

## Appendix Tables 1-16

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**eTable 1. International Classification of Diseases, Ninth Revision Clinical Modification (ICD-9-CM) codes used to identify mental disorders**

<b>Diagnoses</b>	<b>ICD-9-CM codes</b>
Adjustment Disorder	309.29, .3, .4, .82, .83, .89, .9 296.82, .90, .99 300.4, .5
Dysthymic Disorder/Neurasthenia/Depression NOS	309.0, .1 311, .0, .1 313.1
Major Depression	296.2, .20, .21, .22, .23, .24, .25, .26, .3, .30, .31, .32, .33, .34, .35, .36
Bipolar Disorder	296.00, .01, .02, .03, .04, .05, .06, .10, .11, .12, .13, .14, .15, .16, .40, .41, .42, .43, .44, .45, .46, .50, .51, .52, .53, .54, .55, .56, .60, .61, .62, .63, .64, .65, .66, .7, .80, .81, .89 301.13
Anxiety State/Anxiety Disorder	300, .00, .01, .02, .09, .20, .21, .22, .23, .29, .3 309.21, .24, .28 313.0, .21, .22, .23
Post-Traumatic Stress Disorder	309.81
ADHD/Learning Disorders	314.0, .00, .01, .1, .2, .8, .9 315.00, .01, .02, .09, .1, .2, .3, .31, .32, .34, .39, .4, .5, .8, .9
Conduct Disorder/Oppositional Defiant Disorder	301.7 312.4, .8, .81, .82, .89, .9 313.81 V62.83
Eating Disorders	307.1, .50, .51, .59
Other Impulse Control Disorders	312.00, .01, .02, .03, .10, .11, .12, .13, .20, .21, .22, .23, .3, .30, .31, .32, .33, .34, .35, .39
Alcohol Induced Mental Disorders/Alcohol Dependence/Alcohol Abuse	291.0, .1, .2, .3, .4, .5, .8, .81, .82, .89, .9 303.00, .01, .02, .03, .9, .90, .91, .92, .93 305, .0, .00, .01, .02, .03
Drug Induced Mental Disorders	292
Non-Dependent Drug Abuse	305.2, .20, .21, .22, .23, .3, .30, .31, .32, .33, .4, .40, .41, .42, .43, .5, .50, .51, .52, .53, .6, .60, .61, .62, .63, .7, .70, .71, .72, .73, .8, .80, .81, .82, .83, .9, .90, .91, .92, .93
Drug Dependence	304
Tobacco Use Disorder	305.1, .10, .11, .12, .13
Personality Disorders	301.0, .1, .10, .11, .12, .20, .21, .22, .3, .4, .50, .51, .59, .6, .8, .80, .81, .82, .83, .84, .89, .9 295.00, .01, .02, .03, .04, .05, .10, .11, .12, .13, .14, .15, .20, .21, .22, .23, .24, .25, .30, .31, .32, .33, .34, .35, .40, .41, .42, .43, .44, .45, .50, .51, .52, .53, .54, .60, .61, .62, .63, .64, .65, .70, .71, .72, .73, .74, .75, .80, .81, .82, .83, .84, .85, .90, .91, .92, .93, .94, .95 297.0, .1, .2, .3, .8, .9 298.0, .1, .2, .3, .4, .8, .9, .90
Non-Affective Psychosis	300.10, .11, .12, .13, .14, .15, .16, .19, .6, .7, .80, .81, .82, .89 306.0, .1, .2, .3, .4, .50, .51, .52, .53, .59, .6, .7, .8, .9 307.54, .80, .81, .89
Somatiform/Dissociative Disorders	290.0, .10, .11, .12, .13, .20, .21, .3, .40, .41, .42, .43, .8, .9 293.0, .1, .81, .82, .83, .84, .89, .89, .9 294.0, .1, .10, .11, .8, .9 307.20, .21, .22, .23, .3 310.0, .8, .9 317 318.0, .1, 2 319
Organic Mental Disorders	302, .0, .1, .2, .3, .4, .50, .51, .52, .53, .6, .70, .71, .72, .73, .74, .75, .76, .79, .81, .82, .83, .84, .85, .89, .9
Sexual Disorders	307.4, .40, .41, .42, .43, .44, .45, .46, .47, .48, .49
Sleep Disorders	

Postconcussion Syndrome	310.2
	292.85
	299.00, .01, .10, .80, .81, .90, .91
	300.9
Other Mental Disorders/Mental Illness	307.0, .52, .53, .6, .7, .9
	309.22
	310.1
	313.3, .82, .89, .9
	316
Suicidal Ideation	V62.84
Self-Damaging Behavior	V69.8
	797
Symptoms, Signs, and Ill-Defined Conditions, Mental	798, .0, .1, .2, .9
	799, .0, .01, .02, .1, .2, .21, .22, .23, .24, .25, .29, .3, .4, .8, .81, .82, .89, .9
	V11.0, .1, .2, .3, .8, .80, .9, .90
Prior History of Mental Disorders	V66.3
	V67.3
Indicator of Impulsivity and Risky Behavior	V69.2, .3
	V40.0, .00, .1, .2, .20, .3, .30, .9, .90
	V61, .0, .01, .02, .03, .04, .05, .06, .07, .08, .09, .2, .20, .21, .22, .23, .24, .29, .3, .4, .41, .42, .49, .8, .9
Stressors/Adversities	V62., .0, .1, .1 0, .2, .20, .21, .22, .29, .3, .4, .5, .8, 80, .81, .810, .811, .812, .82, .89, .9, .90
	V69.4, .5, .9
Marital Problems	V61.1, .10, .11, .12
Traumatic Stress	308, .0, .1, .2, .3, .4, .9

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Abbreviations: NOS, Not Otherwise Specified; ADHD, Attention Deficit-Hyperactivity Disorder.

**eTable 2. List and brief descriptions of administrative datasets included in the Army STARRS Historical Administrative Data Systems (HADS)**

Database Acronym	Description
AFMETS	ARMED FORCES MEDICAL EXAMINER TRACKING SYSTEM (AFMETS): Variables include manner of death and cause of death, including self-inflicted.
MDR	MEDICAL DATA REPOSITORY (MDR): This database contains information about medical, dental, pharmaceutical, and ancillary claims data for both in network and purchased care as well as both inpatient and outpatient treatment. Data are collected on both Army personnel and their beneficiaries.
DCIPS	DEFENSE CASUALTY INFORMATION PROCESSING SYSTEM (DCIPS): Casualty data system for Army, Navy, Air Force, and Marines. It contains information on all casualties including deceased active duty members (and cause of death).
DMDC/Casualty	DEFENSE MANPOWER DATA CENTER (DMDC) / CASUALTY: Provides information on war deaths and active duty deaths, wounds, injuries, and illnesses.
DMDC/CTS	DEFENSE MANPOWER DATA CENTER (DMDC) / CONTINGENCY TRACKING SYSTEM (CTS): Collection of activation, mobilization, and deployment data. Provides information to DoD decision makers and includes a CTS Deployment File used for tracking the location of deployed personnel.
DMDC/Master Personnel & DMDC/Transaction files	DEFENSE MANPOWER DATA CENTER (DMDC) / MASTER PERSONNEL & TRANSACTION FILES: The Active Duty Master File provides an inventory of all individuals on active duty (excluding reservists on active duty for training) at a point in time. It is a standardized and centralized database of present and past members of the active duty force. Personal data elements include social security number, education level, home of record, date of birth, marital status, number of dependents, race, ethnic group, and name. Military data elements include Service, pay grade, Armed Forces Qualification Test percentile (enlisted only), source of commission (officers only), military primary duty and secondary occupation, Unit Identification Code, months of service, duty location, Estimated Termination of Service date, basic active service date, date of current rank, pay entry base date, foreign language ability, and major command code.
DODSER	DEPARTMENT OF DEFENSE SUICIDE EVENT REPORT (DODSER): Provides risk and protective factor information for suicide events. This file will contain unsuccessful attempts and completed suicide cases.
TMDS	THEATER MEDICAL DATA STORE (TMDS): Used to track, analyze, view and manage Soldier medical treatment information recorded on the battlefield. Features of TMDS: accessibility and visibility of service members' deployed medical records, outpatient and inpatient treatment records created in theater facilities, treatment records from other applications, reports on movement of patients, patient status and injury/illnesses.
DMDC/DEERS	DEFENSE MANPOWER DATA CENTER (DMDC) / DEFENSE ENROLLMENT ELIGIBILITY REPORTING SYSTEM (DEERS): A DoD PDR containing personnel data and data related to DoD affiliation, benefits, employment, and pay.
MEDPROS/Readiness	MEDICAL PROTECTION SYSTEM (MEDPROS) / READINESS: The comprehensive Medical Readiness data includes all medical and dental readiness requirements IAW AR 600-8-101. They include immunizations, permanent physical profiles/duty limitations, eyeglasses/inserts, blood type, medical warning tags, personal deployment meds, pregnancy screening, DNA, HIV and dental status among other data elements.
DMDC/Perstempo	DEFENSE MANPOWER DATA CENTER (DMDC) / PERSONNEL TEMPO: Provides information on soldier movement. Perstempo is a Congressionally mandated definition of time in which servicemembers engaged in official duties spend off-duty time away from housing associated with their garrison duty (time away from home station). The definition also applies to contingency operations such as OIF and OEF.
ACR	ARMY CENTRAL REGISTRY (ACR): This is a victim-based registry documenting spouse and child abuse events involving Army service members.
AWD	ARMY WAIVER DATA (AWD): Information on waivers granted to new recruits to join the Army. The waivers are provided for four primary categories: 1) dependence (married with over two children), 2) conduct, 3) drug and alcohol, and 4) medical.
DAMIS	DRUG AND ALCOHOL MANAGEMENT INFORMATION SYSTEM (DAMIS): Includes data from the Army drug and alcohol prevention training and substance abuse program.
DMDC/MEPCOM	DEFENSE MANPOWER DATA CENTER (DMDC) / MILITARY ENTRANCE PROCESSING COMMAND (MEPCOM): Contains transaction records on all individuals processed and examined at Military Entrance Processing Stations (MEPS) since July 1970. Examination data prior to FY 1976 is incomplete. Data elements in the USMEPCOM Files are divided into three groups: Personal, Medical, and Administrative. The primary user is the Office of the Undersecretary of Defense (Personnel and Readiness) where ASVAB data provides the basis for aptitude-related studies.
DMDC/Payroll	DEFENSE MANPOWER DATA CENTER (DMDC) / Payroll: Contains elements with information such as: Demographics, Special and Incentive Pays, Basic Pay and Allowances. This file is also used to answer pay-related questions for the General Accounting Office, Military Services research centers, and other government agencies.
DTMS	DIGITAL TRAINING MANAGEMENT SYSTEM (DTMS): Contains information on training requirements and standards, training planned and scheduled by Army units, and training accomplished by individuals and units in the

Army.

