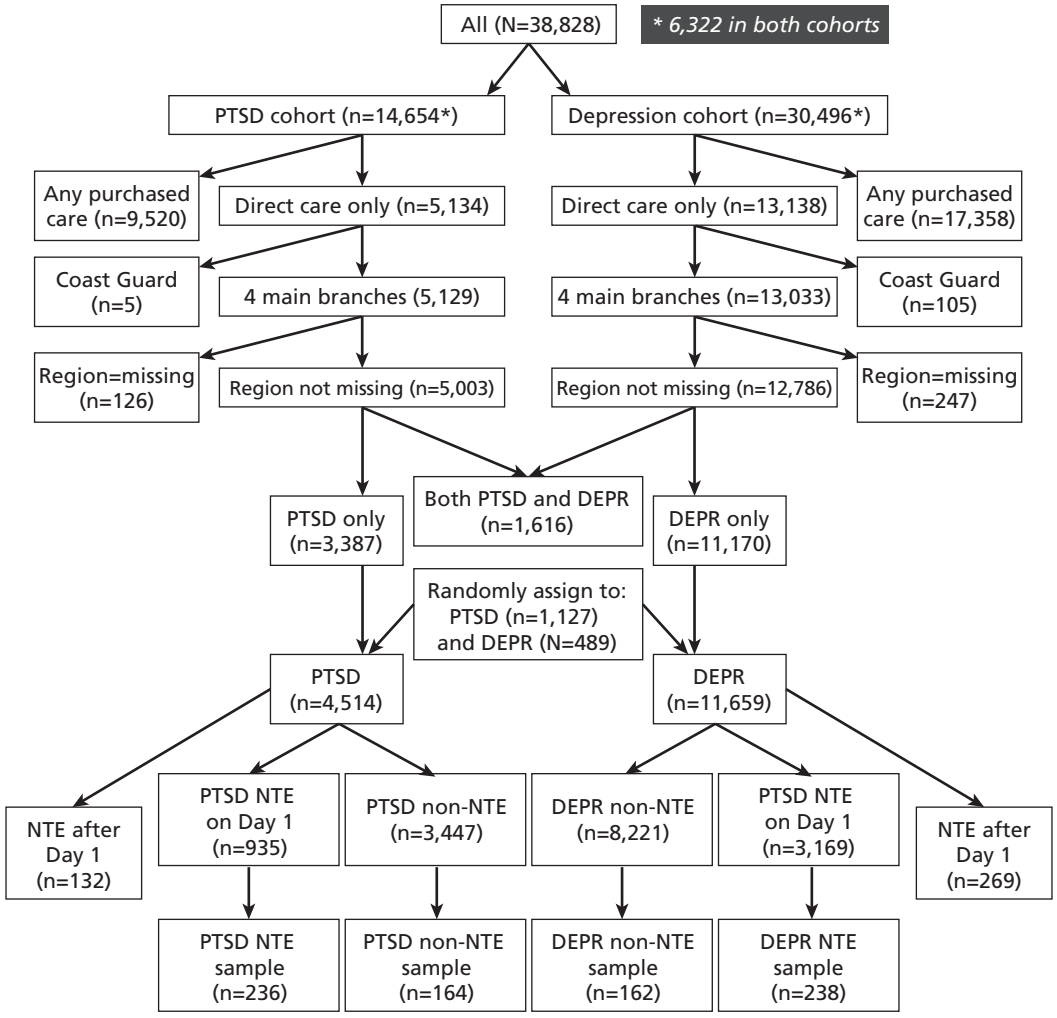
Medical Record Review Methods

The population for the MRR consisted of active-component service members who received all of their care during the observation period from direct care. This limitation was because medical records documenting purchased care were not accessible for abstraction. The only available source of medical record data for active-component service members was AHLTA, the EHR used by the MTFs to document outpatient care. Inpatient care records were not accessed because the medical record–based measures focus on outpatient care.

Selection of the MRR Sample

The study population for the MRR included service members having at least one outpatient visit or inpatient stay with a primary or secondary diagnosis of PTSD or depression during the first six months of the study period. There were 14,654 personnel in the PTSD cohort and 30,496 in the depression cohort (Figure C.1). Coast Guard service members were not sampled since their relatively small proportion in the service member population would not allow for a sufficient number of them to be sampled to yield Coast Guard–specific estimates. Those with missing region (n = 126 with PTSD and n = 247 with depression; Figure C.1) are excluded from the sampled population. The study population was further restricted to the 16,173 service members in the Army, Air Force, Marine Corps, and Navy who only received care through the MHS directly through MTFs (e.g., direct care only). For purposes of yielding two distinct MRR samples for PTSD and depression, we randomly assigned each of the 1,616 service members in the target population with both PTSD and depression to either the PTSD or depression cohort. The probability of random assignment to the PTSD cohort was higher (0.70 versus 0.30) since the proportion of the cohort with both PTSD and depression at cohort assignment was higher for the PTSD (32 percent) than the depression cohort (12 percent). This resulted in 4,514 and 11,659 service members eligible for being randomly sampled for the MRR for PTSD and depression, respectively (Figure C.1). From each of these groups we drew a random sample of 400 service members from each of the PTSD and depression cohorts. Service members having a new treat-

Figure C.1
Medical Record Review Sampling Flow Chart



RAND *RR1542-C.1*

ment episode (NTE) on the first day of cohort entry were oversampled to ensure the final sample would include a sufficient number of service members eligible for the 10 of the 14 MRR quality indicators focusing on NTEs, despite the fact that just 23 percent and 28 percent of service members in the PTSD and depression cohorts had NTEs, respectively. NTEs were limited to those that occurred on Day 1 of cohort entry (representing 96 and 97 percent of the total NTEs for PTSD and depression, respectively) to maximize the length of the observation period. Those with NTEs only occurring after Day 1 of cohort entry were not sampled. The sample was also stratified to ensure that service members were sampled by branch, region, and by having both PTSD and

depression versus having one of these conditions. Sampling weights for estimating the measure scores for the NTE and all-cohort measures were applied to account for the stratified sampling plan. The weights were developed to match population proportions by branch, having an NTE, and belonging to both the PTSD and depression cohorts.

We contracted with an external vendor to conduct the medical record abstractions. The vendor had extensive experience in abstraction of mental health records and a long history of working with the military's outpatient electronic health record system, AHLTA. The RAND team worked closely with the vendor to develop the MRR abstraction tool. Our team drafted the specifications for the collection of variables needed to apply the quality measures. The tool made use of selected administrative data variables to guide abstractors through the abstraction tool. Members of the VA and DoD, as well as the vendor's PTSD consultant, reviewed the draft of the abstraction tool. Once the tool had been programmed, both the vendor and RAND tested its functionality. When the content was finalized, it was pilot tested on eight cases each from the MRR sample for PTSD and depression, including records from all four service branches. A copy of the medical record abstraction tool used for this data collection is available from the authors on request. Access to medical records within AHLTA was achieved remotely. The pilot test indicated that medical records were accessible with no major obstacles and the abstraction tool functioned well.

The vendor was responsible for providing abstractors for the data collection effort. Eight abstractors were selected for training, all of whom had several years of medical record abstraction experience, including abstraction of mental health records. All abstractors had signed confidentiality statements; had a current favorably adjudicated ADPII Clearance with the Department of Defense; completed HIPAA, Cyber Awareness, and Collaborative Institutional Training Initiative (CITI) training; and obtained Common Access Cards signed by DoD. The computers used by the abstractors were encrypted government owned equipment, and the data were entered into a secure DIACAP certified website.

Abstractors were trained via one of two half-day–long conference calls provided by RAND during the week prior to the initiation of data collection. RAND provided training materials, including a manual of clinical guidelines and sample patient cases. Abstractors were certified post training with demonstration of at least 97 percent accuracy on two sample cases (one each for PTSD and depression). Five abstractors (one doctorate in clinical psychology, one registered nurse, and three registered health information technicians) comprised the final abstraction team from which abstractors were utilized based on availability. A lead abstractor was identified and an email-based system was established for ongoing abstractor guidance and for response to questions arising during abstraction. Conference calls with abstractors to discuss questions as a group were conducted as needed.

In anticipation of the MRR data collection, a total of 128 parent MTFs involved in the outpatient care of the MRR sample service members (sample and potential

replacement cases) were identified from administrative data. A letter to be sent to the commanders of the identified MTFs was drafted by RAND and signed by a representative of DCoE. The letter described the details of the study and provided advance notification to those commanders whose MTF patient data would potentially be accessed. The letter included contact information for both DCoE and the vendor in the event that a commander had questions or concerns about the study. The letters were sent along with a summary of the study IRB and regulatory process two weeks prior to the start of data collection.

Medical record data were abstracted for care delivered from January 2013 through June 2014 but may have extended back as far as July 2012 to verify eligibility to be included in the abstraction (e.g., confirmation of an NTE). Double abstractions were performed on a 3-percent sample of study records randomly selected by the vendor during the data collection process. Issues with data collection were identified as early as possible and addressed before abstraction was completed. In addition, RAND provided direction to the vendor for the reabstraction of an additional random three percent sample of records to be included in the submitted abstraction data, for a total 6-percent interrater reliability sample. The collection of data regarding evidence-based therapy proved to be the most challenging item for the abstractors. For this reason an additional 35 records were randomly selected and double abstracted for just this item. Interrater reliability was estimated for each measure using the standard kappa statistic and a prevalence-adjusted bias-adjusted kappa statistic (PABAK) (Byrt, Bishop, and Carlin, 1993). The kappa statistic could not be estimated when all values were missing from both raters or there was perfect agreement between the raters. PABAK estimates for the abstracted data ranged from 0.43 to 1 indicating a range of moderate to almost perfect agreement (Landis and Koch, 1977). Detailed estimates for each quality measure are presented in Table C1.

The vendor submitted abstraction data to RAND via an approved secure and confidential process. RAND compiled the patient list of the MRR sample for abstraction, which contained scrambled member SSNs and relevant treatment variables from administrative data, and sent that file to DMDC where patient SSNs were unscrambled and other identifying patient information was added (e.g., patient date of birth, family member prefix). DMDC then forwarded this data file to the vendor for the medical record pursuit and data collection. Variables abstracted from the medical records were added to this data file by the vendor and sent back to DMDC. There, DMDC rescrambled the SSNs, stripped all patient identifier data from the file, and sent the deidentified data file back to RAND. This process was performed every one to two weeks throughout data collection to allow for ongoing monitoring of the process and quality of data content.

The medical record abstraction was completed over a period of three months. Approximately one-quarter of the way through abstraction, the vendor reported an average time per patient case that exceeded limits of the abstraction budget. Cases in

Table C.1
Interrater Reliability Results for Medical Record Review

Measure	N	Percent Agreement	PABAK	Prevalence index	Bias Index	Kappa
PTSD						
A1-A4, T14 patients w/ NTE	24	1	1	0.08333	0	1
T3 patients with SI	24	1	1	–0.91667	0	1
A1 has measure of severity	13	0.92308	0.84615	0.15385	–0.07692	0.84337
A2 assessed for depression	13	1	1	1	0	undefined
A3 assessed for suicide risk	13	1	1	1	0	undefined
A4 assessed for SUD	13	0.92308	0.84615	0.92308	0.07692	0.00000
T3 appropriate SI follow-up	1	1	1	1	0	undefined
T7 received EBT	42	0.71429	0.42857	–0.47619	0.19048	0.29412
T14 measure of function	13	1	1	–1	0	undefined
Depression						
A1-A4 T14 patients w/ NTE	24	1	1	0.08333	0	1
T3 patients with SI	24	1	1	–1	0	undefined
A1 has measure of severity	13	0.84615	0.69231	0.07692	–0.15385	0.69767
A2 assessed for mania	13	0.84615	0.69231	–0.07692	0.15385	0.69767
A3 assessed for suicide risk	13	0.84615	0.69231	0.84615	–0.15385	0.0000
A4 assessed for SUD	13	0.92308	0.84615	0.61538	–0.07692	0.75472
T3 appropriate SI follow-up	0	.	.	.	.	.
T7 received CBT	41	0.80488	0.60976	–0.41463	0	0.52874
T14 measure of function	13	1	1	–1	0	undefined

NOTE: If both raters choose the same rating for all records, kappa is undefined.

the MRR sample had many outpatient encounters during the observation year, and this combined with the time-consuming process within AHLTA of opening and closing each encounter led to the difficult decision to reduce the scope of the abstraction. The revisions instituted were twofold: (1) the search for positive SI during the entire

12-month measurement period was reduced to just the first six months, and (2) the search for all recorded PCL and PHQ-9 scores was reduced to just collecting baseline scores for NTEs. The decision to reduce the collection of scores meant that some quality measures using medical record data (related to utilization of the PCL and PHQ-9 and response to treatment based on scores) could no longer be computed based on that data source. Performance for these measures was instead assessed using symptom questionnaire data collected through the BHDP.

In a small number of cases, the medical record abstraction was complicated by the abstractor's inability to open some mental health visit notes within AHLTA (less than 1 percent of cases for PTSD and just 2 percent for depression). Abstractors also found that some records with a considerable number of mental health care visits documented in AHTLA also had content that alluded to the existence of an additional "shadow record" that was not accessible to the abstractor (7 percent of cases for PTSD and 8 percent of cases for depression). These issues suggest that the performance on some quality measures may be somewhat underestimated. During the abstraction, only five cases (one PTSD and four depression cases) were replaced from the original sample due to either lack of access to the medical record (three cases) or for a significant amount of information missing from the record (two cases). Abstractors were also given the opportunity to validate the patient's NTE date calculated from administrative data. This date was corrected only rarely (13 cases overall or 3 percent) and the NTE was overturned less frequently (eight cases overall or 2 percent).

APPENDIX D

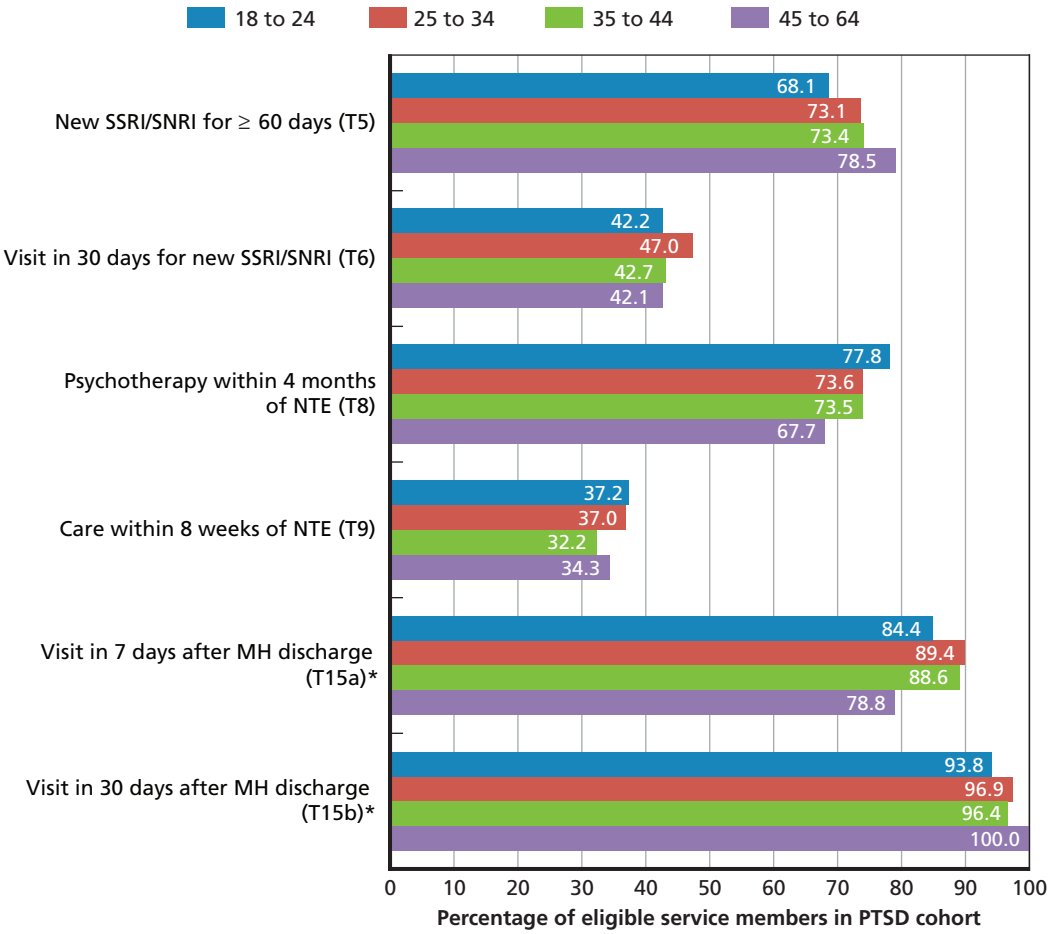
Variation in Performance of Administrative Data–Based Quality Measures for PTSD and Depression by Member and Service Characteristics

To assess equity of care provided by the MHS, we analyzed PTSD and depression quality measure scores based on administrative data by sociodemographic and service characteristics. For quality measures based on administrative data, we examined differences in scores by service branch (Army, Air Force, Marine Corps, Navy) and TRICARE region (North, South, West, Overseas). Scores were also computed for the following service member subgroups: age, race/ethnicity, gender, pay grade, and history of deployment at time of cohort entry. We defined age as of the time of cohort entry and created four age categories (18–24 years, 25–34 years, 35–44 years, and 45–64 years). Service members 65 years and older were not included in these analyses due to small numbers. Race/ethnicity was obtained from the DMDC database. While we present more detailed information in describing the cohorts, we created four collapsed race/ethnicity categories to allow sufficient numbers to analyze variations: white, non-Hispanic; black, non-Hispanic; Hispanic (including white/Hispanic; black/Hispanic; American Indian or Alaskan native/Hispanic; Asian or Pacific Islander/Hispanic; and race Unknown/Hispanic), and Other/Unknown (including American Indian/Alaskan Native; Asian or Pacific Islander; Multiracial; and Unknown). We analyzed measure scores for female and male service members, and four subgroups classified by pay grade: E1–E4; E5–E9, O1–O3, and O4–O6. Service members in C1, O7–O8, and warrant categories of pay grade were not included in these analyses due to small numbers. Using information about deployment from the DMDC database (Contingency Tracking System–Deployments), we compared measure scores between those with no deployments at the time of cohort entry and those with one or more deployments. We examined variation in measure scores by these characteristics for all administrative data–based measures.

Most quality measures are specified so that each individual in the denominator is assigned either 0 or 1 for not having or having the care specified in the numerator, respectively. To allow for the possibility of having a small number of service members eligible for these measures for some subgroups, we performed a Fisher's exact test to test for statistically significant differences between measure scores in these subgroups. We report which differences in measure scores are statistically significant based on

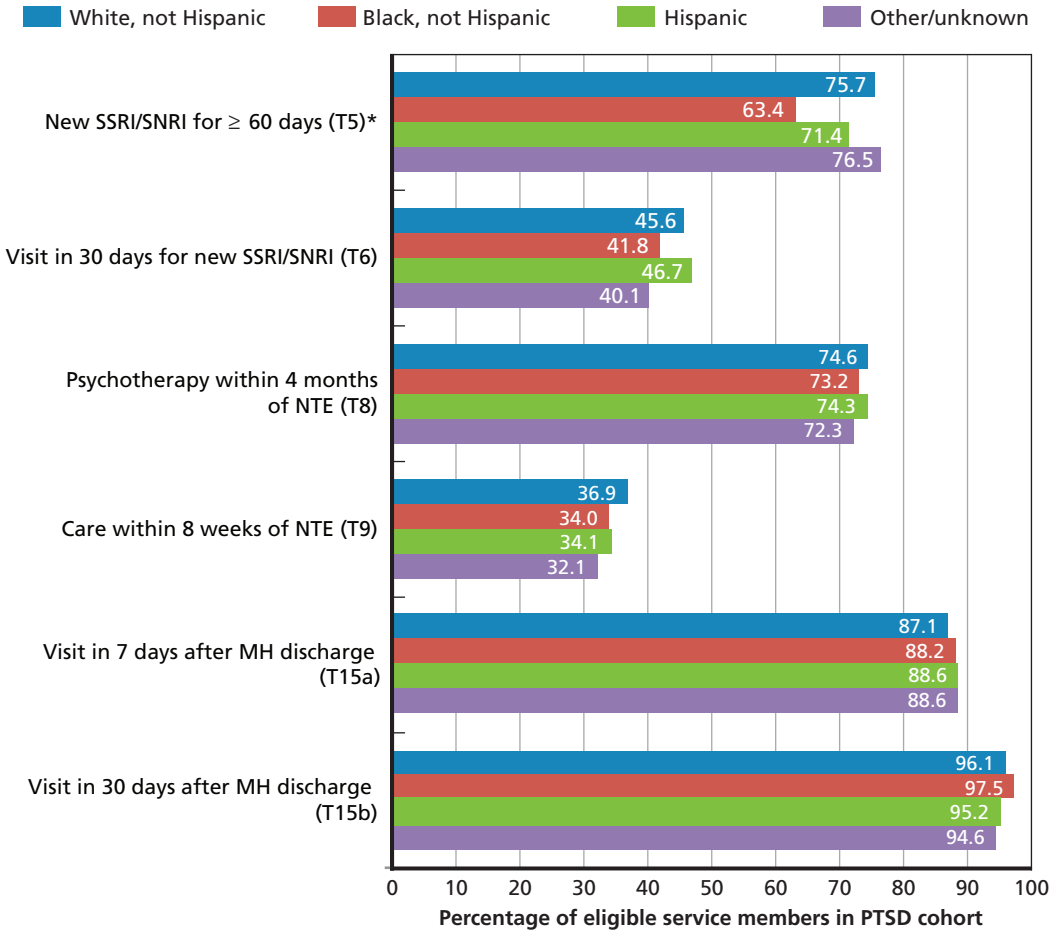
multiplicity-adjusted *P*-values to account for the fact we are conducting a large number of statistical tests. If we were to assume the commonly used *P*-value cutoff of 0.05 to identify statistically significant results, we would expect 5 percent of all tests to be statistically significant by chance alone, even in the absence of true differences. By using the adjusted *P*-values to assess the statistical significance of the differences reported in this appendix, we control for the false discovery rate (the proportion of statistically significant findings that are false positives) (Benjamini and Hochberg, 1995) to be 5 percent. In Figures D.1 through D.14, measure scores that are significantly different at $P < 0.05$ are marked with an asterisk on the horizontal axis (i.e., x-axis) of the figure.

Figure D.1
Measure Scores, by Age, for Active-Component Service Members in PTSD Cohort, 2013–2014



NOTE: * indicates measure scores by age are significantly different at $P<0.05$.

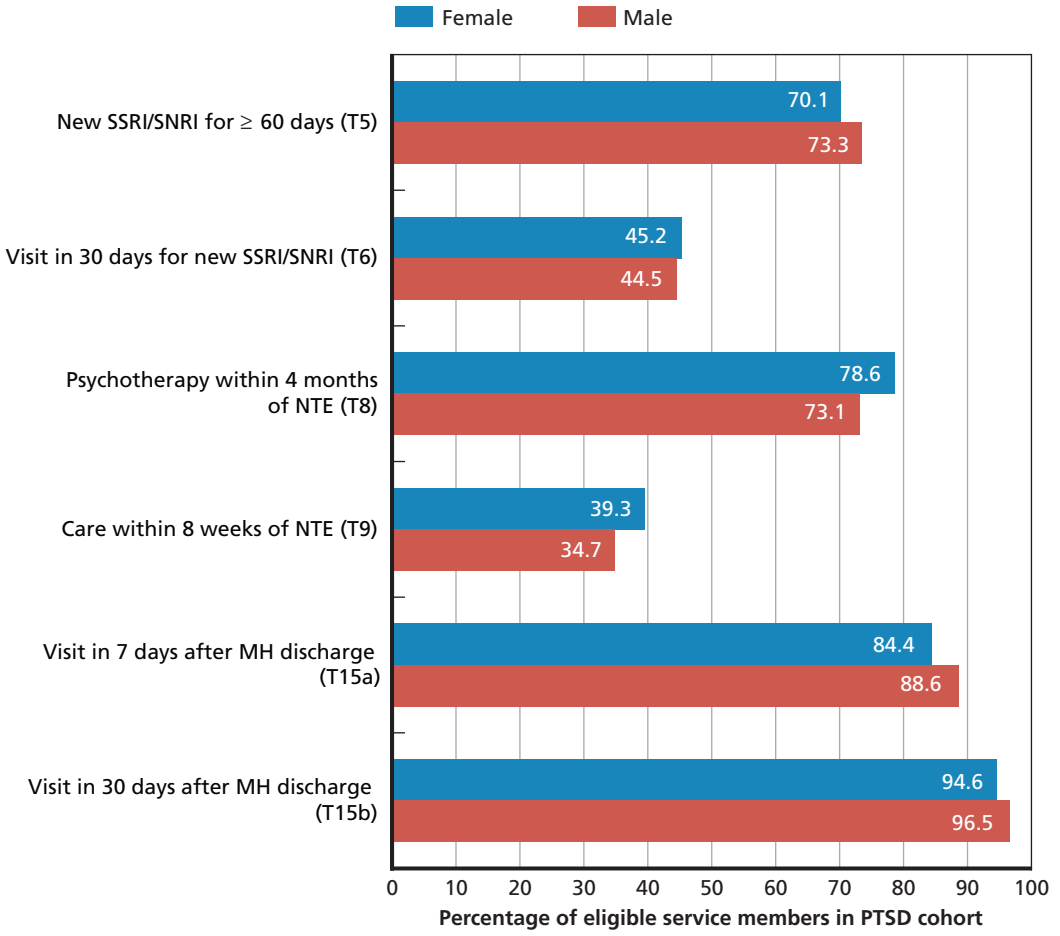
Figure D.2
Measure Scores, by Race/Ethnicity, for Active-Component Service Members in PTSD Cohort, 2013–2014



NOTE: * indicates measure scores by race/ethnicity are significantly different at $P<0.05$.