MEDPROS/DHA	MEDICAL PROTECTION SYSTEM (MEDPROS) / DEPLOYMENT HEALTH ASSESSMENT (DHA): The DHA cycle begins when a Soldier completes the DD Form 2795 (Pre-Deployment Health Assessment) prior to deployment. Soldiers complete the DD Form 2796 Post Deployment Health Assessment (PDHA) prior to redeployment/demobilization. This triggers their PDHRA eligibility. At 90 days after completion of the DD Form 2796, Soldiers become eligible to participate in a PDHRA screening. The targeted window for PDHRA is 90-180 days after deployment. Once the Soldier is screened, follow-up appointments and treatment will be scheduled as needed.
MEDPROS/PHA	MEDICAL PROTECTION SYSTEM (MEDPROS) / PERIODIC HEALTH ASSESSMENT (PHA): The PHA is an annual physical and consists of two parts. Part one is a self-assessment completed by the Soldier; Part two is the provider assessment. PHA results consist of the health assessment, height, weight, PULHES, and potential for deployability within six months. These items will be entered into MEDPROS at the point of service. The PHA is intended to improve Individual Medical Readiness and to evaluate deployability.
RRPS	RISK AND REDUCTION PROGRAM SYSTEM (RRPS): The RRPS collects data at the unit level that may show that members of the unit are at a higher risk. The Risk Reduction Program collects the number of incidents of high risk behavior by battalion level or separate company.
SADMS	SEXUAL ASSAULT DATA MANAGEMENT SYSTEM (SADMS): Centralized repository of relevant data regarding the entire lifecycle of sexual assault cases, involving victims and/or alleged offenders.
TRAC2ES	TRANSCOM REGULATING AND COMMAND AND CONTROL EVACUATION SYSTEM (TRAC2ES): A tracking system for all medical transfers across the world for all DOD services.
ASMIS-R	ARMY SAFETY MANAGEMENT INFORMATION SYSTEM-REVISED (ASMIS-R): Contains incident information data. Components consist of the reporting, analysis, and tracking of data, as well as, efforts to provide preventative measures via risk assessments. ReportIT provides for the collection, verification, and timely dissemination of incident investigation and safety inspection data. AnalyzeIT serves as the business intelligence suite designed to identify trends and problem areas via data mining techniques and ad hoc analysis. TrackIT is designed for monitoring recommended controls and logging hazards. PreventIT encompasses risk assessment and guidance tools for units, battalions, commanders, civilians, and contractors.
CIMS/AC12	CRIMINAL INVESTIGATION DIVISION INFORMATION MANAGEMENT SYSTEM (CIMS) / AUTOMATED CRIMINAL INVESTIGATION/CRIMINAL INTELLIGENCE (ACI2): Event level crime record database. Separate system from ASCRC; Entity IDs are associated with offenses.
CIMS/ASCRC	CRIMINAL INVESTIGATION DIVISION INFORMATION MANAGEMENT SYSTEM (CIMS) / AUTOMATED SYSTEM CRIME RECORD CENTER (ASCRC): Receives, maintains, accounts for, disseminates information from, and disposes of Army crime records; retrieves and correlates data and statistics from the records and provides to authorized recipients; coordinates automation of crime records data and information; and serves as functional proponent for the electronic imaging of crime record.
COPS/VRS	CENTRALIZED OPERATIONS POLICE SUITE (COPS) / VEHICLE REGISTRATION SYSTEM (VRS): Provides information on privately owned vehicles of civilians and military personnel utilized at military installations.
PDCAPS	PHYSICAL DISABILITY CASE PROCESSING SYSTEM (PDCAPS): Contains information on fitness and applicable disability benefits of Soldiers with duty related impairments, including clinical information of all medical conditions the Soldier manifests to determine whether each condition meets medical retention standards.
ACMIS	ARMY COURT MARTIAL INFORMATION SYSTEM (ACMIS): Contains data on Soldiers (including Officers) arraigned on court-martial charges at either a Special or General Court-Martial. It also contains some basic information concerning them such as their rank, their GT score (if available), their SSNs, and their birthdays. The database includes such information as where the Soldier was tried, which General Court-Martial Jurisdiction convened the case, the offenses charged, how the accused plead, the findings in the case as well as the sentence (if any). It also contains information concerning cases required to proceed through the appellate court process and outcome in the appellate court system. It includes the location of the offenses and trial, and tracks the dates of certain events in the court-martial process. It does not contain any information concerning whether or not an accused has committed suicide.
ANAM	AUTOMATED NEUROPSYCHOLOGICAL ASSESSMENT METRICS (ANAM): This is an Army-developed and Army-owned, objective, computer-based test of human performance and neuropsychological functioning used to assess the cognitive performance of all active duty, reserve, and National Guard Soldiers.
ATRRS	ARMY TRAINING AND REQUIREMENTS RESOURCE SYSTEM (ATRRS): This is a system of record for management of personnel input to training and is the repository for training requirements, programs, personnel data and training costs.
COPS/ MPRS	CENTRALIZED OPERATIONS POLICE SUITE (COPS) / MILITARY POLICE REPORTING SYSTEM (MPRS): Centralized database that contains subsystems supporting the Military Police Corps Army wide. Contains information included in law enforcement reports.
COPS/Violations	CENTRALIZED OPERATIONS POLICE SUITE (COPS) / VIOLATIONS: Violation information contained in MPRS system (e.g., incident, time of incident).
COPS/ACIS	CENTRALIZED OPERATIONS POLICE SUITE (COPS) / ARMY CORRECTIONAL INFORMATION SYSTEM (ACIS): This System has information for the confinement facility on new prisoners, currently confined prisoners, departed prisoners, and a monthly summary report of confinement facility activity data.
SFT	

SOLDIER FITNESS TRACKER (SFT): Formerly known as the Comprehensive Soldier Fitness Global Assessment Tool (CSF-GAT), this source provides baseline information on strength in four areas: emotional, social, spiritual and family. Also provides an opportunity to track self-development and growth in these areas over time. The Chief of Staff of the Army is requiring all Soldiers to take the GAT by May 2010. The object of this program is to enhance performance and build resilience.

EORS

EQUAL OPPORTUNITY REPORTING SYSTEM (EORS): Database is used to collect, record, and maintain racial, ethnic group, and gender data and statistics needed to support the Army EO Program, to include AAP reporting requirements. No health related data. Contains information such as: rank, race, complaint type, category, gender, timeline case start to end, resolution.

ITAPDB

INTEGRATED TOTAL ARMY PERSONNEL DATABASE (ITAPDB): Contains consolidated human resource database providing the Army and DOD with a single repository for personnel information for all components of the Army.

WWAS

WOUNDED WARRIOR ACCOUNTABILITY SYSTEM (WWAS): Integrated applications that support the accurate, timely, and effective tracking and management of Warfighters in the Wounded Warrior Lifecycle.

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**eTable 3. Medication classification<sup>1</sup>**

**Psychotropic medications**

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Antianxiety Agent  
  Antihistamine Type  
  Benzodiazepines  
  Non-Benzodiazepine  
  GABA Analog  
Antidepressants  
  MAOI SARI NaSSA NDRI or Other  
  SNRI  
  SSRI  
  TCAs and related  
Sedative-Hypnotic  
  Benzodiazepines  
  Antidepressant Type  
  Others  
CNS Stimulant - Armodafinil/Modafinil  
Attention Deficit-Hyperactivity (ADHD) Therapy  
Chemical Dependency  
  Narcotic or Alcohol Treatment Agents  
  Smoking Deterrents and Combinations  
Migraine Therapy  
  Serotonin Agonists  
  All other  
Antianxiety and Anticonvulsant Agent – Benzodiazepines  
Anticonvulsant  
Bipolar Therapy Agents  
Antipsychotics (Neuroleptics)  
Eating Disorder Therapy  
Cognitive Disorder Therapy  
Post-Traumatic Stress Disorder (PTSD) Therapy – Prazosin  
Sedative-Hypnotic and Anticonvulsant Agent – Barbiturates

**Non-narcotic and Narcotic pain relievers**

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Analgesic – Non-Narcotic  
  Analgesic or Antipyretic Non-Narcotic and Combinations  
  NSAID Analgesics  
  Salicylate Analgesic and Salicylate Combinations  
Analgesic – Narcotic  
  Long-acting  
  Short-acting Schedule II

**Other medications**

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Dermatological – Isotretinoin

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Abbreviations: GABA, Gamma-Aminobutyric Acid; MAOI, Monoamine Oxidase Inhibitor; SARI, Serotonin Antagonist and Reuptake Inhibitor; NaSSA, Noradrenergic and Specific Serotonergic Antidepressant; NDRI, Norepinephrine-Dopamine Reuptake Inhibitor; SNRI, Serotonin–Norepinephrine Reuptake Inhibitor; SSRI, Selective Serotonin Reuptake Inhibitor; TCAs, Tricyclic antidepressants; CNS, Central Nervous System; NSAID, Nonsteroidal Anti-Inflammatory Drug.

<sup>1</sup>Source: First Databank (FDB) Enhanced Therapeutic Classification System™. Reprinted with permission by First Databank, Inc. All rights reserved. ©2013. [www.fdbhealth.com](http://www.fdbhealth.com).

**eTable 4. Overview of the HADS predictors of post-hospital suicide**

<b>Core index hospitalization characteristics</b>	<p>Information was coded on the year and season of each index hospitalization and whether each index hospitalization was in a military or civilian facility, whether the facility included a psychiatric inpatient unit, length of hospitalization, and whether the patient was discharged to a Warrior Transition Unit (i.e., a special unit for patients undergoing prolonged rehabilitation or awaiting determinations of disability ratings for medical discharge from the Army). As many soldiers were hospitalized for physical-mental disorder combinations, information was included on comorbid physical disorders, distinguishing cases where physical disorders were primary versus secondary. Based on inspection of conditional suicide rates by time since hospital discharge, nested dichotomous predictors were included for 0, 1-2, 3, 4-6, and 7-9 months since discharge (with 10-12 months the reference category) from the index hospitalization. Time-at-risk of suicide in the month of discharge varied depending on number of days remaining in the month after discharge. In addition, time-at-risk in the month when a respondent was censored either for a new hospitalization, another type of death, or termination of service, varied depending on the date of the censoring. As a result, a predictor variable was included for number of days-at-risk in each month. The value of this variable was set to the number of days in the full month whenever the soldier was either at risk the entire month or committed suicide in the month, but was set to lower values in months when the soldier either was released from the hospital (in which case the value was set to the remaining number of days in the month) or censored (in which case the value was set to the number of days prior to being censored). (For a full list of core index hospitalization predictors see eTable 5).</p>
<b>Socio-demographics and Army career variables</b>	<p>Socio-demographics included: age, sex, race-ethnicity, and marital status. Based on prior administrative record studies<sup>14-17</sup> we also included the following Army career variables: age-at-enlistment, Armed Forces Qualification Test (AFQT) scores at enlistment, time-in-service, military occupation, Command (the major organizational subdivision of the Army), and current deployment either to a combat zone or in direct support outside the combat zone of Operation Enduring Freedom (Afghanistan) or Operation Iraqi Freedom at time of hospitalization. We also assessed deployment history, including number of deployments, time in current deployment, length of most recent deployment, time since ending most recent deployment, and <i>dwelling time</i> (i.e., amount of time between end of immediately prior deployment and beginning of most recent deployment). The coding scheme for these variables is detailed elsewhere.<sup>47</sup> As these socio-demographic and career data were not collected for research, there was a considerable amount of missing-inconsistent data. However, these datasets are updated monthly and missing values in one month almost always appear in earlier and/or later months, allowing imputations using nearest neighbor methods. The few remaining missing values were resolved using single imputations selected randomly from a series of multiple imputations<sup>24</sup> based on analysis of the entire dataset. Inconsistencies were reconciled using rational imputations (e.g., a soldier classified female in one month but male in all others was recoded as male in all months). More details on predictor variable coding are available on request. (For a full list of career history and socio-demographic predictors see eTables 6-7).</p>
<b>Unit level variables</b>	<p>A series of unit level variables were created as potential risk factors. These included measures of how long the soldier had been in his/her current duty unit, whether or not the soldier's current duty unit was his/her assigned unit, the number of months in the past 12 the soldier was on duty in a unit that was not his/her assigned unit, how many different duty units the soldier had been assigned to in the past 12 months, the median length of time in the army (in months) of all non-commissioned officers (E5-E9), warrant officers and commissioned officers in the soldier's current duty unit over the past 3 and 12 months, the median length of time in the current unit of all lower enlisted soldiers (E1-E4), non-commissioned officers, warrant officers and commissioned officers in the soldier's current duty unit over the past 3 and 12 months, and the median length ever deployed of all lower enlisted soldiers (E1-E4), non-commissioned officers, warrant officers and commissioned officers in the soldier's current duty unit over the past 3 and 12 months. (For a full list of unit-level predictors see eTable 8).</p>
<b>Access to weapons</b>	<p>Administrative data were included on the number of guns and, separately, bows registered by soldiers for legal possession. (For a full list of predictors see eTable 9).</p>
<b>Criminal perpetration and victimization</b>	<p>Dichotomous variables were created to distinguish soldiers with prior criminal victimization or perpetration in the past 12 months and the past 24 months (HADS data on criminal offenses only goes back to 2002 which is 24 months before the first month of observation. A total of 6 dichotomous measures of</p>



victimization were created for each time period including: major physical violent crime, minor physical violent crime, verbal violence, sexual violence, non-violent crime and any crime. Parallel constructs were developed for the number of times each respondent was a victim of each crime in the past 12 and 24 months. The same 12 constructs were created for perpetration except that non-violent crime was further divided into the following constructs: reckless endangerment, possession/use of illegal substance, weapons offence, drunkenness/disorderly conduct/vagrancy and other non-violent crime. For a list of NCRP offense codes included in each predictor see eTable 10. See eTable 11 for a full list of criminal perpetration and victimization predictors.

Dichotomous variables were created to distinguish soldiers with prior medical encounters in the 12 months before hospitalization (and separately in the prior 36 months). A four-year recall period (i.e., year before hospitalization plus three prior years) was used because the HADS dataset, while limited to soldiers on active duty 2004-2009, included information for these soldiers back to January 2000, thus allowing time-lagged predictors at least four years before month of observation. This information was divided into one and three prior years before hospitalization based on preliminary analysis showing that important predictive associations were largely confined to one year before hospitalization. As many soldiers were hospitalized for physical-mental disorder combinations, information was included on comorbid physical disorders, distinguishing cases where physical disorders were primary versus secondary. Physical disorders were classified into a single physical category including the 17 major ICD-9-CM categories (e.g., diseases of the circulatory system [ICD-9-CM 520-579]). We also distinguished four physical disorders considered important for suicide: traumatic brain injury (TBI) (any of the definitions proposed by CDC, 53 DoD, 54 or VHA, 55; see eTable 13); other severe injuries (amputations, burns, sensory losses, paralysis); pain diagnoses based on a scheme developed by Sullivan and colleagues;<sup>56</sup> and sleep diagnoses (distinguishing dyssomnias and parasomnias). Based on evidence of complex associations of comorbidity with suicides among Veterans Health Administration (VHA) patients,<sup>48-51</sup> we distinguished 23 categories of mental disorder diagnoses largely focused on aggregated ICD-9-CM codes (e.g., ADHD/learning disorders [ICD-9-CM 314.0-315.9]), 8 additional categories of behavioral stressors (e.g., marital problems, other stressors/adversities, suicidal ideation and self-damaging behavior), and a summary measure of any of these 31. (see eTable 1). These predictors include yes-no prior admission diagnoses and parallel variables coded 0-4 for number of outpatient visits (0=None, 1=1-2, 2=3-5, 3=6-10, 4=11+). NDC psychotropic medication codes were collapsed into 15 categories (e.g., antianxiety, antidepressant, antipsychotic) and 25 sub-categories (e.g., SSRI, SNRI, TCA) using the First Databank (FDB) Enhanced Therapeutic Classification System™ ([www.fdbhealth.com](http://www.fdbhealth.com)) (eTable 3) and both dichotomized (any prescription) and coded 0-4 for number of filled prescriptions (0=None, 1=1-30, 2=31-60, 3=61-90, 4=91+). Parallel measures were created for narcotic and non-narcotic pain relievers (three sub-categories each) and isotretinoin (used for dermatological conditions) as possible risk factors for suicide.<sup>52</sup> Predictors were also included on whether the index hospitalization occurred because of a suicide attempt and the soldier made a previous attempt earlier in the one or three prior years. We also created a count of number of outpatient visits in the year before hospitalization and separately in the three prior years with suicidal ideation as an ICD-9-CM V code. (for a full list of prior medical history predictors see eTables 12-14)

#### Medical history and suicidal behaviors

We distinguished 23 categories of mental disorder diagnoses for the index hospitalization largely focused on aggregated ICD-9-CM codes (e.g., ADHD/learning disorders [ICD-9-CM 314.0-315.9]), 8 additional categories of behavioral stressors (e.g., marital problems, other stressors/adversities, suicidal ideation and self-damaging behavior), and a summary measure of any of these 31. (See eTable 1 for a list of ICD-9-CM codes included in the 31 mental disorders). We also distinguished four physical disorders considered important for suicide: traumatic brain injury (TBI) (any of the definitions proposed by CDC, 53 DoD, 54 or VHA, 55; see eTable 13); other severe injuries (amputations, burns, sensory losses, paralysis); pain diagnoses based on a scheme developed by Sullivan and colleagues;<sup>56</sup> and sleep diagnoses (distinguishing dyssomnias and parasomnias). See eTable 15 for a full list of index hospitalization predictors.

#### Index hospitalization Diagnoses

Importantly, we did not include predictors for post-discharge continuity of care or any other predictors that could only have been measured after hospital discharge (e.g., subsequent demotion, divorce, injury, arrest, or treatment). These exclusions were made because the goal of analysis was to determine associations involving predictors known *at the time of hospital discharge*.

#### Predictors that could be assessed only after hospital discharge

**eTable 5. Predict Suicide with Core Index Hospitalization Variables (n=334,936)<sup>1</sup>**

	%	SE	OR	(95% CI)
Year of Index Hospitalization				
2005	11.69	0.06	0.84	(0.19-3.78)
2006	13.47	0.06	1.25	(0.32-4.87)
2007	17.99	0.07	1.18	(0.32-4.38)
2008	22.60	0.07	1.76	(0.51-6.08)
2009	27.71	0.08	2.33	(0.70-7.78)
2004	6.54	0.04	--	--
$\chi^2_5$			8.79	
Season of Index Hospitalization				
Spring	23.65	0.07	0.65	(0.27-1.60)
Summer	25.50	0.08	1.50	(0.74-3.08)
Fall	27.27	0.08	1.99*	(1.01-3.92)
Winter	23.57	0.07	--	--
$\chi^2_3$			9.84*	
Months after discharge of index hospitalization				
0-3	50.74	0.09	1.38	(0.61-3.11)
4-6	21.76	0.07	1.26	(0.52-3.04)
7-9	15.62	0.06	0.64	(0.22-1.91)
10-12	11.89	0.06	--	--
$\chi^2_3$			2.45	
Index hospitalization diagnosis				
Mental primary	70.46	0.08	5.91*	(1.38-25.34)
Physical primary and 2+ mental	11.49	0.06	5.71*	(1.21-26.94)
Physical primary and exactly 1 mental	18.05	0.07	--	--
$\chi^2_2$			7.82*	
Warrior Transition Unit as of discharge from index hospitalization (Yes/no)	1.34	0.02	1.16	(0.16-8.34)
5 or more days in hospital during index hospitalization (Yes/no)	55.46	0.09	1.28	(0.75-2.19)
Index Hospitalization facility				
Inpatient psychiatric unit in a military treatment facility	46.30	0.09	1.06	(0.56-2.00)
Civilian psychiatric hospital or in a department of mental health	30.54	0.08	1.34	(0.67-2.71)
Any other facility	23.17	0.07	--	--
$\chi^2_2$			0.26	
Log of days between discharge from hospital and end of the month for month of discharge, and days in month for months after discharge	--	--	2.39	(0.88-6.51)

<sup>1</sup>Based on a multivariate discrete time (person-month) survival model.