RAND *RR1542-D.2*

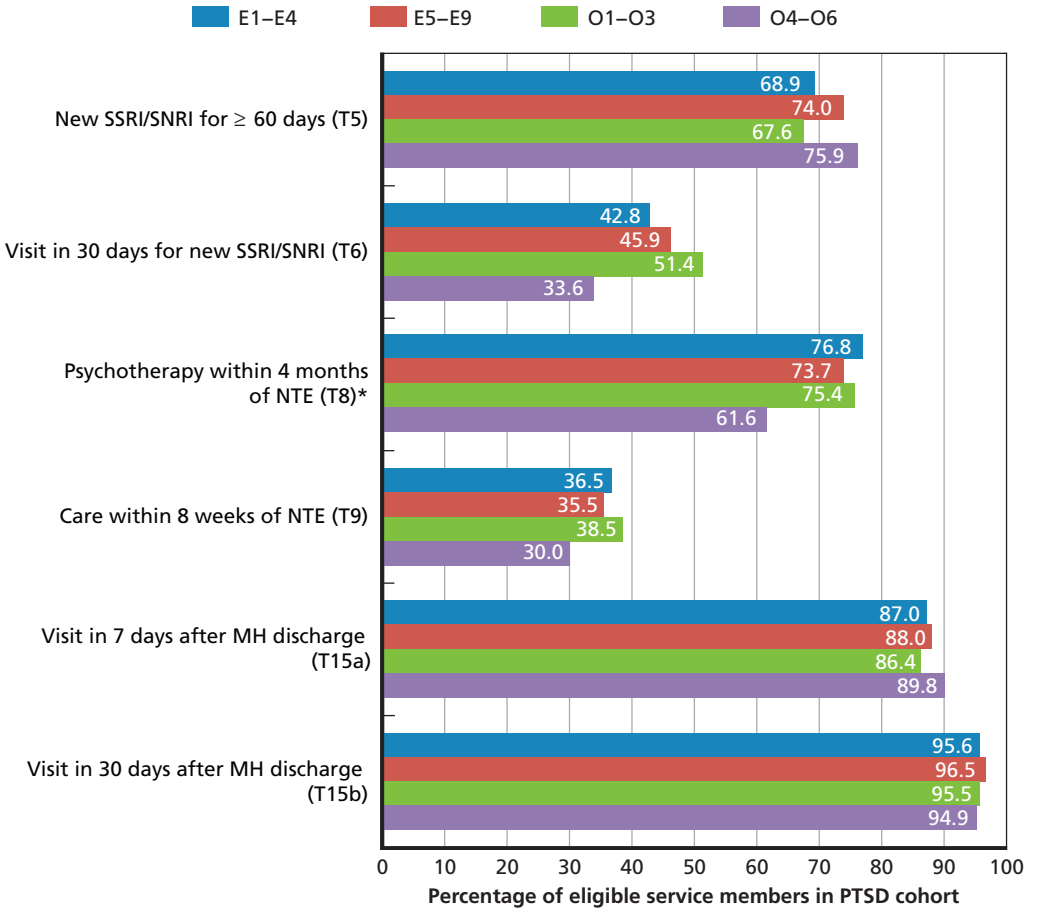
Figure D.3
Measure Scores, by Gender, for Active-Component Service Members in PTSD Cohort, 2013–2014



NOTE: * indicates measure scores by gender are significantly different at $P<0.05$.

RAND *RR1542-D.3*

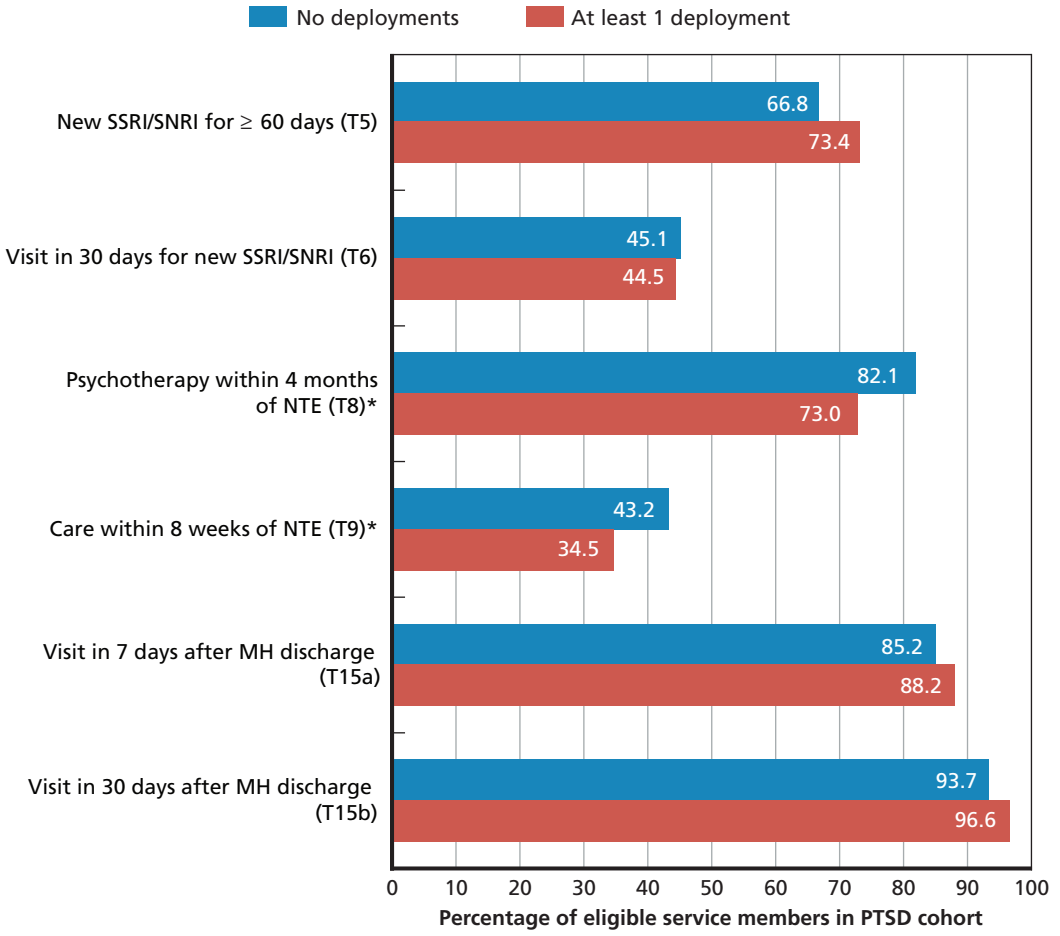
Figure D.4
Measure Scores, by Pay Grade, for Active-Component Service Members in PTSD Cohort, 2013–2014



NOTE: * indicates measure scores by pay grade are significantly different at $P<0.05$.

RAND *RR1542-D.4*

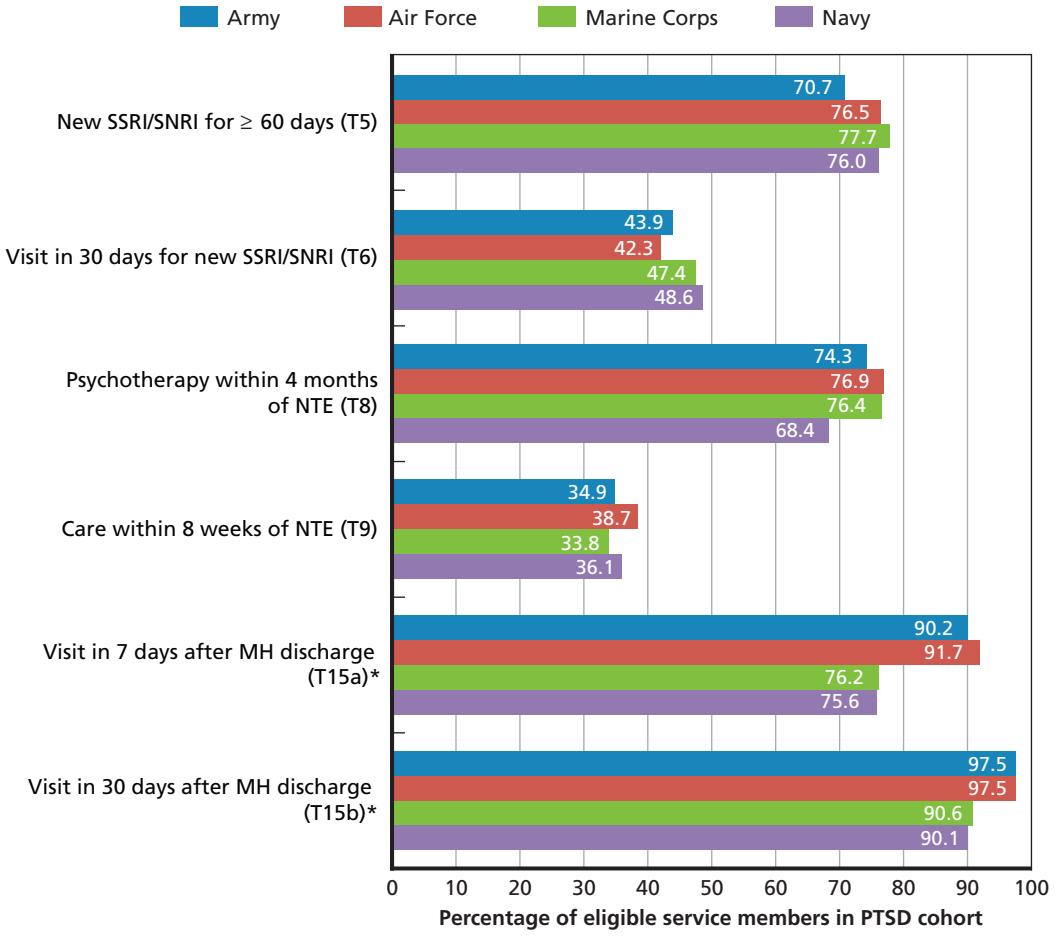
Figure D.5
Measure Scores, by Deployment History, for Active-Component Service Members in PTSD Cohort, 2013–2014



NOTE: * indicates measure scores by deployment history are significantly different at $P<0.05$.

RAND *RR1542-D.5*

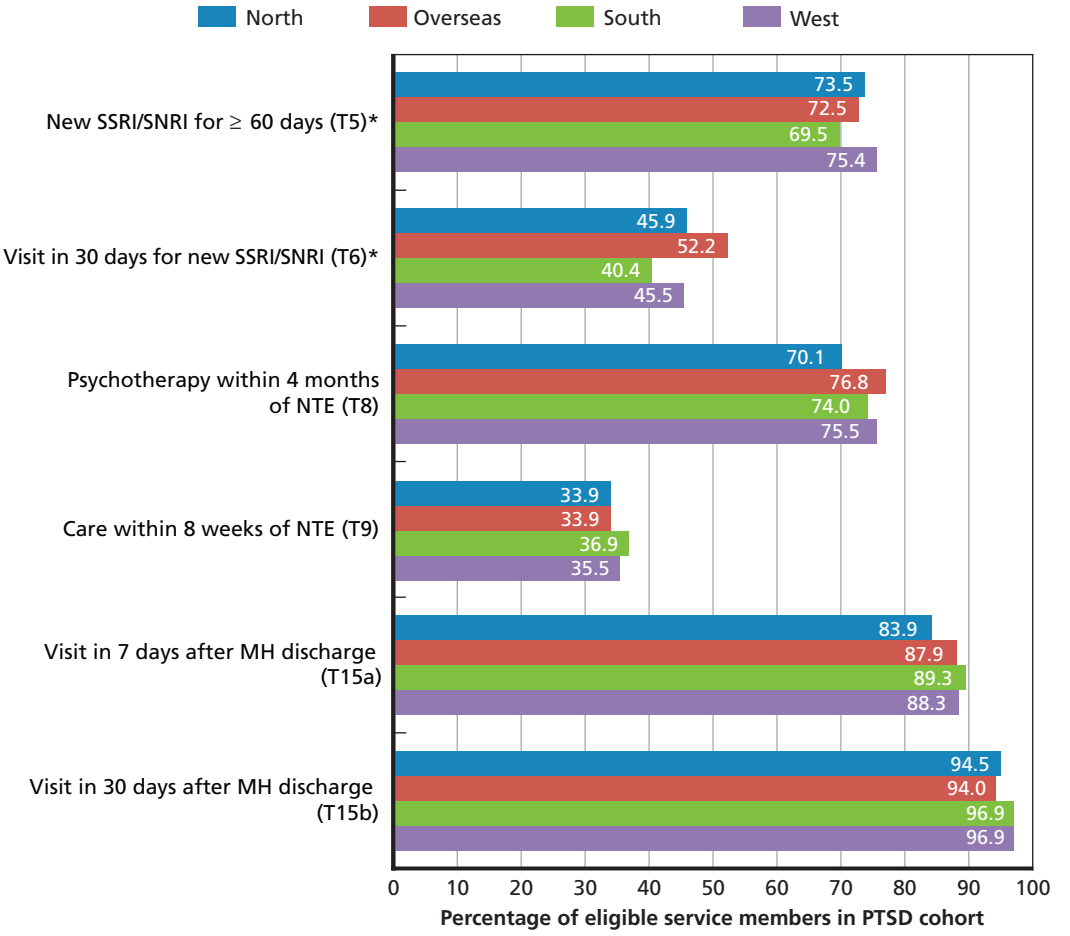
Figure D.6
Measure Scores, by Branch of Service, for Active-Component Service Members in PTSD Cohort, 2013–2014



NOTE: * indicates measure scores by branch of service are significantly different at $P<0.05$.

RAND *RR1542-D.6*

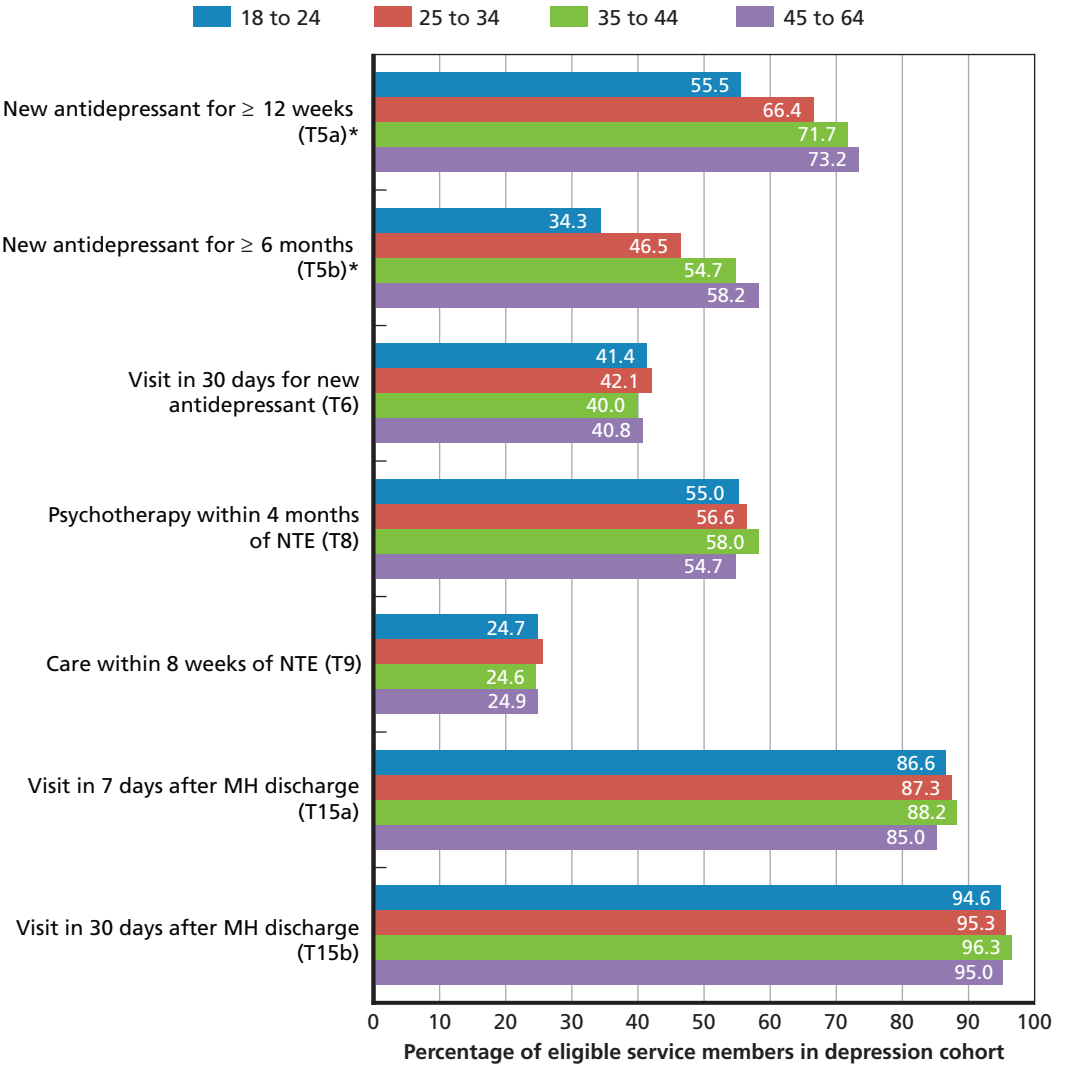
Figure D.7
Measure Scores, by TRICARE Region, for Active-Component Service Members in PTSD Cohort, 2013–2014



NOTE: * indicates measure scores by TRICARE region are significantly different at $P<0.05$.

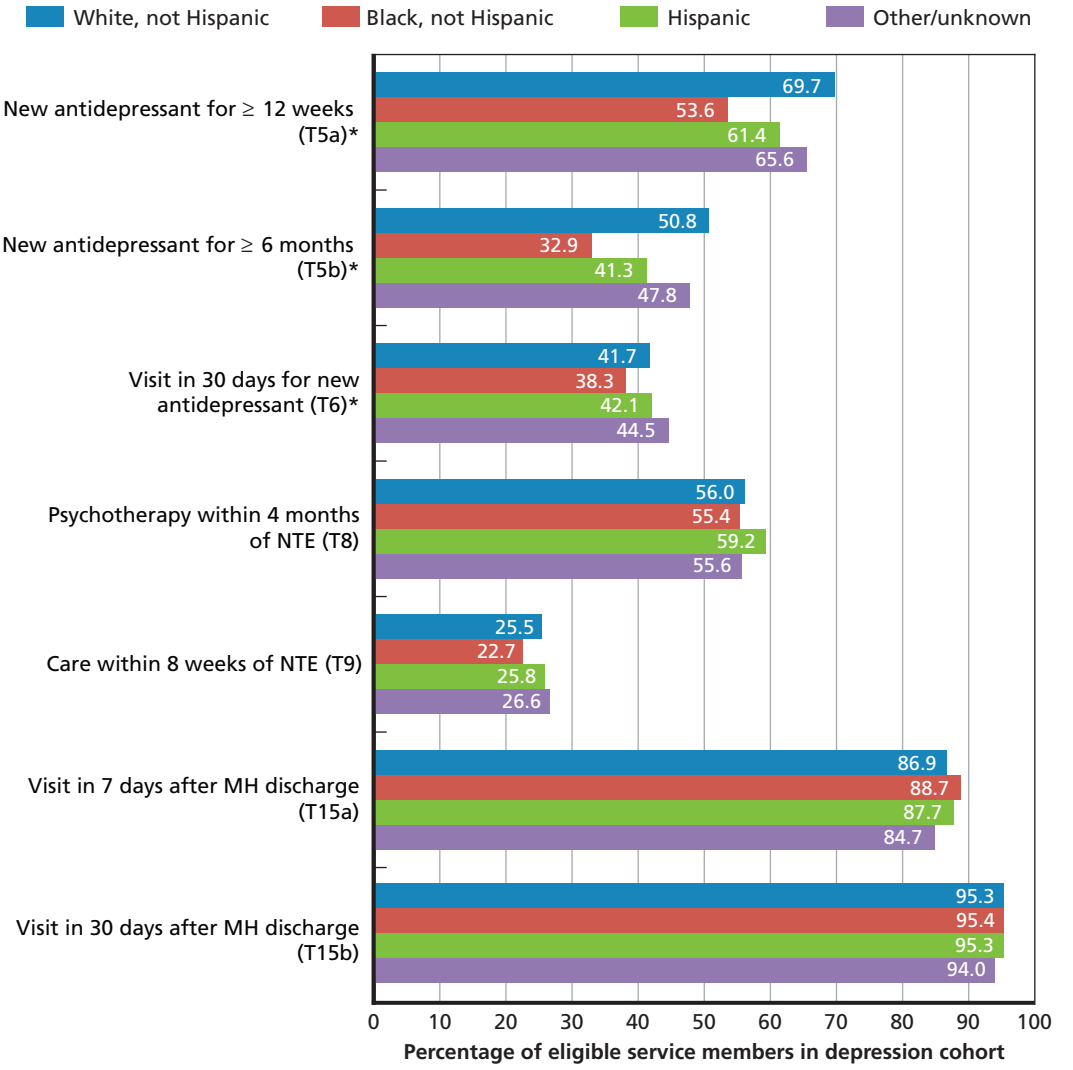
RAND *RR1542-D.7*

Figure D.8
Measure Scores, by Age, for Active-Component Service Members in Depression Cohort, 2013–2014



NOTE: * indicates measure scores by age are significantly different at $P<0.05$.

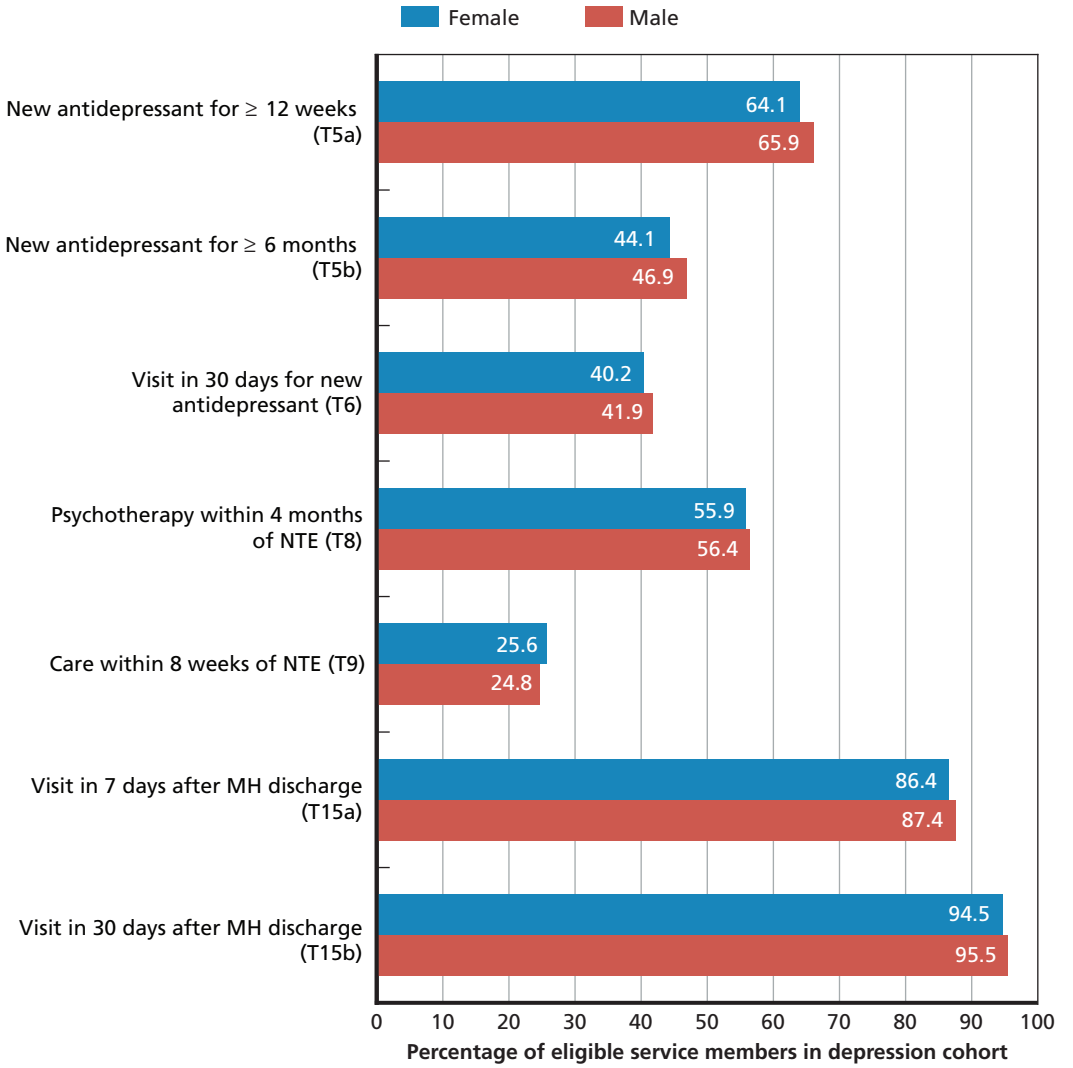
Figure D.9
Measure Scores, by Race/Ethnicity, for Active-Component Service Members in Depression Cohort, 2013–2014



NOTE: * indicates measure scores by race/ethnicity are significantly different at $P<0.05$.

RAND *RR1542-D.9*

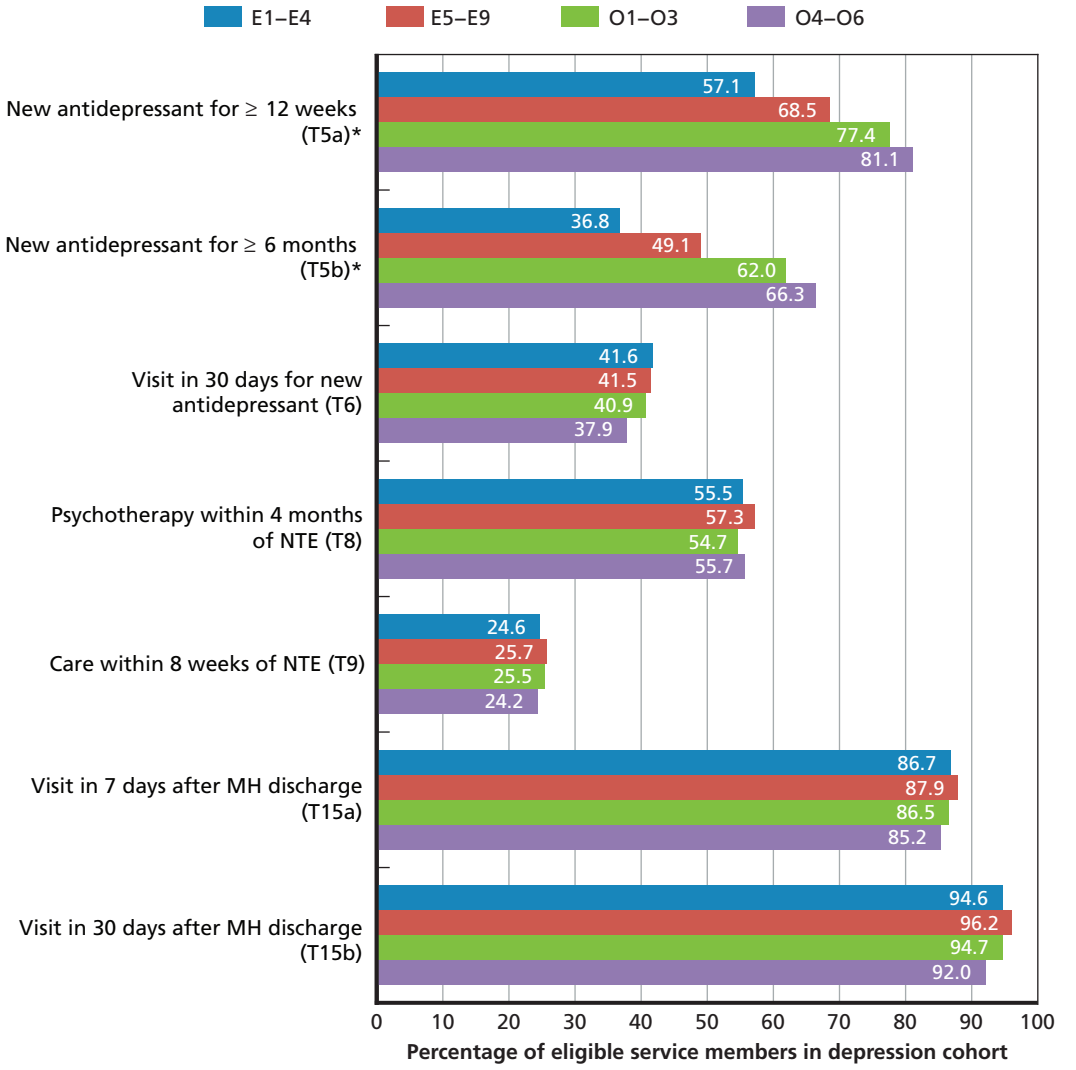
Figure D.10
Measure Scores, by Gender, for Active-Component Service Members in Depression Cohort, 2013–2014



NOTE: * indicates measure scores by gender are significantly different at $P<0.05$.