**eTable 6. Predict Suicide with Core and Demographic Variables (n=334,936)<sup>1</sup>**

	%	SE	OR	(95% CI)
Age at time of discharge				
17-19	9.03	0.05	0.79	(0.34-1.84)
20-22	26.31	0.08	0.36*	(0.17-0.75)
23+	64.66	0.08	--	--
$X^2_2$			7.45*	
Marital status at time of discharge				
Currently Married	52.21	0.09	2.20*	(1.28-3.80)
Previously Married	4.23	0.04	1.20	(0.28-5.19)
Never Married	43.56	0.09	--	--
$X^2_2$			8.39*	
Gender				
Male	80.19	0.07	7.13*	(1.74-29.19)
Female	19.81	0.07	--	--
$X^2_1$			7.47*	
Race				
Asian	3.06	0.03	1.81	(0.65-5.01)
Non-Hispanic Black	17.53	0.07	0.83	(0.42-1.64)
Hispanic	10.28	0.05	0.40	(0.13-1.29)
Other	2.21	0.02	0.66	(0.09-4.78)
Non-Hispanic White	66.92	0.08	--	--
$X^2_4$			4.31	
Religious affiliation				
Catholic	16.69	0.06	0.61	(0.28-1.37)
Other Christian sub-groups	52.27	0.09	0.78	(0.46-1.33)
Other Religions	2.40	0.03	1.52	(0.46-5.04)
None/Unknown	28.64	0.08	--	--
$X^2_3$			2.69	
Number of dependents at time of discharge				
1	20.96	0.07	2.33*	(1.23-4.42)
2+	38.80	0.08	1.92*	(1.06-3.50)
0	40.24	0.08	--	--
$X^2_2$			7.23*	
Education level at time of discharge				
Did not complete high school	20.98	0.07	0.50	(0.21-1.16)
High school graduate	67.23	0.08	0.68	(0.34-1.36)
Some college completed/college graduate	11.79	0.06	--	--
$X^2_2$			2.63	

<sup>1</sup>Based on a multivariate discrete time (person-month) survival models each examining the association of one demographic variable controlling for the core variables in eTable 5.

**eTable 7. Predict Suicide with Core and Army Career Variables (n=334,936)<sup>1</sup>**

	<b>%</b>	<b>SE</b>	<b>OR</b>	<b>(95% CI)</b>
<b>Age of enlistment</b>				
20-21	20.63	0.07	1.21	(0.62-2.37)
22-26	23.05	0.07	1.57	(0.85-2.89)
27+	10.36	0.05	2.48*	(1.26-4.87)
17-19	45.96	0.09	--	--
$X^2_3$			7.42	
<b>MOS Infantry at time of discharge</b>				
Yes	15.77	0.06	1.57	(0.89-2.75)
No	84.23	0.06	--	--
$X^2_1$			2.44	
<b>Deployment</b>				
Currently in 1st Deployment	8.00	0.05	0.62	(0.19-2.08)
Currently in 2nd (or higher)	4.93	0.04	0.00	(0.00-0.00)
Previously Deployed once	29.49	0.08	1.22	(0.70-2.13)
Previously Deployed twice or more	13.02	0.06	1.48	(0.77-2.88)
Never Deployed	44.56	0.09	--	--
$X^2_4$			2.54	
<b>Command at time of discharge</b>				
FORSCOM	50.74	0.09	0.46*	(0.22-0.97)
TRADOC	11.42	0.06	0.33*	(0.11-0.98)
N/S America, Europe/Central/Africa, Pacific	16.06	0.06	0.21*	(0.06-0.67)
Special Ops	1.73	0.02	1.00	(0.22-4.64)
MEDCOM	12.87	0.06	0.84	(0.36-1.99)
AMC/Other/Unknown	7.19	0.04	--	--
$X^2_5$			12.38*	
<b>Rank at time of discharge</b>				
E1-E4	66.65	0.08	0.27*	(0.12-0.58)
E5-E6	22.34	0.07	0.35*	(0.15-0.83)
E7-E9	5.46	0.04	0.91	(0.34-2.43)
Officer	5.55	0.04	--	--
$X^2_3$			17.74*	
<b>Months in service</b>				
0-12	15.00	0.06	0.13*	(0.03-0.54)
13-24	15.93	0.06	0.28*	(0.08-0.91)
25-48	25.12	0.08	0.29*	(0.09-0.87)
49-96	20.64	0.07	0.33	(0.11-1.02)
97-240	20.53	0.07	0.59	(0.20-1.71)
241+	2.78	0.03	--	--
$X^2_5$			14.10*	
<b>AFQT Score</b>				
0 - 50 percentile	35.03	0.08	0.26*	(0.13-0.53)
$X^2_1$			13.93*	
<b>Last demotion occurred within 12 months as of discharge</b>				
Yes	8.86	0.05	0.81	(0.35-1.89)
No	91.14	0.05	--	--
$X^2_1$			0.23	

<sup>1</sup>Based on a multivariate discrete time (person-month) survival models each examining the association of one Army career variable controlling for the core variables in eTable 5.

**eTable 8. Predict Suicide with Core and Unit Variables (n=334,936)<sup>1</sup>**

	%	SE	OR	(95% CI)	$\chi^2$
Number of months in current duty unit	--	--	1.01*	(1.00-1.03)	3.93
Duty unit different than assigned unit (Yes/no)	--	--	0.00	(0.00-0.00)	0.00
Number of months in the past 12 where duty unit differed from assigned unit <sup>2</sup>	--	--	0.00	(0.00-0.00)	0.00
In the past 12 months, duty unit differed from assigned unit (Yes/no)	1.68	0.02	0.00	(0.00-0.00)	0.00
Number of different duty units over past 12 months	--	--	1.02	(0.78-1.32)	0.02
Percentage of combat deaths for duty units over past 12 months	--	--	0.13	(0.01-1.86)	2.26
Percentage of suicidal deaths for duty units over past 12 months	--	--	3.54	(0.56-21.45)	1.90
Past 3 months current unit					
Median amount of time in the Army of all NCOs (E5-9) in unit(s)	--	--	1.00	(0.99-1.01)	0.04
Median amount of time in the Army of all officers (WO and CO) in unit(s)	--	--	1.00	(1.00-1.01)	1.71
Median amount of time ever deployed of all NCOs (E5-9) in unit(s)	--	--	0.97	(0.93-1.01)	2.11
Median number of months all lower enlisted soldiers (E1-E4) have been on duty in this unit	--	--	1.01	(0.98-1.05)	0.33
Median number of months all higher enlisted soldiers (E5-E9) have been on duty in this unit	--	--	1.01	(0.98-1.03)	0.32
Median number of months all officers (CO and WO) have been on duty in this unit	--	--	1.02	(0.99-1.06)	1.62
Past 12 months current unit					
Median amount of time in the Army of all NCOs (E5-9) in unit(s)	--	--	1.00	(0.99-1.01)	0.00
Median amount of time in the Army of all officers (WO and CO) in unit(s)	--	--	1.00	(1.00-1.01)	2.70
Median amount of time ever deployed of all NCOs (E5-9) in my unit(s)	--	--	0.98	(0.94-1.02)	1.28
Median number of months all lower enlisted soldiers (E1-E4) have been on duty in this unit	--	--	1.01	(0.97-1.05)	0.35
Median number of months all higher enlisted soldiers (E5-E9) have been on duty in this unit	--	--	1.01	(0.99-1.03)	0.75
Median number of months all officers (CO and WO) have been on duty in this unit	--	--	1.03	(0.99-1.08)	2.38

<sup>1</sup>Based on a multivariate discrete time (person-month) survival models each examining the association of one unit variable controlling for the core variables in eTable 5.

<sup>2</sup>Algorithm did not converge.

**eTable9. Predict Suicide with Core and Weapon Variables (n=334,936)<sup>1</sup>**

	%	SE	OR	(95% CI)	$\chi^2$
Weapons registered in the last four years, not counting current month					
All guns, including pistols, shotguns and rifles					
Count	--	--	1.06*	(1.01-1.12)	5.09
Yes/no	3.33	0.03	2.53*	(1.09-5.88)	4.66
All pistols					
Count	--	--	1.37*	(1.15-1.64)	12.29
Yes/no	2.18	0.02	3.87*	(1.66-9.00)	9.89
All rifles					
Count	--	--	1.09	(0.99-1.20)	3.05
Yes/no	1.58	0.02	1.78	(0.44-7.30)	0.65
All shotguns					
Count	--	--	1.20	(0.53-2.75)	0.19
Yes/no	1.20	0.02	2.37	(0.58-9.70)	1.44
All knives					
Count <sup>2</sup>	--	--	0.00	(0.00-0.00)	0.00
Yes/no	0.03	0.003	0.00	(0.00-0.00)	0.00
All swords					
Count	--	--	0.00	(0.00-0.00)	0.00
Yes/no	0.02	0.002	0.00	(0.00-0.00)	0.00
All bows					
Count	--	--	3.36	(0.94-12.02)	3.48
Yes/no	0.12	0.01	13.55*	(1.86-98.47)	6.63
All other weapons not in other weapon classes					
Count <sup>2</sup>	--	--	0.00	(0.00-0.00)	0.00
Yes/no	0.14	0.01	0.00	(0.00-0.00)	0.00
All weapons					
Count	--	--	1.06*	(1.01-1.12)	5.30
Yes/no	3.40	0.03	2.48*	(1.07-5.75)	4.44

<sup>1</sup>Based on a multivariate discrete time (person-month) survival models each examining the association of one weapon variable controlling for the core variables in eTable 5.

<sup>2</sup>Algorithm did not converge.

**eTable 10. The National Corrections Reporting Program (NCRP) offense codes used to identify categories of criminal perpetration and victimization.**

**I. Major Physical Violence**

**A. Murder/Homicide/Manslaughter**

- 1. Murder
- 2. Unspecified Homicide
- 3. Voluntary/Nonnegligent Manslaughter
- 5. Manslaughter – Non-Vehicular

**B. Kidnapping**

- 6. Kidnapping

**C. Aggravated Arson**

- 22.1 Aggravated Arson

**D. Aggravated Assault**

- 14. Aggravated Assault
- 16.1 Aggravated Assault On A Public Officer
- 87. Aggravated Assault Of Military Official
- 20.1 Violent Offenses, Other – Aggravated Assault

**E. Family-Related Aggravated Assault**

- 64.2 Family Related Aggravated Assault
- 19. Child Abuse

**F. Robbery**

- 11. Armed Robbery
- 12. Unarmed Robbery

**ii. Minor Physical Violence**

**A. Simple Assault**

- 15. Simple Assault
- 16.2 Simple Assault On A Public Officer
- 86. Simple Assault Of Military Official
- 20.2 Violent Offenses, Other - Simple Assault

**B. Family-Related Simple Assault**

- 89.1 Family-Related Simple Assault

**C. Other Physical Violence**

- 20.5 Violent Offenses, Other – Violent Offenses

**iii. Verbal Violence**

**A. Blackmail/Extortion/Intimidation**

- 17. Blackmail/Extortion/Intimidation

**B. Rioting**

- 56. Rioting

**C. Harassment (Non-Sexual)**

- 69.2 Invasion Of Privacy – Other Harassment
- 73.1 Other Public Order Offenses- Harassment

**D. Family-Related Emotional Abuse**

- 89.2 Family-Related Emotional Abuse

**E. Sexual Verbal Violence (Sexual Harassment)**

- 66.1 Morals/Decency - Sexual Harassment
- 69.1 Invasion Of Privacy – Sexual Harassment

**iv. Sexual Violence**

**A. Rape/Sodomy/Sexual Assault**

- 7. Rape – Force
- 8. Rape – Statutory – No Force
- 13. Forcible Sodomy
- 9. Sexual Assault - Other
- 10. Lewd Act With Children

**B. Family-Related Sexual Violence**

- 89.3 Family-Related Sexual Offenses

## **V. Non-Violent Offenses**

### **A. Reckless Endangerment**

- 4. Manslaughter - Vehicular
- 18. Hit And Run Driving
- 32. Hit/Run Driving - Property Damage
- 61. Driving While Intoxicated
- 62. Driving Under The Influence (Dui)
- 63. Driving Under Influence (Dui) - Drugs
- 20.3 Violent Offenses, Other – Reckless Endangerment

### **B. Burglary**

- 21. Burglary

### **C. Simple Arson**

- 22.2 Simple Arson

### **D. Forgery/Fraud**

- 24. Forgery/Fraud

### **E. Theft**

- 23. Auto Theft
- 25. Grand Larceny – Theft Over \$200
- 26. Petty Larceny - Theft Under \$200
- 27. Larceny/Theft – Value Unknown
- 28. Embezzlement
- 29. Stolen Property – Receiving
- 30. Stolen Property – Trafficking
- 33. Unauthorized Use Of Vehicle
- 73.2 Public Order Offenses, Other – Theft

### **F. Property Offenses**

- 31. Destruction Of Property
- 34. Trespassing
- 35. Property Offenses - Other

### **G. Commercialized Vice, Illegal Substances**

- 36. Trafficking – Heroin
- 37. Trafficking - Cocaine Or Crack
- 38. Trafficking – Other Controlled Substances
- 39. Trafficking Marijuana/Hashish
- 40. Trafficking - Drug Unspecified

### **H. Commercialized Vice, Other**

- 70. Commercialized Vice
- 72.1 Liquor Law Violations – Commercialized Vice

### **I. Possession/Use/Other Violation Of Illegal Substance**

- 41. Possession/Use – Heroin
- 42. Possession/Use – Cocaine Or Crack
- 43. Possession/Use - Other Controlled Substances
- 44. Possession/Use - Marijuana/Hashish
- 45. Possession/Use - Drug Unspecified
- 46. Heroin Violation Offense Unspecified
- 47. Cocaine Or Crack Violation Offense Unspecified
- 48. Controlled Substance – Offense Unspecified
- 49. Marijuana/Hashish Violation - Offense Unspecified
- 50. Drug Offenses - Violation/Drug Unspecified

### **J. Court-Ordered Violations**

- 51. Escape From Custody
- 52. Flight To Avoid Prosecution
- 54. Parole Violation
- 55. Probation Violations
- 58. Contempt Of Court



59. Offenses Against Courts, Legislatures And Commissions

68. Obstruction - Law Enforcement

**K. Weapon Offense**

53. Weapon Offense

**L. Traffic Offense – Minor**

60. Traffic Offenses – Minor

**M. Drunkenness/Vagrancy/Disorderly Conduct**

65. Drunkenness/Vagrancy/Disorderly Conduct

72.2 Liquor Law Violations, Other

**N. Military Specific Non-Violent Offenses**

88. Disobey Army Orders

89. Awol/Desertion/Treason

**O. Family-Related Non-Violent Offenses**

58. Family Related Offenses – Contempt Of Court

64.1 Family Related Offenses – Reckless Endangerment

64.3 Family Related Offenses – Domestic Disturbance

64.4 Family Related Offenses – Custody Offenses

66.2 Family Related Offenses – Morals/Decency – Other Moral/Decency Offense

**P. Other Non-Violent Offenses**

20.4 Violent Offenses, Other – Non-Violent Offenses

57. Habitual Offender

66.2 Morals/Decency – Other Moral/Decency Offense

67. Immigration Violations

69.3 Invasion Of Privacy –Other

71. Contributing To The Delinquency Of A Minor

73.4 All Other Public Order Offenses

74. Bribery And Conflict Of Interest

75. Juvenile Offenses

76. Felony – Unspecified

77. Misdemeanor Unspecified

78. Other/Unknown

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**eTable 11. Predict Suicide with Core and Crime and Drug Variables (n=334,936)<sup>1,2</sup>**

	%	SE	OR	(95% CI)	X <sup>2</sup>
Perpetrator in past 12 months of					
Major violence (Count of days)	--	--	1.53	(0.88-2.64)	2.32
Major violence (Yes/no)	3.15	0.03	1.50	(0.55-4.15)	0.62
Minor violence (Count of days)	--	--	1.40	(0.59-3.30)	0.59
Minor violence (Yes/no)	2.91	0.03	1.75	(0.64-4.83)	1.18
Verbal violence (Count of days)	--	--	2.66*	(1.53-4.64)	11.90
Verbal violence (Yes/no)	1.55	0.02	4.00*	(1.60-9.98)	8.81
Sexual violence (Count of days)	--	--	2.20*	(1.24-3.90)	7.35
Sexual violence (Yes/no)	0.98	0.02	3.93*	(1.23-12.55)	5.35
Non-violent reckless endangerment (Count of days)	--	--	0.00	(0.00-0.00)	0.00
Non-violent reckless endangerment (Yes/no)	2.36	0.03	0.00	(0.00-0.00)	0.00
Non-violent possession or use of illegal substance (Count of days)	--	--	0.66	(0.28-1.58)	0.86
Non-violent possession or use of illegal substance (Yes/no)	4.90	0.04	0.74	(0.23-2.37)	0.25
Non-violent weapon offense (Count of days)	--	--	2.49	(0.39-15.89)	0.94
Non-violent weapon offense (Yes/no)	0.41	0.01	2.81	(0.39-20.31)	1.05
Non-violent drunkenness/vagrancy/disorderly crime (Count of days)	--	--	0.63	(0.10-4.04)	0.24
Non-violent drunkenness/vagrancy/disorderly crime (Yes/no)	1.89	0.02	0.64	(0.09-4.59)	0.20
Non-violent crime in past 12 months (Count of days)	--	--	1.09	(0.88-1.35)	0.66
Other non-violent crime (Yes/no)	13.22	0.06	1.42	(0.79-2.58)	1.37
Any crime (Count of each type of perpetration (0-9))	--	--	1.20	(0.94-1.54)	2.08
Any crime (Yes/no)	20.22	0.07	1.25	(0.73-2.13)	0.65
Victim in past 12 months of					
Major violence (Count of days)	--	--	0.74	(0.12-4.52)	0.10
Major violence (Yes/no)	1.59	0.02	0.79	(0.11-5.68)	0.06
Minor violence (Count of days)	--	--	0.00	(0.00-0.00)	0.00
Minor violence (Yes/no)	1.21	0.02	0.00	(0.00-0.00)	0.00
Verbal violence (Count of days)	--	--	0.00	(0.00-0.00)	0.00
Verbal violence (Yes/no)	0.46	0.01	0.00	(0.00-0.00)	0.00
Sexual violence (Count of days)	--	--	0.00	(0.00-0.00)	0.00
Sexual violence (Yes/no)	1.24	0.02	0.00	(0.00-0.00)	0.00
Non-violent crime (Count of days)	--	--	0.39	(0.06-2.39)	1.05
Non-violent crime (Yes/no)	3.62	0.03	0.36	(0.05-2.60)	1.02
Any crime (Count of each type of victimization - (0-5))	--	--	0.39	(0.10-1.45)	1.99
Any crime (Yes/no)	6.85	0.04	0.37	(0.09-1.51)	1.92
Perpetrator in past 24 months of					
Major violence (Count of days)	--	--	1.43	(0.86-2.39)	1.89
Major violence (Yes/no)	3.89	0.03	1.21	(0.44-3.34)	0.14
Minor violence (Count of days)	--	--	1.33	(0.63-2.81)	0.56
Minor violence (Yes/no)	3.76	0.03	1.70	(0.68-4.24)	1.30
Verbal violence (Count of days)	--	--	2.40*	(1.37-4.20)	9.46
Verbal violence (Yes/no)	1.84	0.02	3.43*	(1.37-8.56)	6.98
Sexual violence (Count of days)	--	--	1.76*	(1.04-2.98)	4.47
Sexual violence (Yes/no)	1.26	0.02	3.08	(0.97-9.82)	3.61
Non-violent reckless endangerment (Count of days)	--	--	0.00	(0.00-0.00)	0.00
Non-violent reckless endangerment (Yes/no)	3.06	0.03	0.00	(0.00-0.00)	0.00
Non-violent possession or use of illegal substance (Count of days)	--	--	0.72	(0.35-1.48)	0.81
Non-violent possession or use of illegal substance (Yes/no)	5.60	0.04	0.87	(0.32-2.40)	0.07
Non-violent weapon offense (Count of days)	--	--	4.62*	(1.79-11.94)	9.98
Non-violent weapon offense (Yes/no)	0.55	0.01	6.79*	(2.13-21.68)	10.46
Non-violent drunkenness/vagrancy/disorderly crime (Count of days)	--	--	0.92	(0.26-3.25)	0.02
Non-violent drunkenness/vagrancy/disorderly crime (Yes/no)	2.41	0.03	1.00	(0.25-4.11)	0.00
Non-violent crime in past 12 months (Count of days)	--	--	1.04	(0.85-1.29)	0.17

Other non-violent crime (Yes/no)	16.51	0.06	1.19	(0.67-2.13)	0.36
Any crime (Count of each type of perpetration (0-9))	--	--	1.17	(0.93-1.47)	1.70
Any crime (Yes/no)	24.58	0.07	1.04	(0.62-1.77)	0.03
Victim in past 12 months of					
Major violence (Count of days)	--	--	1.38	(0.54-3.50)	0.45
Major violence (Yes/no)	2.08	0.03	1.86	(0.58-5.95)	1.11
Minor violence (Count of days)	--	--	0.70	(0.11-4.51)	0.14
Minor violence (Yes/no)	1.76	0.02	0.73	(0.10-5.26)	0.10
Verbal violence (Count of days)	--	--	0.00	(0.00-0.00)	0.00
Verbal violence (Yes/no)	0.60	0.01	0.00	(0.00-0.00)	0.00
Sexual violence (Count of days)	--	--	0.00	(0.00-0.00)	0.00
Sexual violence (Yes/no)	1.68	0.02	0.00	(0.00-0.00)	0.00
Non-violent crime (Count of days)	--	--	0.47	(0.13-1.69)	1.33
Non-violent crime (Yes/no)	5.62	0.04	0.46	(0.11-1.89)	1.16
Any crime (Count of each type of victimization - (0-5))	--	--	0.73	(0.35-1.51)	0.72
Any crime (Yes/no)	9.80	0.05	0.51	(0.19-1.42)	1.66
Positive drug test within 3 months					
Yes	3.83	0.03	0.93	(0.29-2.99)	0.01
No	96.17	0.03	--	--	--
Positive drug test within 12 months					
Yes	5.44	0.04	0.85	(0.31-2.35)	0.10
No	94.56	0.04	--	--	--

<sup>1</sup>Based on a multivariate discrete time (person-month) survival models each examining the association of one crime/drug variable controlling for the core variables in eTable 5.