RAND *RR1542-D.10*

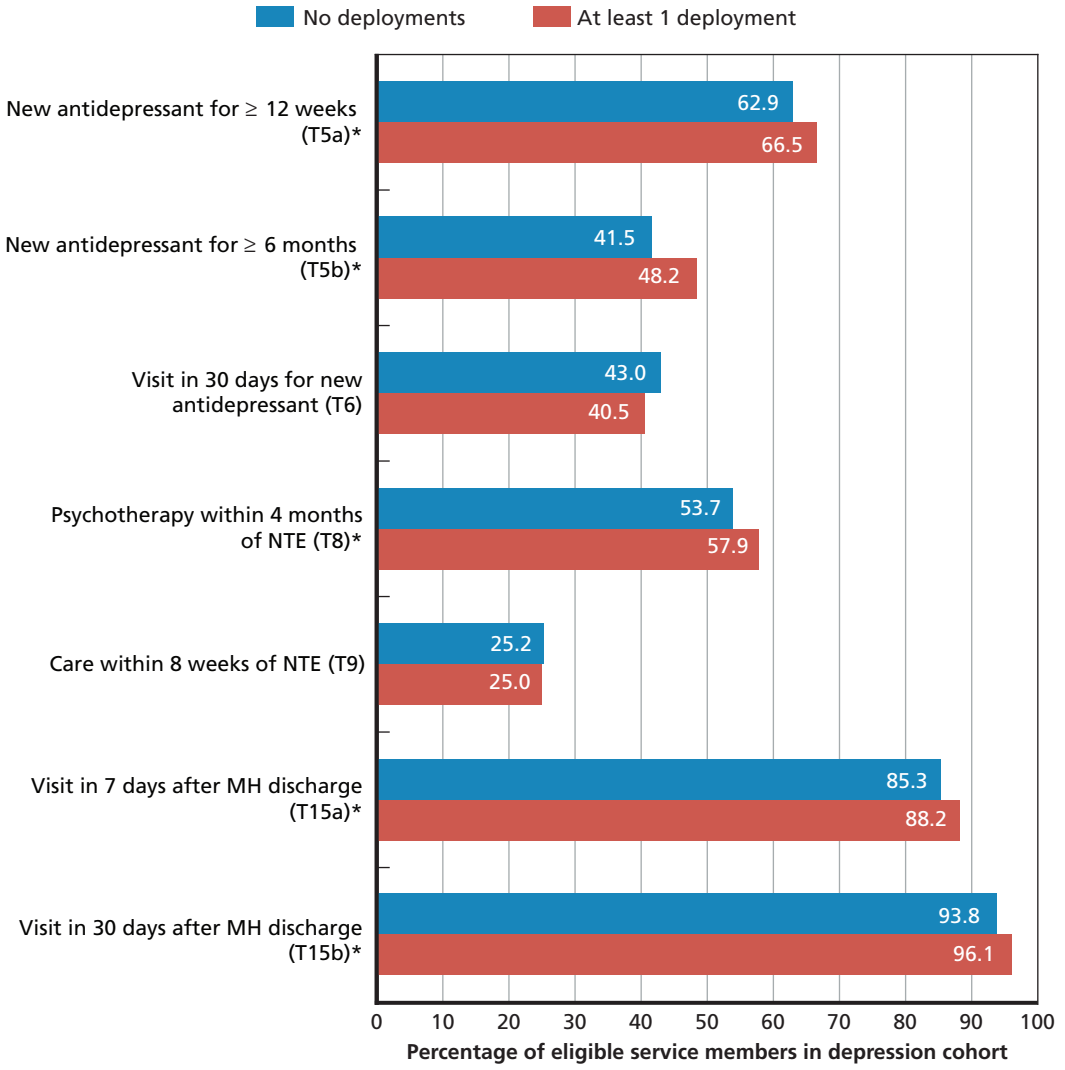
Figure D.11
Measure Scores, by Pay Grade, for Active-Component Service Members in Depression Cohort, 2013–2014



NOTE: * indicates measure scores by paygrade are significantly different at $P<0.05$.

RAND *RR1542-D.11*

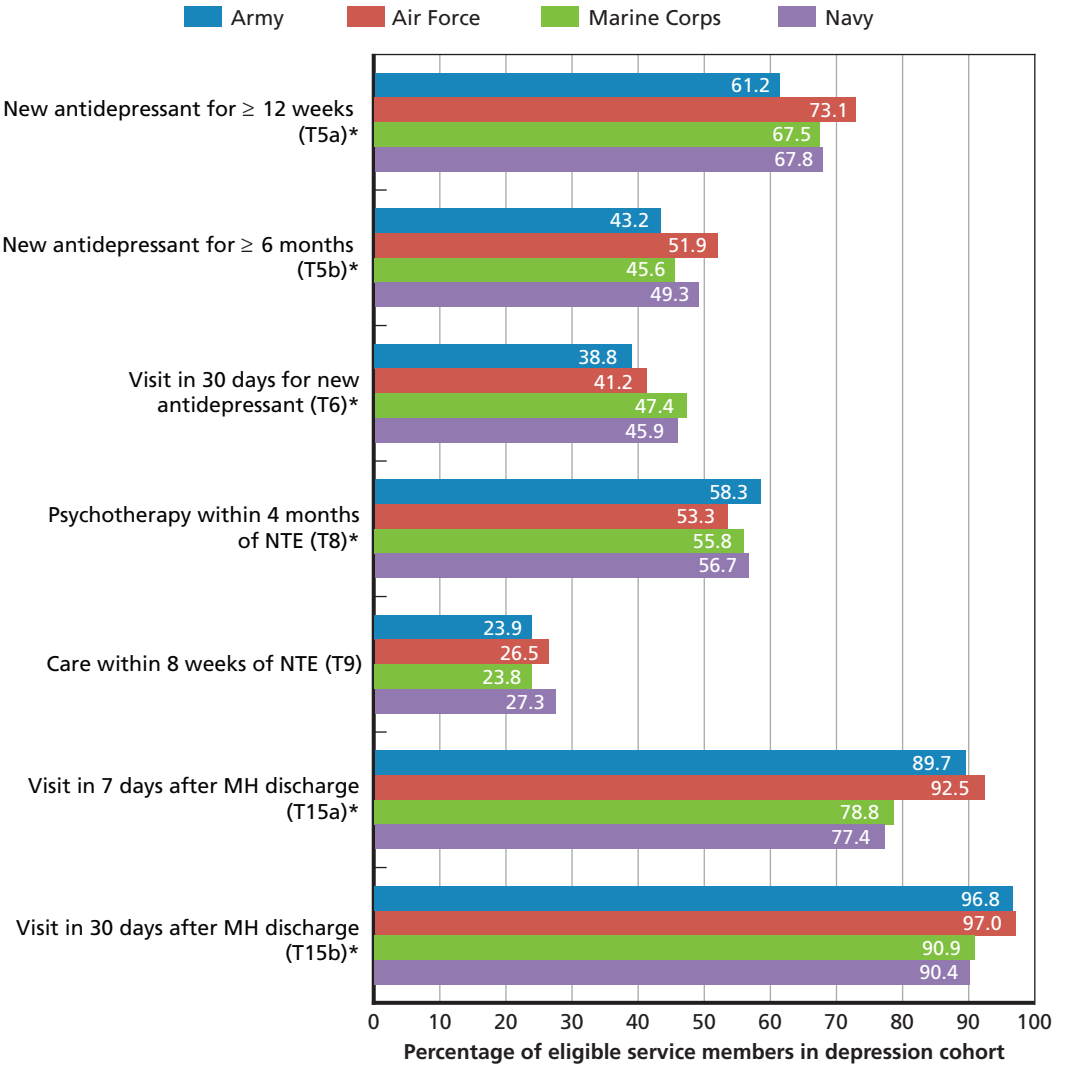
Figure D.12
Measure Scores, by Deployment History, for Active-Component Service Members in Depression Cohort, 2013–2014



NOTE: * indicates measure scores by deployment history are significantly different at $P<0.05$.

RAND *RR1542-D.12*

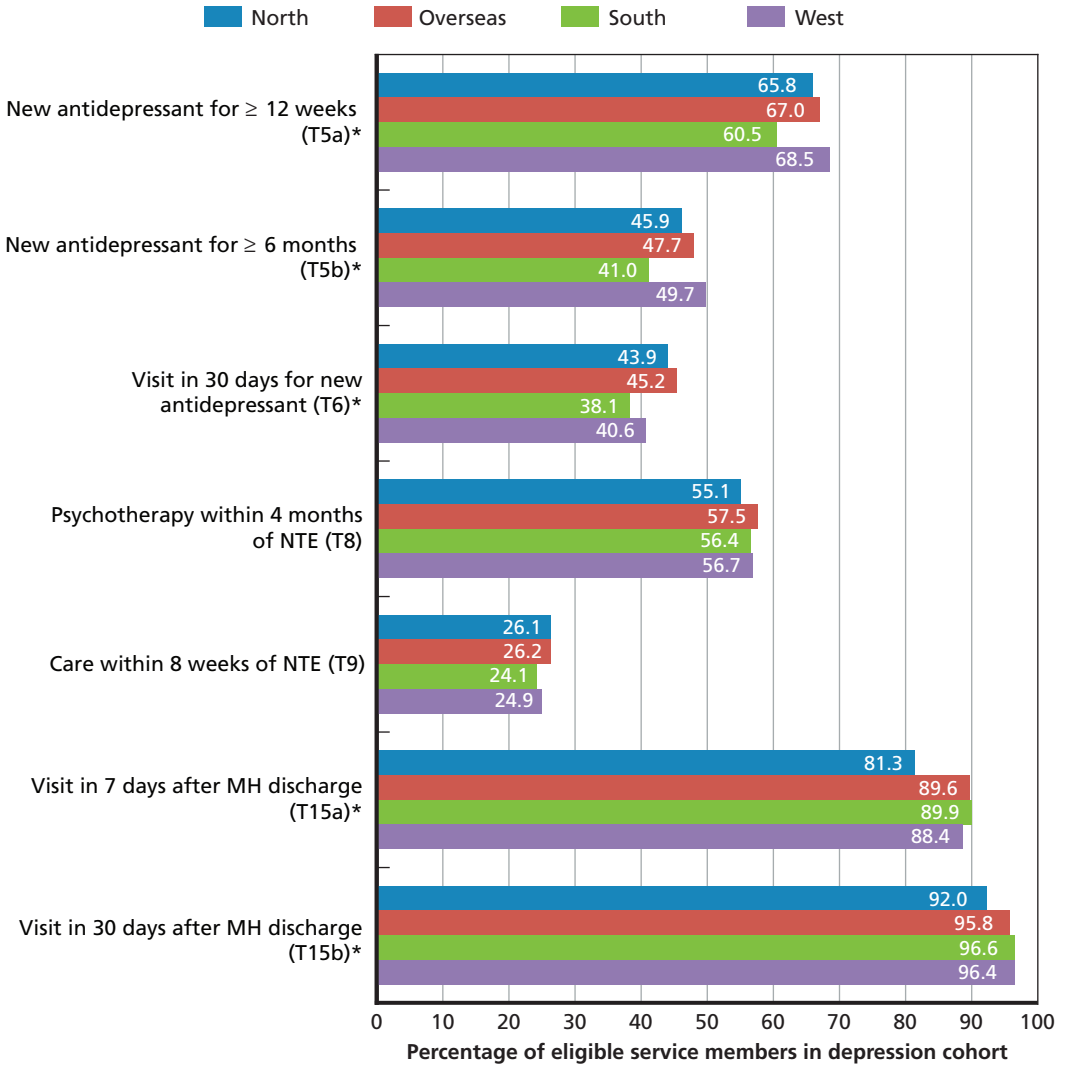
Figure D.13
Measure Scores, by Branch of Service, for Active-Component Service Members in Depression Cohort, 2013–2014



NOTE: * indicates measure scores by branch of service are significantly different at $P<0.05$.

RAND *RR1542-D.13*

Figure D.14
Measure Scores, by TRICARE Region, for Active-Component Service Members in Depression Cohort, 2013–2014



NOTE: * indicates measure scores by TRICARE region are significantly different at $P<0.05$.