<sup>2</sup>For a list of NCRP offense codes included in each criminal predictor see eTable 10.

**eTable 12. Predict Suicide with Core and Medical History Variables (n=334,936)<sup>1</sup>**

	%	SE	OR	(95% CI)	$\chi^2$
Any mental health hospitalization in 12 months before current hospitalization	1.00	0.07	2.28	(0.55-9.47)	1.29
Number of hospitalizations in last 12 months, not including current hospitalization (0-7+)	--	--	1.57*	(1.11-2.23)	6.45
Number of days in hospital in last 12 months (0-10+)	--	--	1.09	(0.87-1.37)	0.58
At least 10 days spent in hospital (Yes/no)	7.58	0.05	0.93	(0.26-3.37)	0.01
Number of hospitalizations/time in the Army					
25th percentile or higher	68.23	0.08	0.60	(0.32-1.13)	2.52
50th percentile or higher	39.33	0.08	0.43*	(0.21-0.87)	5.57
75th percentile or higher	13.74	0.06	0.94	(0.40-2.22)	0.02
30 days or fewer since previous MH hospitalization	11.12	0.05	0.82	(0.36-1.83)	0.24
120 days or fewer since previous MH hospitalization	16.48	0.06	0.80	(0.34-1.85)	0.28
Suicide attempts while hospitalized					
Attempted suicide while in the hospital (Yes/no)	1.67	0.02	0.00	(0.00-0.00)	0.00
1+ suicide attempt between day of admission and week before	12.36	0.06	2.93*	(1.69-5.09)	14.69
1+ suicide attempts in past 12 months prior to current month	2.38	0.03	4.7*	(2.1-10.54)	14.14
Any history of suicide attempts prior to hospitalization (Yes/no)	14.73	0.06	3.27*	(1.99-5.38)	21.88
$\chi^2_2$			23.78*		
Any of the physical components of PULHES are 2 or higher (nested)	20.78	0.07	1.29	(0.75-2.24)	0.86
Mental component of PULHES is 2 or higher (nested)	4.04	0.03	1.81	(0.81-4.05)	2.08
Loss of an arm, hand, leg or foot in the past 12 months (Yes/no)	0.37	0.01	0.00	(0.00-0.00)	0.00
10 or more % of body burned in the past 12 months (Yes/no)	0.16	0.01	0.00	(0.00-0.00)	0.00
10 or more % of body severely burned in the past 12 months (Yes/no)	0.10	0.00	0.00	(0.00-0.00)	0.00
Loss of vision in both eyes (369.0-369.4) in the past 12 months (Yes/no)	0.09	0.00	0.00	(0.00-0.00)	0.00
Loss of hearing in the past 12 months (1=yes/0=no)	2.63	0.03	2.26	(0.82-6.23)	2.47
Spinal injury in the past 12 months (Yes/no)	0.52	0.01	3.62	(0.5-26.41)	1.61
Serious injury in the past 12 months (Yes/no)	3.52	0.03	2.3	(0.92-5.78)	3.16
Outpatient visits in the past 12 months, any diagnosis priority					
ADHD - count of days	--	--	0.63	(0.23-1.73)	0.79
ADHD - occurrence of days	3.38	0.03	0.35	(0.05-2.53)	1.08
Conduct/ODD - count of days	--	--	0.94	(0.2-4.46)	0.01
Conduct/ODD - occurrence of days	1.03	0.02	1.17	(0.16-8.44)	0.02
Eating disorders - count of days	--	--	0.00	(0.00-0.00)	0.00
Eating disorders - occurrence of days	0.58	0.01	0.00	(0.00-0.00)	0.00
Sex disorders - count of days	--	--	1.59	(0.71-3.56)	1.27
Sex disorders - occurrence of days	1.46	0.02	1.89	(0.46-7.75)	0.78
Other impulse - count of days	--	--	0.72	(0.14-3.67)	0.16
Other impulse - occurrence of	1.44	0.02	0.79	(0.11-5.74)	0.05
Any impulse - count of days	--	--	0.84	(0.49-1.44)	0.38
Any impulse - occurrence of days	7.36	0.04	0.84	(0.34-2.09)	0.15

Adjustment disorder - count of days	--	--	1.26	(0.97-1.65)	2.9
Adjustment disorder - occurrence of days	16.39	0.06	1.25	(0.71-2.2)	0.58
Stressors/adversities - count of days	--	--	1.47*	(1.21-1.79)	14.99
Stressors/adversities - occurrence of days	25.33	0.08	2.05*	(1.27-3.32)	8.5
Marital problems - count of days	--	--	1.34*	(1.06-1.7)	5.76
Marital problems - occurrence of days	12.08	0.06	1.46	(0.8-2.68)	1.5
Traumatic stress - count of days	--	--	1.05	(0.59-1.85)	0.03
Traumatic stress - occurrence of days	6.22	0.04	1.07	(0.43-2.67)	0.02
PTSD - count of days	--	--	1.16	(0.96-1.39)	2.48
PTSD - occurrence of days	15.59	0.06	1.53	(0.88-2.64)	2.3
Any stress - count of days	--	--	1.32*	(1.12-1.55)	11.03
Any stress - occurrence of days	45.23	0.09	1.71*	(1.04-2.81)	4.42
Alcohol - count of days	--	--	1.24*	(1.04-1.47)	5.89
Alcohol - occurrence of days	18.68	0.07	1.30	(0.76-2.22)	0.89
Drug-induced mental illness - count of days	--	--	1.19	(0.63-2.26)	0.29
Drug-induced mental illness - occurrence of days	2.92	0.03	2.00	(0.8-5.00)	2.17
Drug abuse without dependence - count of days	--	--	1.08	(0.74-1.58)	0.16
Drug abuse without dependence - occurrence of days	6.29	0.04	1.88	(0.95-3.72)	3.25
Drug dependence - count of days	--	--	0.98	(0.64-1.52)	0.01
Drug dependence - occurrence of days	4.27	0.04	1.28	(0.51-3.21)	0.27
Any substance - count of days	--	--	1.19*	(1.01-1.42)	4.07
Any substance - occurrence of days	22.5	0.07	1.34	(0.8-2.24)	1.25
Suicidal ideation - count of days	--	--	2.57*	(1.82-3.64)	28.28
Suicidal ideation - occurrence of days	7.09	0.04	3.42*	(1.94-6.02)	18.19
Self-damaging behavior - count of days	--	--	0.00	(0.00-0.00)	0.00
Self-damaging behavior - occurrence of days	0.16	0.01	0.00	(0.00-0.00)	0.00
Any suicide - count of days	--	--	2.55*	(1.8-3.62)	27.79
Any suicide - occurrence of days	7.23	0.04	3.37*	(1.92-5.92)	17.86
Bipolar - count of days	--	--	1.29	(0.95-1.76)	2.65
Bipolar - occurrence of days	4.13	0.03	2.61*	(1.24-5.49)	6.44
Non-affective psychosis - count of days	--	--	1.73*	(1.34-2.24)	17.94
Non-affective psychosis - occurrence of days	3.95	0.03	3.92*	(2.03-7.55)	16.64
Organic mental disorders - count of days	--	--	1.00	(0.58-1.75)	0.00
Organic mental disorders - occurrence of days	4.82	0.04	1.72	(0.74-4.00)	1.57
Any bipolar (Bipolar/NAP/Organic) - count of days	--	--	1.37*	(1.10-1.7)	7.98
Any bipolar (Bipolar/NAP/Organic) - occurrence of days	11.22	0.06	2.45*	(1.42-4.23)	10.45
Depression - count of days	--	--	1.23*	(1.03-1.48)	5.14
Depression - occurrence of days	38.83	0.08	1.39	(0.86-2.24)	1.76
Depressive psychosis - count of days	--	--	1.40*	(1.18-1.68)	13.98
Depressive psychosis - occurrence of days	15.68	0.06	2.67*	(1.62-4.39)	14.87
Any depression - count of days	--	--	1.30*	(1.1-1.54)	9.52

Any depression - occurrence of days	42.50	0.08	1.60	(0.98-2.61)	3.53
Any sleep problems - count of days	--	--	1.21	(0.9-1.63)	1.58
Any sleep problems - occurrence of days	20.76	0.07	1.08	(0.62-1.88)	0.07
Any TBI - count of days	--	--	1.02	(0.73-1.43)	0.01
Any TBI - occurrence of days	11.73	0.06	1.00	(0.49-2.04)	0.00
Somatoform/dissociative disorders - count of days	--	--	1.61*	(1.02-2.53)	4.24
Somatoform/dissociative disorders - occurrence of days	3.35	0.03	1.42	(0.45-4.52)	0.35
Any pain (Seal or Sullivan) - count of days	--	--	1.15	(0.98-1.35)	2.79
Any pain (Seal or Sullivan) - occurrence of days	72.67	0.08	1.41	(0.78-2.54)	1.3
Any physical-related (insomnia, somatoform, TBI, pain) - count of days	--	--	1.17	(0.99-1.38)	3.33
Any physical-related (insomnia, somatoform, TBI, pain) - occurrence of days	76.16	0.07	1.37	(0.73-2.57)	0.98
Anxiety - count of days	--	--	1.29*	(1.08-1.55)	7.68
Anxiety - occurrence of days	29.17	0.08	1.76*	(1.08-2.85)	5.19
Personality disorders - count of days	--	--	1.69*	(1.31-2.17)	16.47
Personality disorders - occurrence of days	5.52	0.04	3.68*	(2.00-6.76)	17.55
Other disorders - count of days	--	--	1.86*	(1.32-2.62)	12.58
Other disorders - occurrence of days	9.22	0.05	2.38*	(1.32-4.31)	8.25
Symptoms, signs and ill-defined conditions, mental - count of days	--	--	1.42*	(1.17-1.71)	13.29
Symptoms, signs and ill-defined conditions, mental - occurrence of days	32.13	0.08	1.86*	(1.14-3.01)	6.24
Prior mental disorders - count of days	--	--	1.29	(0.86-1.94)	1.49
Prior mental disorders - occurrence of days	6.46	0.04	2.03*	(1.03-4.02)	4.18
Injury and poisoning - count of days	--	--	1.15	(0.84-1.57)	0.76
Injury and poisoning - occurrence of days	31.8	0.08	1.38	(0.85-2.24)	1.66
Any physical - count of days	--	--	1.54*	(1.1-2.16)	6.33
Any physical - occurrence of days	98.41	0.02	--	--	--
Any mental health diagnosis					
Count of days with outpatient hospitalizations from first of the month to day before hospitalization	--	--	1.1	(0.82-1.48)	0.42
Occurrence of days with outpatient hospitalizations from first of the month to day before hospitalization	34.5	0.08	1.49	(0.91-2.42)	2.55
Count of days with outpatient visits in the past 3 months	--	--	1.44*	(1.21-1.72)	17.05
Occurrence of days with outpatient visits in the past 3 months	65.19	0.08	1.75	(0.95-3.22)	3.17
Count of days with outpatient visits in the past 12 months	--	--	1.48*	(1.22-1.79)	16.28
Occurrence of days with outpatient visits in the past 12 months	78.19	0.07	1.57	(0.74-3.3)	1.38
Count of days with outpatient visits from first of the month to day before hospitalization	--	--	1.05	(0.76-1.45)	0.1
Occurrence of days with outpatient visits from first of the month to day before hospitalization, primary diagnosis	30.48	0.08	1.36	(0.83-2.23)	1.46
Count of days with outpatient visits in the past 3 months, primary diagnosis	--	--	1.32*	(1.11-1.56)	9.94
Occurrence of days with outpatient visits in the past 3 months, primary diagnosis	59.34	0.08	1.86*	(1.04-3.33)	4.34
Count of days with outpatient visits in the past 12 months, primary diagnosis	--	--	1.44*	(1.21-1.72)	16.4
Occurrence of days with outpatient visits in the past 12 months, primary diagnosis	72.37	0.08	1.69	(0.86-3.35)	2.31
Count of days with outpatient visits between first of month and day before hospitalization, psych CPT or MH provider	--	--	1.14	(0.82-1.58)	0.62
Occurrence of days with outpatient visits between first of month and day before hospitalization, psych CPT or MH provider	23.33	0.07	1.47	(0.88-2.46)	2.20
Count of days with outpatient visits in the past 3 months, psych CPT or MH provider	--	--	1.41*	(1.20-1.67)	16.86