RAND *RR1542-D.14*

APPENDIX E

Multivariable Regression Output

Table E.1
Logistic Regression Predicting the Probability of Having a Six-Month PCL Score Among Service Members in the PTSD Cohort with at Least One Direct Care Mental Health Specialty Visit (n = 9,017)

			95% confidence interval			
Parameter	**DF**	**Odds Ratio**	**Lower**	**Upper**	**Wald Chi-Square**	**Pr > Chi Sq**
Intercept	1	0.1830	0.1432	0.2341	183.334	<.0001
Charlson comorbidity index	1	1.5641	1.3692	1.7867	43.3896	<.0001
Years of service	1	0.9995	0.9848	1.0144	0.0051	0.9431
Age (versus 45 and older)	3				4.1877	0.2419
18–24	1	1.1184	0.9414	1.3287	1.6202	0.2031
25–34	1	1.0672	0.9607	1.1854	1.4708	0.2252
35–44	1	1.0369	0.9285	1.1578	0.4136	0.5201
Sex (female)	1	0.9090	0.8400	0.9837	5.6101	0.0179
Race/ethnicity (versus other/unknown)	3				2.793	0.4247
White, not Hispanic	1	0.9528	0.8733	1.0397	1.1759	0.2782
Black, not Hispanic	1	0.9991	0.8984	1.1110	0.0003	0.9864
Hispanic	1	0.9365	0.8271	1.0604	1.0714	0.3006
Pay grade (versus warrant)	4				9.4088	0.0517
E1–E4	1	1.1948	1.0123	1.4103	4.4286	0.0353
E5–E9	1	1.1023	0.9733	1.2484	2.3538	0.125
O1–O3	1	1.0803	0.8422	1.3856	0.3694	0.5433
O4–O8	1	0.6850	0.5222	0.8984	7.4746	0.0063
Region (versus unknown)	4				159.0329	<.0001
North	1	1.7421	1.5274	1.9870	68.3528	<.0001
Overseas	1	1.4667	1.2677	1.6969	26.4952	<.0001
South	1	1.0617	0.9436	1.1947	0.9917	0.3193
West	1	0.6930	0.6087	0.7890	30.7276	<.0001

Table E.2
Repeated Measures Linear Regression to Estimate Change in PCL Scores Between Baseline and Six Months, PTSD Cohort (n = 1,762)

Parameter	Estimate	Standard Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	54.079929	4.1957257	12.89	< 0.0001			
Follow-up time (6 months)	–1.545076	0.3212179	–4.81	< 0.0001			
Charlson comorbidity index	0.3664467	0.7069272	0.52	0.6043			
Years of service	–0.1486603	0.0864902	–1.72	0.0858			
Age (versus 45 and older)					3	0.91	0.5086
18–24	–1.2724538	1.9629714	–0.65	0.5169			
25–34	–0.7501698	1.5955443	–0.47	0.6383			
35–44	–1.7821156	1.4403384	–1.24	0.2161			
Sex (female)	–1.615581	0.906429	–1.78	0.0749			
Race/ethnicity (versus other/unknown)					3	8.47	< 0.0001
White, not Hispanic	–4.0781785	1.2469096	–3.27	0.0011			
Black, not Hispanic	–0.3435189	1.3742011	–0.25	0.8026			
Hispanic	–2.6473091	1.4958668	–1.77	0.0769			
Pay grade (versus warrant)					4	2.02	0.0794
E1–E4	4.5178257	2.1148232	2.14	0.0328			
E5–E9	4.7892724	1.8917449	2.53	0.0114			
O1–O3	5.6162574	2.690779	2.09	0.037			
O4–O8	2.4182823	2.51347	0.96	0.3361			
Region (versus unknown)					4	7.74	< 0.0001
North	3.3044107	2.763172	1.2	0.2319			
Overseas	–1.6095189	2.8005178	–0.57	0.5656			
South	1.7101886	2.7402654	0.62	0.5326			
West	3.3685641	2.766088	1.22	0.2235			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care for PTSD.

Table E.3
Logistic Regression Predicting the Probability of Having a Six-Month PHQ-9 Score Among Service Members in the Depression Cohort with at Least One Direct Care Mental Health Specialty Visit (n = 14,861)

			95% confidence interval			
Parameter	**DF**	**Odds Ratio**	**Lower**	**Upper**	**Wald Chi-Square**	**Pr > Chi Sq**
Intercept	1	0.1135	0.0918	0.1403	403.1742	< 0.0001
Charlson comorbidity index	1	1.7570	1.5645	1.9732	90.7091	< 0.0001
Years of service	1	1.0002	0.9870	1.0136	0.0011	0.9733
Age (versus 45 and older)	3				3.6045	0.3075
18–24	1	0.9097	0.7928	1.0439	1.812	0.1783
25–34	1	1.0013	0.9121	1.0992	0.0007	0.9782
35–44	1	1.0889	0.9861	1.2025	2.8403	0.0919
Sex (female)	1	0.9272	0.8766	0.9806	6.9693	0.0083
Race/ethnicity (versus other/unknown)	3				2.3917	0.4952
White, not Hispanic	1	1.0017	0.9247	1.0851	0.0018	0.9662
Black, not Hispanic	1	0.9288	0.8439	1.0222	2.288	0.1304
Hispanic	1	1.0386	0.9270	1.1637	0.4274	0.5133
Pay grade (versus warrant)	4				15.2702	0.0042
E1–E4	1	1.2440	1.0741	1.4407	8.5032	0.0035
E5–E9	1	1.1845	1.0562	1.3284	8.3875	0.0038
O1–O3	1	0.9482	0.7691	1.1690	0.2481	0.6184
O4–O8	1	0.7461	0.5908	0.9423	6.0427	0.014
Region (versus unknown)	4				111.165	< 0.0001
North	1	1.3053	1.1586	1.4704	19.2019	< 0.0001
Overseas	1	1.2951	1.1320	1.4818	14.1583	0.0002
South	1	1.2964	1.1637	1.4443	22.2208	< 0.0001
West	1	0.7192	0.6383	0.8104	29.2884	< 0.0001

Table E.4
Repeated Measures Linear Regression to Estimate Change in PHQ-9 Scores Between baseline and Six Months, Depression Cohort (n = 2,009)

Parameter	Estimate	Standard Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	16.202372	1.6576033	9.77	< 0.0001			
Follow-up time (6 months)	–1.7545435	0.1383024	–12.69	< 0.0001			
Charlson comorbidity index	–0.1621093	0.2242849	–0.72	0.4699			
Years of service	–0.0441005	0.0321951	–1.37	0.1709			
Age (versus 45 and older)					3	5.68	0.0007
18–24	–2.3073249	0.755035	–3.06	0.0023			
25–34	–1.1336726	0.6771574	–1.67	0.0943			
35–44	–0.5702195	0.6237291	–0.91	0.3607			
Sex (female)	–0.8074236	0.2740616	–2.95	0.0033			
Race/ethnicity (versus other/ unknown)					3	5.53	0.0009
White, not Hispanic	–1.5362557	0.5069765	–3.03	0.0025			
Black, not Hispanic	-0.82662	0.5284023	–1.56	0.1179			
Hispanic	–0.5237872	0.5896382	–0.89	0.3745			
Pay grade (versus warrant)					4	2.98	0.0182
E1–E4	1.4723376	0.9243663	1.59	0.1114			
E5–E9	1.0151564	0.8595288	1.18	0.2377			
O1–O3	0.5326707	1.0376602	0.51	0.6078			
O4–O8	–1.1593817	1.0956698	–1.06	0.2901			
Region (versus unknown)					4	2.9	0.0208
North	1.7887971	1.1349198	1.58	0.1152			
Overseas	0.7633913	1.1563324	0.66	0.5092			
South	1.0326001	1.1261517	0.92	0.3593			
West	1.4679019	1.1377682	1.29	0.1971			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care for depression.

Table E.5
Logistic Regression Predicting the Probability of Having a Six-Month PCL Score Among Service Members in the PTSD Cohort Eligible for One of Four PTSD Quality Indicators (n = 3,022)

		95% confidence interval			
Parameter	**DF**	**Odds Ratio**	**Lower**	**Upper**	**Wald Chi-Square**	**Pr > Chi Sq**
Intercept	1	0.2124178	0.1367753	0.329894	47.5846	< 0.0001
Charlson comorbidity index	1	1.5622077	1.1699956	2.0858991	9.1421	0.0025
Years of service	1	0.9731666	0.9481259	0.9988686	4.2035	0.0403
Age (versus 45 and older)	3				0.5904	0.8986
18–24	1	0.9514197	0.7103226	1.2743497	0.1115	0.7384
25–34	1	0.9349147	0.7820348	1.117681	0.5458	0.4601
35–44	1	1.0103532	0.8331313	1.2252734	0.011	0.9165
Sex (female)	1	0.9525621	0.827515	1.0965052	0.4571	0.499
Race/ethnicity (versus other/unknown)	3				3.7602	0.2885
White, not Hispanic	1	0.9155777	0.7874747	1.06452	1.3162	0.2513
Black, not Hispanic	1	1.0284985	0.858631	1.2319718	0.0928	0.7606
Hispanic	1	0.8653684	0.7042682	1.0633199	1.8913	0.1691
Pay grade (versus warrant)	4				16.0387	0.003
E–-E4	1	1.4630159	1.0675134	2.005048	5.6027	0.0179
E5–E9	1	1.5409514	1.2030404	1.9737751	11.7189	0.0006
O1–O3	1	0.6101198	0.348584	1.0678807	2.9937	0.0836
O4–O6	1	0.5210027	0.2894977	0.9376374	4.7295	0.0296
Region (versus unknown)	4				40.1805	< 0.0001
North	1	1.4915264	1.1676533	1.9052324	10.2537	0.0014
Overseas	1	1.6681246	1.2906371	2.1560202	15.2842	< 0.0001
South	1	1.0064306	0.8155456	1.2419938	0.0036	0.9524
West	1	0.7566912	0.6043438	0.9474435	5.9066	0.0151

Table E.6
Logistic Regression Predicting the Probability of Having a Six-Month PHQ-9 Score Among Service Members in the Depression Cohort Eligible for One of Five Depression Quality Indicators (n = 6,667)

			95% confidence interval			
Parameter	**DF**	**Odds Ratio**	**Lower**	**Upper**	**Wald Chi-Square**	**Pr > Chi Sq**
Intercept	1	0.0922	0.0643	0.1321	168.8182	< 0.0001
Charlson comorbidity index	1	1.7997	1.4776	2.1919	34.1299	< 0.0001
Years of service	1	1.0057	0.9841	1.0278	0.2634	0.6078
Age (versus 45 and older)	3				0.6848	0.8768
18–24	1	1.0460	0.8397	1.3031	0.1613	0.688
25–34	1	1.0667	0.9142	1.2446	0.6729	0.412
35–44	1	1.0007	0.8483	1.1805	0.0001	0.9935
Sex (female)	1	0.9213	0.8433	1.0064	3.3114	0.0688
Race/ethnicity (versus other/ unknown)	3				3.8226	0.2813
White, not Hispanic	1	0.9779	0.8638	1.1071	0.1245	0.7242
Black, not Hispanic	1	0.8627	0.7430	1.0017	3.7588	0.0525
Hispanic	1	1.0394	0.8716	1.2394	0.1844	0.6676
Pay grade (versus warrant)	4				5.7514	0.2185
E1–E4	1	1.2512	0.9851	1.5892	3.3714	0.0663
E5–E9	1	1.2373	1.0214	1.4987	4.7374	0.0295
O1–O3	1	0.9890	0.7057	1.3860	0.0041	0.9487
O4–O6	1	0.8348	0.5659	1.2313	0.8295	0.3624
Region (versus unknown)	4				27.8486	< 0.0001
North	1	1.3542	1.1040	1.6610	8.4591	0.0036
Overseas	1	1.4503	1.1611	1.8117	10.7272	0.0011
South	1	1.1459	0.9460	1.3880	1.9382	0.1639
West	1	0.8763	0.7171	1.0709	1.6646	0.197

Table E.7
Linear Regression of Six-Month PCL Score, for Service Members Eligible for PTSD Quality Measure T5 (n = 378)

Parameter	Estimate	Std Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	24.09381	8.4253765	2.86	0.0045			
Baseline PCL score	0.6089946	0.0490421	12.42	< 0.0001			
T5	–0.9492785	1.3875029	–0.68	0.4943			
Charlson comorbidity index	–0.6092103	1.3165132	–0.46	0.6438			
Years of service	–0.0522537	0.1846509	–0.28	0.7773			
Age (versus 45 and older)					3	0.46	0.7076
18–24	0.6285606	3.8896391	0.16	0.8717			
25–34	2.4722293	3.04312	0.81	0.4171			
35–44	1.2394905	2.6580749	0.47	0.6413			
Sex (female)	0.6286399	1.8272088	0.34	0.731			
Race/ethnicity (versus other/ unknown)					3	2.15	0.0939
White, not Hispanic	–4.9793058	2.5303482	–1.97	0.0498			
Black, not Hispanic	–2.0794947	2.7082063	–0.77	0.4431			
Hispanic	–1.8579575	3.268737	–0.57	0.5701			
Pay grade (versus warrant)					4	1.48	0.2086
E1–E4	1.0467869	3.4474881	0.3	0.7616			
E5–E9	1.716099	2.4937536	0.69	0.4918			
O1–O3	7.3332888	3.4567533	2.12	0.0345			
O4–O8	6.0709779	5.1084546	1.19	0.2354			
Region (versus unknown)					4	1.99	0.0957
North	–1.4255915	5.3836285	–0.26	0.7913			
Overseas	–6.6881852	5.5571527	–1.2	0.2295			
South	–4.6214977	5.3291934	–0.87	0.3864			
West	–2.4528142	5.4158294	–0.45	0.6509			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care who are eligible for one of the PCL quality measures.

Table E.8
Linear Regression of Six-month PCL Score, for Service Members Eligible for PTSD Quality Measure T6 (n = 374)

Parameter	Estimate	Standard Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	22.751573	8.3044882	2.74	0.0064			
Baseline PCL Score	0.5986604	0.0507344	11.8	<.0001			
T6	1.8595078	1.3500453	1.38	0.1692			
Charlson comorbidity index	–0.6858307	1.3118006	–0.52	0.6014			
Years of Service	–0.0567256	0.1833864	–0.31	0.7572			
Age (versus 45 and older)					3	0.53	0.6636
18–24	0.4335254	3.8685547	0.11	0.9108			
25–34	2.5531405	3.0305884	0.84	0.4001			
35–44	1.2658536	2.6334619	0.48	0.631			
Sex (Female)	0.4575682	1.8058851	0.25	0.8001			
Race/Ethnicity (versus other/ unknown)					3	2.14	0.0951
White, not Hispanic	–4.8978048	2.6745784	–1.83	0.0679			
Black, not Hispanic	–1.4577236	2.7738324	–0.53	0.5995			
Hispanic	–1.8104281	3.3815092	–0.54	0.5927			
Pay Grade (versus warrant)					4	1.58	0.1794
E1–E4	1.7838581	3.4397361	0.52	0.6043			
E5–E9	1.7883315	2.4733919	0.72	0.4701			
O1–O3	7.2379781	3.2183394	2.25	0.0251			
O4–O8	5.8522023	5.0530764	1.16	0.2475			
Region (versus unknown)					4	1.92	0.1063
North	–1.5977049	5.353252	–0.3	0.7655			
Overseas	–6.9021627	5.5332391	–1.25	0.213			
South	–4.3839619	5.2872159	–0.83	0.4075			
West	–2.3660544	5.4012204	–0.44	0.6616			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care who are eligible for one of the PCL quality measures.

Table E.9
Linear Regression of Six-month PCL Score, for Service Members Eligible for PTSD Quality Measure T8 (n = 285)

Parameter	Estimate	Std Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	21.529272	9.6196117	2.24	0.026			
Baseline PCL Score	0.718561	0.0477191	15.06	<.0001			
T8	0.681038	2.0198232	0.34	0.7362			
Charlson comorbidity index	3.844763	2.9638708	1.3	0.1956			
Years of Service	–0.09073	0.2031836	–0.45	0.6555			
Age (versus 45 and older)					3	0.31	0.8159
18–24	2.473127	4.3989817	0.56	0.5744			
25–34	2.421284	3.4621451	0.7	0.4849			
35–44	0.448045	2.9643648	0.15	0.88			
Sex (Female)	–0.021646	2.3223805	–0.01	0.9926			
Race/Ethnicity (versus other/ unknown)					3	4.44	0.0046
White, not Hispanic	–3.398421	2.1367191	–1.59	0.1128			
Black, not Hispanic	3.177155	2.3575501	1.35	0.1788			
Hispanic	–2.842189	2.4846168	–1.14	0.2536			
Pay Grade (versus warrant)					4	1.66	0.1603
E1–E4	–8.640764	6.4753568	–1.33	0.1831			
E5–E9	–8.478718	6.1112077	–1.39	0.1664			
O1–O3	–11.700252	6.8975091	–1.7	0.0909			
O4–O8	–1.870167	7.060362	–0.26	0.7913			
Region (versus unknown)					4	1.09	0.36
North	1.872373	3.9978037	0.47	0.6399			
Overseas	–2.738249	4.1913163	–0.65	0.5141			
South	–2.088115	3.8532714	–0.54	0.5883			
West	–1.479095	3.7790794	–0.39	0.6958			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care who are eligible for one of the PCL quality measures.

Table E.10
Linear Regression of Six-month PCL Score, for Service Members Eligible for PTSD Quality Measure T9 (n = 273)

Parameter	Estimate	Std Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	12.322824	10.175347	1.21	0.2269			
Baseline PCL Score	0.7338373	0.0508942	14.42	<.0001			
T9	−0.7165221	1.6407481	−0.44	0.6627			
Charlson comorbidity index	3.1980118	3.343209	0.96	0.3396			
Years of Service	−0.1144285	0.208355	−0.55	0.5833			
Age (versus 45 and older)					3	0.19	0.9004
18–24	1.7929395	4.4849239	0.4	0.6896			
25–34	1.9279902	3.4267085	0.56	0.5741			
35–44	0.3691693	2.9166506	0.13	0.8994			
Sex (Female)	−0.0063303	2.398732	0	0.9979			
Race/Ethnicity (versus other/unknown)					3	3.16	0.0251
White, not Hispanic	−2.3837034	2.140936	−1.11	0.2665			
Black, not Hispanic	3.6927305	2.3591912	1.57	0.1187			
Hispanic	−1.5728588	2.5843913	−0.61	0.5433			
Pay Grade (versus warrant)					4	0.97	0.4239
E1–E4	0.7614966	8.0767382	0.09	0.925			
E5–E9	0.8312865	7.7720951	0.11	0.9149			
O1–O3	−2.0755391	8.4388318	−0.25	0.8059			
O4–O8	7.0197578	8.4510206	0.83	0.4069			
Region (versus unknown)					4	0.85	0.4945
North	1.2643931	3.9750503	0.32	0.7507			
Overseas	−2.7036246	4.1599843	−0.65	0.5163			
South	−2.1657434	3.8809383	−0.56	0.5773			
West	−1.8193428	3.7833705	−0.48	0.631			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care who are eligible for one of the PCL quality measures.

Table E.11
Linear Regression of Six-month PCL Score, for Service Members Eligible for PTSD Composite Quality Measure (n = 572)

Parameter	Estimate	Standard Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	18.513788	6.2688255	2.95	0.0033			
Baseline PCL Score	0.6668508	0.0391773	17.02	<.0001			
PTSD Composite	0.3741594	0.7284695	0.51	0.6077			
Charlson comorbidity index	–0.0793284	1.3045232	–0.06	0.9515			
Years of Service	–0.0655527	0.1464123	–0.45	0.6545			
Age (versus 45 and older)					3	0.58	0.6255
18–24	1.6014536	3.073423	0.52	0.6025			
25–34	2.6853539	2.3679716	1.13	0.2573			
35–44	1.5479774	2.0604294	0.75	0.4528			
Sex (Female)	0.4235546	1.4512999	0.29	0.7705			
Race/Ethnicity (versus other/unknown)					3	4.62	0.0033
White, not Hispanic	–4.1098441	1.8786895	–2.19	0.0291			
Black, not Hispanic	0.4749359	1.9689564	0.24	0.8095			
Hispanic	–2.3446388	2.3635792	–0.99	0.3216			
Pay Grade (versus warrant)					4	0.76	0.5504
E1–E4	–0.4039633	2.9473031	–0.14	0.891			
E5–E9	–0.1574184	2.3573836	–0.07	0.9468			
O1–O3	0.8474058	3.6915282	0.23	0.8185			
O4–O8	4.9722377	3.7132359	1.34	0.1811			
Region (versus unknown)					4	2.08	0.0826
North	0.373692	3.7840065	0.1	0.9214			
Overseas	–4.4187888	3.9356123	–1.12	0.262			
South	–2.9849715	3.7204046	–0.8	0.4227			
West	–1.7451752	3.7284499	–0.47	0.6399			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care who are eligible for one of the PCL quality measures.

Table E.12
Linear Regression of Six-month PHQ-9 Score, for Service Members Eligible for Depression Quality Measure T5a (n = 594)

Parameter	Estimate	Standard Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	2.6688941	3.17500712	0.84	0.4009			
Baseline PHQ-9 Score	0.4997521	0.04217392	11.85	<.0001			
T5a	–0.8044677	0.56352969	–1.43	0.1539			
Charlson comorbidity index	–0.6158836	0.55051002	–1.12	0.2637			
Years of Service	0.0712762	0.06277131	1.14	0.2566			
Age (versus 45 and older)					3	0.78	0.5064
18–24	–0.2597561	1.41357327	–0.18	0.8543			
25–34	0.6194248	1.20915206	0.51	0.6086			
35–44	0.7354712	1.07482442	0.68	0.4941			
Sex (Female)	–0.0633859	0.58845702	–0.11	0.9143			
Race/Ethnicity (versus other/unknown)					3	0.49	0.6906
White, not Hispanic	–0.4890446	1.19231126	–0.41	0.6818			
Black, not Hispanic	–0.250791	1.24818521	–0.2	0.8408			
Hispanic	0.3892209	1.32916943	0.29	0.7698			
Pay Grade (versus warrant)					4	2.17	0.0708
E1–E4	1.8742863	1.37936807	1.36	0.1747			
E5–E9	1.3574059	1.25627626	1.08	0.2804			
O1–O3	–1.8777487	1.86347602	–1.01	0.314			
O4–O8	1.9717054	1.61380485	1.22	0.2223			
Region (versus unknown)					4	0.32	0.8639
North	1.6174261	2.20469222	0.73	0.4635			
Overseas	1.0245698	2.20933136	0.46	0.643			
South	1.1855459	2.19314063	0.54	0.589			
West	1.4448178	2.20878308	0.65	0.5133			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care who are eligible for one of the depression quality measures.

Table E.13
Linear Regression of Six-month PHQ-9 Score, for Service Members Eligible for Depression Quality Measure T5b (n = 588)

Parameter	Estimate	Standard Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	2.7112391	3.01952445	0.9	0.3696			
Baseline PHQ-9 Score	0.5039625	0.04202046	11.99	<.0001			
T5b	–0.7780131	0.49152455	–1.58	0.114			
Charlson comorbidity index	–0.5922028	0.59720469	–0.99	0.3218			
Years of Service	0.0708024	0.06279724	1.13	0.26			
Age (versus 45 and older)					3	0.66	0.5788
18–24	–0.2571705	1.41524281	–0.18	0.8559			
25–34	0.5025471	1.21805517	0.41	0.6801			
35–44	0.7177693	1.08996479	0.66	0.5105			
Sex (Female)	–0.085661	0.58754351	–0.15	0.8841			
Race/Ethnicity (versus other/unknown)					3	0.68	0.5632
White, not Hispanic	–0.5966507	1.19620543	–0.5	0.6181			
Black, not Hispanic	–0.2398017	1.24625167	–0.19	0.8475			
Hispanic	0.3960325	1.33968814	0.3	0.7676			
Pay Grade (versus warrant)					4	2.52	0.0402
E1–E4	1.7810905	1.39019844	1.28	0.2006			
E5–E9	1.3027622	1.26689501	1.03	0.3042			
O1–O3	–1.8472764	1.86483616	–0.99	0.3223			
O4–O8	1.8488978	1.62094655	1.14	0.2545			
Region (versus unknown)					4	0.4	0.8079
North	1.5539214	2.08385077	0.75	0.4561			
Overseas	0.9715238	2.08927395	0.47	0.6421			
South	1.1558034	2.07192894	0.56	0.5772			
West	1.4614298	2.0801229	0.7	0.4826			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care who are eligible for one of the depression quality measures.

Table E.14
Linear Regression of Six-month PHQ-9 Score, for Service Members Eligible for Depression Quality Measure T6 (n = 582)

Parameter	Estimate	Standard Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	2.3792188	3.00439131	0.79	0.4287			
Baseline PHQ-9 Score	0.4993489	0.0423106	11.8	<.0001			
T6	–0.1122411	0.46950604	–0.24	0.8111			
Charlson comorbidity index	–0.639439	0.55274425	–1.16	0.2478			
Years of Service	0.0669776	0.06313961	1.06	0.2892			
Age (versus 45 and older)					3	0.66	0.5788
18–24	–0.5819502	1.42084663	–0.41	0.6823			
25–34	0.3146453	1.22355771	0.26	0.7971			
35–44	0.3337025	1.09698831	0.3	0.7611			
Sex (Female)	–0.1700953	0.59137957	–0.29	0.7737			
Race/Ethnicity (versus other/unknown)					3	0.68	0.5632
White, not Hispanic	–0.5622227	1.20262485	–0.47	0.6403			
Black, not Hispanic	–0.0718409	1.24546483	–0.06	0.954			
Hispanic	0.429379	1.3417726	0.32	0.7491			
Pay Grade (versus warrant)					4	2.52	0.0402
E1–E4	2.115732	1.41711722	1.49	0.136			
E5–E9	1.46985	1.29224072	1.14	0.2558			
O1–O3	–1.8059603	1.88364391	–0.96	0.3381			
O4–O8	2.4436478	1.64462539	1.49	0.1379			
Region (versus unknown)					4	0.4	0.8079
North	1.6057295	2.09935246	0.76	0.4447			
Overseas	0.8428553	2.10272808	0.4	0.6887			
South	1.2084876	2.08560913	0.58	0.5625			
West	1.3348125	2.09153864	0.64	0.5236			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care who are eligible for one of the depression quality measures.

Table E.15
Linear Regression of Six-month PHQ-9 Score, for Service Members Eligible for Depression Quality Measure T8 (n = 444)

Parameter	Estimate	Standard Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	–4.0532263	3.57057722	–1.14	0.2569			
Baseline PHQ-9 Score	0.513381	0.05272174	9.74	<.0001			
T8	–0.8397588	0.63890315	–1.31	0.1894			
Charlson comorbidity index	–0.5013789	0.40900189	–1.23	0.2209			
Years of Service	0.1573315	0.07706148	2.04	0.0418			
Age (versus 45 and older)					3	0.45	0.717
18–24	1.0924686	1.92432374	0.57	0.5705			
25–34	1.3558848	1.73385203	0.78	0.4346			
35–44	1.7249257	1.59692211	1.08	0.2807			
Sex (Female)	–0.6629684	0.66206331	–1	0.3172			
Race/Ethnicity (versus other/unknown)					3	0.56	0.6422
White, not Hispanic	0.8102586	1.13126841	0.72	0.4742			
Black, not Hispanic	0.464142	1.18941269	0.39	0.6966			
Hispanic	–0.1766676	1.31905209	–0.13	0.8935			
Pay Grade (versus warrant)					4	2.19	0.0687
E1–E4	3.6673792	2.18786051	1.68	0.0944			
E5–E9	1.5625327	2.05707852	0.76	0.4479			
O1–O3	2.7094384	2.54261567	1.07	0.2872			
O4–O8	–0.1210868	2.38433261	–0.05	0.9595			
Region (versus unknown)					4	3.64	0.0063
North	4.2647071	1.51157237	2.82	0.005			
Overseas	4.0316315	1.5630012	2.58	0.0102			
South	3.9852969	1.36070504	2.93	0.0036			
West	5.6338818	1.54756134	3.64	0.0003			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care who are eligible for one of the depression quality measures.