Occurrence of days with outpatient visits in the past 3 months, psych CPT or MH provider	49.20	0.09	1.77*	(1.05-3.00)	4.56
Count of days with outpatient visits in the past 12 months, psych CPT or MH provider	--	--	1.47*	(1.25-1.73)	21.00
Occurrence of days with outpatient visits in the past 12 months, psych CPT or MH provider	60.47	0.08	2.13*	(1.15-3.95)	5.85
Occurrence of days in the hospital in the past 12 months, any diagnosis priority					
ADHD	0.39	0.01	0.00	(0.00-0.00)	0.00
Conduct/ODD	0.26	0.01	0.00	(0.00-0.00)	0.00
Eating disorders	0.17	0.01	0.00	(0.00-0.00)	0.00
Sex disorders	0.04	0.00	0.00	(0.00-0.00)	0.00
Other impulse	0.18	0.01	0.00	(0.00-0.00)	0.00
Any impulse	0.98	0.02	0.00	(0.00-0.00)	0.00
Adjustment disorder	1.44	0.02	1.80	(0.44-7.38)	0.66
Stressors/adversities	3.35	0.03	3.72*	(1.82-7.58)	13.06
Marital problems	1.02	0.02	2.45	(0.6-10.06)	1.56
Traumatic stress	0.29	0.01	0.00	(0.00-0.00)	0.00
PTSD	4.33	0.04	2.81*	(1.42-5.56)	8.76
Any stress	8.09	0.05	3.28*	(1.89-5.67)	17.92
Alcohol	4.82	0.04	3.64*	(1.97-6.72)	17.05
Drug-induced mental illness	0.72	0.02	6.39*	(2.31-17.71)	12.73
Drug abuse without dependence	1.55	0.02	2.22	(0.69-7.1)	1.80
Drug dependence	1.26	0.02	3.56*	(1.28-9.86)	5.94
Any substance	6.2	0.04	3.65*	(2.06-6.45)	19.75
Suicidal ideation	1.61	0.02	1.84	(0.57-5.94)	1.05
Self-damaging behavior	0.01	0.00	0.00	(0.00-0.00)	0.00
Any suicide	1.63	0.02	1.84	(0.57-5.91)	1.04
Bipolar	1.45	0.02	1.59	(0.39-6.52)	0.41
Non-affective psychosis	1.10	0.02	6.07*	(2.41-15.27)	14.68
Organic mental disorders	0.47	0.01	5.64*	(1.37-23.25)	5.74
Any bipolar (Bipolar/NAP/Organic)	2.76	0.03	4.43*	(2.18-9.01)	16.89
(inp_7_anydx_12M) Depression	5.95	0.04	5.21*	(3.04-8.92)	36.15
(inp_8_anydx_12M) Depressive psychosis	4.48	0.04	2.81*	(1.42-5.55)	8.79
Any depression	9.28	0.05	4.39*	(2.64-7.3)	32.41
Any sleep problems	1.20	0.02	3.21	(1-10.3)	3.83
Any TBI	2.09	0.02	2.88*	(1.04-7.98)	4.13
Somatoform/dissociative disorders	0.45	0.01	12.12*	(4.38-33.49)	23.13
Any pain (Seal or Sullivan)	9.88	0.05	2.94*	(1.67-5.21)	13.79
Any physical-related (insomnia, somatoform, TBI, pain)	10.91	0.05	2.79*	(1.6-4.87)	12.98
Anxiety	3.41	0.03	3.53*	(1.74-7.18)	12.16
Personality disorders	1.88	0.02	2.74	(0.99-7.56)	3.78
Other disorders	0.91	0.02	6.11*	(2.21-16.9)	12.18
Symptoms, signs and ill-defined conditions, mental	0.42	0.01	7.8*	(1.88-32.39)	8.00
Prior mental disorders	0.09	0.00	0.00	(0.00-0.00)	0.00

Injury and poisoning	4.72	0.04	4.17*	(2.17-8.01)	18.27
Any physical	20.1	0.07	3.03*	(1.86-4.92)	19.95
Any mental health diagnosis					
Count of days in the hospital from first of the month to day before hospitalization	--	--	0.73	(0.3-1.82)	0.44
Occurrence of days in the hospital from first of the month to day before hospitalization	2.77	0.03	0.52	(0.07-3.72)	0.43
Count of days in the hospital in the past 3 months	--	--	1.43*	(1.22-1.68)	19.64
Occurrence of days in the hospital in the past 3 months	10.38	0.05	2.63*	(1.52-4.54)	12.07
Count of days in the hospital in the past 12 months	--	--	1.55*	(1.35-1.77)	38.72
Occurrence of days in the hospital in the past 12 months	17.63	0.07	3.99*	(2.46-6.48)	31.33
Count of days with hospitalizations from first of the month to day before hospitalization, primary diagnosis	--	--	0.79	(0.32-1.91)	0.28
Occurrence of days with hospitalizations from first of the month to day before hospitalization, primary diagnosis	2.16	0.02	0.62	(0.09-4.46)	0.23
Count of days with hospitalizations in the past 3 months, primary diagnosis	--	--	1.47*	(1.25-1.73)	21.85
Occurrence of days with hospitalizations in the past 3 months, primary diagnosis	8.08	0.05	3.03*	(1.73-5.31)	15.05
Count of days with hospitalizations in the past 12 months, primary diagnosis	--	--	1.52*	(1.32-1.74)	33.49
Occurrence of days with hospitalizations in the past 12 months, primary diagnosis	13.08	0.06	3.72*	(2.27-6.12)	26.92

Count of days (0=0, 1=1-2, 2=3-5, 3=6-10, 4=11+); Occurrence of days (0=no, 1=yes)

<sup>1</sup>Based on a multivariate discrete time (person-month) survival models each examining the association of one medical history variable controlling for the core variables in eTable 5.



**eTable 13. Definitions of Traumatic Brain Injury (TBI) used in the analysis<sup>a</sup>**

<b>Definitions</b>	<b>ICD-9-CM codes<sup>b</sup></b>
CDC definition	800.xx, 801.xx, 803.xx, 804.xx, 850.xx, 851.xx, 852.xx, 853.xx, 854.xx, 873.xx, 905.0, 907.0
DoD definition	Definition A: 310.2, 800.xx, 801.xx, 803.xx, 804.xx, 850.xx, 851.xx, 852.xx, 853.xx, 854.xx, 907.0, 950.1, .2, .3, 959.01, V15.5_1-9, V15.5_A-F, V15.59_1-9, V15.59_A-F  Definition B: 310.2, 800.xx, 801.xx, 803.xx, 804.xx, 850.xx, 851.xx, 852.xx, 853.xx, 854.xx, 907.0, 950.1, .2, .3, 959.01 <sup>a</sup>
VHA definition	800.xx, 801.xx, 803.xx, 850.xx, 851.xx, 852.xx, 853.xx, 854.xx

Abbreviations: CDC, Center for Disease Control; DoD, Department of Defense; VHA, Veterans Health Administration; ICD-9-CM; International Classification of Diseases, Ninth Revision Clinical Modification.

<sup>a</sup>As some data sources did not include enough digits for the V-codes to be recorded, a decision was made to code DoD TBI both with and without V-extensions (i.e., the digit after the decimal in V-codes).

<sup>b</sup>“XX” indicates the inclusion of all fourth and/or fifth digits for that code.