Table E.16
Linear Regression of Six-month PHQ-9 Score, for Service Members Eligible for Depression Quality Measure T9 (n = 420)

Parameter	Estimate	Standard Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	–5.1444679	3.48520055	–1.48	0.1407			
Baseline PHQ-9 Score	0.5169945	0.05462969	9.46	<.0001			
T9	–0.1502132	0.55853051	–0.27	0.7881			
Charlson comorbidity index	–0.3364195	0.42531733	–0.79	0.4294			
Years of Service	0.1752826	0.07883943	2.22	0.0267			
Age (versus 45 and older)					3	0.29	0.8291
18–24	1.0410915	1.96945563	0.53	0.5973			
25–34	1.2417664	1.77844766	0.7	0.4854			
35–44	1.4545301	1.63512518	0.89	0.3742			
Sex (Female)	–0.8281607	0.67446728	–1.23	0.2202			
Race/Ethnicity (versus other/unknown)					3	0.57	0.6363
White, not Hispanic	0.9665169	1.11998971	0.86	0.3886			
Black, not Hispanic	0.6034013	1.18907292	0.51	0.6121			
Hispanic	0.0266985	1.33315394	0.02	0.984			
Pay Grade (versus warrant)					4	2.34	0.0542
E1-E4	3.5714657	2.0277772	1.76	0.0789			
E5-E9	1.2842641	1.88508625	0.68	0.4961			
O1-O3	3.5093334	2.37688562	1.48	0.1406			
O4-O8	0.1892491	2.24370233	0.08	0.9328			
Region (versus unknown)					4	3.7	0.0056
North	4.8981547	1.63360543	3	0.0029			
Overseas	4.1465862	1.65949266	2.5	0.0128			
South	4.3514331	1.45968641	2.98	0.003			
West	6.0307264	1.6595267	3.63	0.0003			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care who are eligible for one of the depression quality measures.

Table E.17
Linear Regression of Six-month PHQ-9 Score, for Service Members Eligible for Depression Composite Quality Measure (n = 823)

Parameter	Estimate	Standard Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	1.2210289	2.76212597	0.44	0.6586			
Baseline PHQ-9 Score	0.504211	0.03812001	13.23	<.0001			
Depression Composite	–0.484303	0.27177891	–1.78	0.0751			
Charlson comorbidity index	–0.4761898	0.39199689	–1.21	0.2248			
Years of Service	0.0987473	0.05673139	1.74	0.0821			
Age (versus 45 and older)					3	0.6	0.6133
18–24	0.2506846	1.29159627	0.19	0.8462			
25–34	0.7577555	1.12077431	0.68	0.4992			
35–44	0.9450747	1.00641464	0.94	0.348			
Sex (Female)	–0.3639268	0.50384202	–0.72	0.4703			
Race/Ethnicity (versus other/unknown)					3	0.1	0.9626
White, not Hispanic	–0.0079953	0.96806372	–0.01	0.9934			
Black, not Hispanic	0.1539288	1.00268029	0.15	0.878			
Hispanic	0.2994486	1.08836009	0.28	0.7833			
Pay Grade (versus warrant)					4	2.21	0.0662
E1–E4	2.4613301	1.19095822	2.07	0.0391			
E5–E9	1.4247304	1.06889615	1.33	0.1829			
O1–O3	–0.1968666	1.54653996	–0.13	0.8987			
O4–O8	1.5932143	1.37630266	1.16	0.2474			
Region (versus unknown)					4	0.7	0.591
North	1.4271359	1.99728795	0.71	0.4751			
Overseas	0.8821105	2.01070927	0.44	0.661			
South	0.9825279	1.9854452	0.49	0.6208			
West	1.6806681	1.9959096	0.84	0.4			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care who are eligible for one of the depression quality measures.

Table E.18
Repeated Measures Linear Regression to Estimate Change in PCL Scores Between Baseline and Six Months for Those with Initial PCL Score ≥ 50, PTSD Cohort (n = 1,127)

Parameter	Estimate	Standard Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	61.008392	3.8413186	15.88	<.0001			
Follow-up time (6 months)	–4.694438	0.3759758	–12.49	<.0001			
Charlson comorbidity index	0.9209706	0.6455994	1.43	0.154			
Years of Service	–0.0173381	0.0801198	–0.22	0.8287			
Age (versus 45 and older)					3	2.03	0.108
18–24	3.0754394	1.7532035	1.75	0.0797			
25–34	2.0530386	1.4316904	1.43	0.1519			
35–44	0.3187661	1.2868011	0.25	0.8044			
Sex (Female)	–2.5417495	0.8147902	–3.12	0.0019			
Race/Ethnicity (versus other/unknown)					3	7.65	<.0001
White, not Hispanic	–3.2665222	1.0908551	–2.99	0.0028			
Black, not Hispanic	–0.0891722	1.1892418	–0.07	0.9402			
Hispanic	–1.4813345	1.3505057	–1.1	0.2729			
Pay Grade (versus warrant)					4	0.87	0.4796
E1–E4	3.6797818	2.2158475	1.66	0.0971			
E5–E9	3.6755421	2.0366271	1.8	0.0714			
O1–O3	4.0708065	2.4789493	1.64	0.1008			
O4–O8	4.011287	2.5590854	1.57	0.1173			
Region (versus unknown)					4	2.97	0.0188
North	0.7198005	2.4429591	0.29	0.7683			
Overseas	–2.4264743	2.508045	–0.97	0.3335			
South	0.2803175	2.4313114	0.12	0.9082			
West	–0.4194299	2.4511227	–0.17	0.8642			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care for PTSD.

Table E.19
Repeated Measures Linear Regression to Estimate Change in PCL Scores Between Baseline and Six Months for Those with a New Treatment Episode, PTSD Cohort (n = 289)

Parameter	Estimate	Standard Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	63.697144	12.02331	5.3	<.0001			
Follow-up time (6 months)	–2.9594609	0.7432612	–3.98	<.0001			
Charlson comorbidity index	4.1703527	3.9939902	1.04	0.2973			
Years of Service	–0.3551505	0.2409825	–1.47	0.1416			
Age (versus 45 and older)					3	0.97	0.4095
18–24	2.4220974	5.3815329	0.45	0.653			
25–34	5.2494488	4.6695035	1.12	0.2619			
35–44	3.6129686	4.1362204	0.87	0.3831			
Sex (Female)	–3.5992331	2.2996481	–1.57	0.1187			
Race/Ethnicity (versus other/unknown)					3	6.34	0.0004
White, not Hispanic	–8.8109546	2.6648876	–3.31	0.0011			
Black, not Hispanic	–1.2470497	3.1666351	–0.39	0.694			
Hispanic	–6.6411163	3.1784885	–2.09	0.0375			
Pay Grade (versus warrant)					4	0.81	0.5194
E1–E4	–3.4307319	9.0575781	–0.38	0.7051			
E5–E9	–1.5537306	8.7782472	–0.18	0.8596			
O1–O3	–6.0029603	13.084244	–0.46	0.6467			
O4–O8	3.5662811	9.3237293	0.38	0.7024			
Region (versus unknown)					4	0.93	0.4445
North	0.535189	5.0349873	0.11	0.9154			
Overseas	–2.9155893	5.0871248	–0.57	0.567			
South	–3.5048321	4.9825082	–0.7	0.4824			
West	–1.2922789	4.907719	–0.26	0.7925			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care for PTSD.

Table E.20
Repeated Measures Linear Regression to Estimate Change in PCL Scores Between Baseline and Six Months for Those with a New Treatment Episode and Initial PCL Score >= 50, PTSD Cohort (n = 185)

Parameter	Estimate	Standard Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	83.66415	9.2860218	9.01	<.0001			
Follow-up time (6 months)	–5.554559	0.8947394	–6.21	<.0001			
Charlson comorbidity index	4.655017	3.758841	1.24	0.2171			
Years of Service	–0.081701	0.1934239	–0.42	0.6732			
Age (versus 45 and older)					3	2.07	0.1053
18–24	2.503383	4.2451916	0.59	0.5561			
25–34	1.749062	3.3355091	0.52	0.6006			
35–44	–3.632772	2.8399773	–1.28	0.2024			
Sex (Female)	–5.51209	2.5197415	–2.19	0.03			
Race/Ethnicity (versus other/unknown)					3	4.79	0.03
White, not Hispanic	–5.490816	2.670032	–2.06	0.0411			
Black, not Hispanic	2.725258	3.038582	0.9	0.3709			
Hispanic	–2.542327	3.0931581	–0.82	0.4122			
Pay Grade (versus warrant)					4	22.65	<.0001
E1–E4	–20.278111	2.610101	–7.77	<.0001			
E5–E9	–19.127392	2.1165768	–9.04	<.0001			
O1–O3	–17.939979	3.0882087	–5.81	<.0001			
O4–O8	–18.155151	3.0724623	–5.91	<.0001			
Region (versus unknown)					4	0.17	0.9517
North	1.571674	7.22779	0.22	0.8281			
Overseas	0.234436	7.1131276	0.03	0.9737			
South	1.671896	7.0457631	0.24	0.8127			
West	0.429791	7.0242897	0.06	0.9513			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care for PTSD.

Table E.21
Repeated Measures Linear Regression to Estimate Change in PHQ-9 Scores Between Baseline and Six Months, Depression Cohort (n = 1,731)

Parameter	Estimate	Standard Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	17.855475	1.3847347	12.89	<.0001			
Follow-up time (6 months)	–2.3468983	0.1459958	–16.08	<.0001			
Charlson comorbidity index	0.0638857	0.1829768	0.35	0.727			
Years of Service	0.0011968	0.0278178	0.04	0.9657			
Age (versus 45 and older)					3	3.03	0.0285
18–24	–1.5940983	0.6419848	–2.48	0.0131			
25–34	–0.8032494	0.5711942	–1.41	0.1598			
35–44	–0.600743	0.5317609	–1.13	0.2587			
Sex (Female)	–0.7550736	0.2393308	–3.15	0.0016			
Race/Ethnicity (versus other/unknown)					3	6.31	0.0003
White, not Hispanic	–1.5381003	0.4190355	–3.67	0.0002			
Black, not Hispanic	–1.0866147	0.4430393	–2.45	0.0143			
Hispanic	–0.6345229	0.4908555	–1.29	0.1963			
Pay Grade (versus warrant)					4	1.43	0.2206
E1–E4	1.4403867	0.8754605	1.65	0.1001			
E5–E9	1.0604783	0.8220644	1.29	0.1972			
O1–O3	0.6564214	0.9691324	0.68	0.4983			
O4–O8	0.1783629	1.0285281	0.17	0.8623			
Region (versus unknown)					4	0.52	0.7179
North	0.5814253	0.8324674	0.7	0.485			
Overseas	0.3193132	0.8559657	0.37	0.7092			
South	0.2398801	0.8253011	0.29	0.7713			
West	0.4406168	0.8342219	0.53	0.5974			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care for depression.

Table E.22
Repeated Measures Linear Regression to Estimate Change in PHQ-9 Scores Between Baseline and Six Months, Depression Cohort (n = 455)

Parameter	Estimate	Standard Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	2.1585184	3.3763462	0.64	0.5229			
Follow-up time (6 months)	–2.2198735	0.292064	–7.6	<.0001			
Charlson comorbidity index	–0.1246618	0.4598381	–0.27	0.7864			
Years of Service	0.0366934	0.0643557	0.57	0.5688			
Age (versus 45 and older)					3	1.78	0.1507
18–24	–2.8186334	1.6582902	–1.7	0.0899			
25–34	–1.5457048	1.5059934	–1.03	0.3053			
35–44	–0.7491483	1.3154735	–0.57	0.5693			
Sex (Female)	0.0010615	0.606573	0	0.9986			
Race/Ethnicity (versus other/unknown)					3	0.64	0.5914
White, not Hispanic	–0.8735238	0.9269769	–0.94	0.3465			
Black, not Hispanic	–0.1253167	0.9918882	–0.13	0.8995			
Hispanic	–0.3006481	1.079496	–0.28	0.7807			
Pay Grade (versus warrant)					4	6.15	<.0001
E1–E4	4.5803433	2.2828018	2.01	0.0454			
E5–E9	3.1211786	2.2107919	1.41	0.1587			
O1–O3	4.6682615	2.5095843	1.86	0.0635			
O4–O8	–1.1437303	2.3601999	–0.48	0.6282			
Region (versus unknown)					4	25.98	<.0001
North	11.775948	1.2278286	9.59	<.0001			
Overseas	11.504342	1.3090082	8.79	<.0001			
South	10.876308	1.187561	9.16	<.0001			
West	12.278319	1.2280333	10	<.0001			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care for depression.

Table E.23
Repeated Measures Linear Regression to Estimate Change in PHQ-9 Scores Between Baseline and Six Months, Depression Cohort (n = 389)

Parameter	Estimate	Standard Error	t Value	Pr > |t|	Num DF	F Value	Pr > F
Intercept	16.279533	1.7829257	9.13	<.0001			
Follow-up time (6 months)	–2.8387862	0.3087892	–9.19	<.0001			
Charlson comorbidity index	–0.3415761	0.5323651	–0.64	0.5215			
Years of Service	0.0748762	0.054766	1.37	0.1724			
Age (versus 45 and older)					3	1.15	0.3303
18–24	–1.8986341	1.3713592	–1.38	0.167			
25–34	–0.8921362	1.2519822	–0.71	0.4765			
35–44	–0.9386395	1.1375208	–0.83	0.4098			
Sex (Female)	–0.3468699	0.5470065	–0.63	0.5264			
Race/Ethnicity (versus other/unknown)					3	0.27	0.8494
White, not Hispanic	–0.4269327	0.8770784	–0.49	0.6267			
Black, not Hispanic	0.066857	0.9483749	0.07	0.9438			
Hispanic	–0.145163	1.0022802	–0.14	0.8849			
Pay Grade (versus warrant)					4	7.98	<.0001
E1–E4	3.0086216	0.8483572	3.55	0.0004			
E5–E9	1.6989332	0.6821267	2.49	0.0132			
O1–O3	3.8573682	1.1501288	3.35	0.0009			
O4–O8	–2.8216416	1.179205	–2.39	0.0172			
Region (versus West)					4	1.14	0.3308
North	–0.9167391	0.5652297	–1.62	0.1056			
Overseas	–0.6751473	0.7539348	–0.9	0.3711			
South	–0.8814792	0.5482313	–1.61	0.1087			

NOTE: The analysis sample consists of service members having both baseline and 6-month symptoms scores. The sample is weighted to reflect the population of service members receiving direct specialty mental health care for depression.

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