**eTable 14. Predict Suicide with Core and Polypharmacy and Medications Variables (n=334936)<sup>1,2</sup>**

	%	SE	OR	(95% CI)	X <sup>2</sup>
Flag of four or more narcotic or psychotropic medications in 3-month period in the past 3 months	26.19	0.08	1.65*	(1.01-2.7)	3.96
Flag of four or more narcotic or psychotropic medications in 3-month period in the past 12 months	33.96	0.08	2.26*	(1.39-3.67)	10.74
Non-narcotic and Narcotic pain relievers prescribed in past 12 months (Times prescribed)					
Analgesic - Non-Narcotic					
Analgesic or Antipyretic Non-Narcotic and Combinations	--	--	0.78	(0.54-1.12)	1.87
NSAID Analgesics	--	--	0.90	(0.74-1.10)	1.02
Salicylate Analgesic and Salicylate Combinations	--	--	0.00	(0.00-0.00)	0.00
Analgesic – Narcotic					
Long-acting	--	--	1.06	(0.64-1.76)	0.06
Short-acting Schedule II	--	--	1.11	(0.89-1.39)	0.91
Short-acting not Schedule II	--	--	0.99	(0.78-1.26)	0.00
Psychotropic medications prescribed in past 12 months (Times prescribed)					
Antianxiety Agent					
Antihistamine Type	--	--	1.13	(0.61-2.13)	0.15
Benzodiazepines	--	--	1.38*	(1.08-1.76)	6.53
Non-Benzodiazepine	--	--	1.63	(1-2.66)	3.80
GABA Analog	--	--	1.25	(0.89-1.75)	1.72
Antidepressants					
MAOI SARI NaSSA NDRI or Other	--	--	1.68*	(1.35-2.1)	21.40
SNRI	--	--	1.10	(0.78-1.56)	0.32
SSRI	--	--	1.41*	(1.18-1.69)	13.81
TCAs	--	--	1.57*	(1.11-2.21)	6.52
Sedative-Hypnotic					
Benzodiazepines	--	--	1.28	(0.76-2.16)	0.87
Antidepressant Type	--	--	1.44*	(1.11-1.86)	7.46
Others	--	--	1.16	(0.9-1.48)	1.27
CNS Stimulant - Armodafinil/Modafinil	--	--	2.14*	(1.26-3.66)	7.85
Attention Deficit-Hyperactivity (ADHD) Therapy	--	--	0.80	(0.39-1.65)	0.35
Chemical Dependency					
Narcotic or Alcohol Treatment Agents	--	--	1.94*	(1.29-2.92)	10.15
Smoking Deterrents and Combinations	--	--	0.90	(0.46-1.78)	0.09
Migraine Therapy					
Serotonin Agonists	--	--	1.20	(0.72-2.00)	0.49
All other	--	--	0.79	(0.26-2.40)	0.17
Anticonvulsant	--	--	1.53*	(1.14-2.06)	7.99
Antipsychotics (Neuroleptics)	--	--	1.48*	(1.21-1.80)	14.81
Bipolar Therapy Agents presc bed)	--	--	1.55*	(1.11-2.15)	6.73
Eating Disorder Therapy	--	--	0.00	(0.00-0.00)	0.00
Cognitive Disorder Therapy	--	--	0.00	(0.00-0.00)	0.00
Post-Traumatic Stress Disorder (PTSD) Therapy - Prazosin	--	--	1.45*	(1.02-2.05)	4.33
Antianxiety and Anticonvulsant Agent - Benzodiazepines	--	--	1.41*	(1.11-1.79)	8.02
Sedative-Hypnotic and Anticonvulsant Agent - Barbiturates	--	--	0.00	(0.00-0.00)	0.00
Dermatological - Isotretinoin	--	--	0.00	(0.00-0.00)	0.00
ACE Inhibitors	--	--	1.32	(0.83-2.13)	1.36
Angiotensin II Receptor Blockers (ARBs)	--	--	2.12*	(1.16-3.88)	5.92
Angiotensin II Receptor Blockers (ARBs) Combinations	--	--	0.00	(0.00-0.00)	0.00
Migraine Therapy and Analgesic - Non-Narcotic - NSAID Analgesics	--	--	--	--	--
Other Medication	--	--	1.10	(0.89-1.36)	0.80
Any medication	--	--	1.13	(0.85-1.50)	0.73

<sup>1</sup>Based on a multivariate discrete time (person-month) survival models each examining the association of one medication variable controlling for the core variables in eTable 5.

<sup>2</sup>For a list of medications included in each of the above medication predictors see eTable 3.

**eTable 15. Predict Suicide with Core and Index Hospitalization Variables (n=334936)**

	%	SE	OR	(95% CI)	$\chi^2$
Mental disorders diagnosed during latest hospitalization (Yes/no)					
ADHD	1.82	0.02	0.62	(0.09-4.50)	0.22
Conduct/ODD	1.13	0.02	1.12	(0.16-8.09)	0.01
Eating disorders	0.44	0.01	0.00	(0.00-0.00)	0.00
Sex disorders	0.17	0.01	0.00	(0.00-0.00)	0.00
Other impulse	0.81	0.02	0.00	(0.00-0.00)	0.00
Any impulse	4.21	0.04	0.55	(0.13-2.25)	0.69
Count of impulse disorders	4.21	0.04	0.55	(0.14-2.17)	0.73
Adjustment disorder	10.42	0.05	1.19	(0.55-2.55)	0.19
Stressors/adversities	15.08	0.06	1.08	(0.57-2.07)	0.06
Marital problems (0=no, 1=yes)	5.53	0.04	1.85	(0.83-4.12)	2.29
Traumatic stress	1.81	0.02	0.97	(0.13-7.02)	0.00
PTSD	16.85	0.07	0.62	(0.31-1.22)	1.91
Any stress	40.22	0.09	1.03	(0.63-1.69)	0.02
Count of stress disorders	40.22	0.08	1.00	(0.71-1.42)	0.00
Alcohol dependence/abuse	28.54	0.08	0.93	(0.55-1.57)	0.08
Drug-induced mental illness	2.44	0.03	1.47	(0.46-4.69)	0.42
Drug abuse without dependence	5.91	0.04	0.84	(0.30-2.30)	0.12
Drug dependence	4.80	0.04	0.62	(0.19-1.99)	0.65
Any substance	34.89	0.08	0.99	(0.60-1.62)	0.00
Count of substance disorders	34.89	0.08	0.92	(0.64-1.32)	0.21
Suicidal ideation	5.64	0.04	2.20*	(1.13-4.28)	5.38
Self-damaging behavior	0.02	0.002	0.00	(0.00-0.00)	0.00
Suicidal ideation or self-damaging behavior	5.66	0.04	2.19*	(1.13-4.27)	5.33
Bipolar	5.02	0.04	0.91	(0.33-2.53)	0.03
Non-affective psychosis	3.37	0.03	2.45*	(1.04-5.77)	4.24
Organic mental disorders	1.85	0.02	0.79	(0.11-5.74)	0.06
Bipolar/NAP/organic	9.71	0.05	1.34	(0.68-2.65)	0.72
Count of bipolar disorders	9.71	0.05	1.35	(0.74-2.47)	0.94
Depression	30.58	0.08	0.90	(0.54-1.53)	0.14
Depressive psychosis	17.82	0.07	0.99	(0.55-1.79)	0.00
Any depression	46.06	0.09	0.86	(0.53-1.40)	0.38
Any sleep disorders	3.89	0.03	0.61	(0.15-2.50)	0.47
Any TBI	7.20	0.04	0.73	(0.22-2.37)	0.28
Somatoform/dissociative disorders	1.82	0.02	3.75*	(1.36-10.32)	6.55
Any pain	28.08	0.08	1.01	(0.57-1.81)	0.00
Any physical-related (insomnia, somatoform, TBI, pain)	32.45	0.08	0.93	(0.53-1.62)	0.07
Count of insomnia, somatoform, TBI, pain	32.45	0.08	1.03	(0.70-1.53)	0.03
Anxiety	14.38	0.06	1.26	(0.69-2.32)	0.56
Personality disorders	8.65	0.05	1.06	(0.48-2.35)	0.02
Count of any mental disorders	--	--	1.06	(0.88-1.27)	0.37
Injuries diagnosed during latest hospitalization (Yes/no)					
Loss of an arm, hand, leg or foot	0.57	0.01	0.00	(0.00-0.00)	0.00
10 or more % of body burned	0.25	0.01	0.00	(0.00-0.00)	0.00
10 or more % of body severely burned	0.12	0.01	0.00	(0.00-0.00)	0.00
Loss of vision in both eyes	0.10	0.01	0.00	(0.00-0.00)	0.00
Loss of hearing	1.08	0.02	5.58	(1.99-15.65)	10.67
Spinal injury	0.99	0.02	0.00	(0.00-0.00)	0.00
Any serious injury	2.77	0.03	3.02*	(1.04-8.75)	4.15

<sup>†</sup>Based on a multivariate discrete time (person-month) survival models each examining the association of one current visit variable controlling for the core variables in eTable 5.

**eTable 16. Exponentiated coefficients from lasso model and odds ratios from logistic regression model with 73 predictors**

	<b>Exponentiated coefficients</b>	<b>OR</b>	<b>(95% CI)</b>	<b>VIF</b>
<b>I. Sociodemographic and Army career variables</b>				
Male (Yes/no)	2.09	7.57*	(2.15-26.69)	1.1
Age of Enlistment 27+ (Yes/no)	1.27	1.72	(0.90-3.28)	1.0
Currently in 2nd (or higher) deployment as of admission	0.87	<0.001*	(<0.001-<0.001)	1.1
Command at time of discharge				
N/S America, Europe/Central/Africa, Pacific	0.96	0.48	(0.16-1.45)	1.0
AMC/Other/Unknown	1.15	1.34	(0.62-2.88)	1.1
Rank at time of discharge				
E7-E9	1.22	1.60	(0.62-4.10)	1.3
Officer	1.23	2.04	(0.85-4.87)	1.2
>8 years in service as of discharge	1.13	1.14	(0.59-2.19)	1.6
AFQT score above 50 <sup>th</sup> percentile (Yes/no)	0.53	0.32*	(0.14-0.719)	1.0
Currently married at time of discharge	1.16	1.44	(0.83-2.48)	1.2
Asian	1.03	2.01	(0.72-5.62)	1.0
<b>II. Unit-level variables</b>				
Median number of months all higher enlisted soldiers (E5-E9) have been on duty in this unit - 12 months	1.00	1.03*	(1.01-1.06)	1.0
On average, the percentage of suicides over the past year for all duty units over the past year	1.21	3.35	(0.81-13.84)	1.0
On average, the percentage of combat deaths over the past year for all duty units over the past year	0.96	0.14*	(0.04-0.57)	1.1
<b>III. Access to weapons</b>				
Number of registered pistols	1.10	1.04	(0.73-1.49)	2.4
Pistols registered in the last four years, not counting current month (Yes/no)	1.45	1.82	(0.62-5.29)	2.4
Bows registered in the last four years, not counting current month (Yes/no)	4.87	7.12*	(1.54-32.96)	1.0
<b>VI. Crime, perpetration and victimization</b>				
Number of verbal assault offenses in past 12 months	1.93	1.77	(0.98-3.20)	1.0
Number of sexual violence offenses in past 12 months	1.56	2.00*	(1.19-3.38)	1.0
Number of non-violent weapon offense in past 12 months	0.99	0.06*	(0.01-0.43)	3.5
Victim of any crime in past 12 months (Count of each type of victimization)	0.90	0.38	(0.12-1.17)	1.0
Any non-violent reckless endangerment in past 24 months (Yes/no)	0.68	<0.001*	(<0.001-<0.001)	1.0
Any non-violent weapon offense in past 24 months (Yes/no)	3.87	32.02*	(7.89-129.98)	3.5
<b>V. Suicidal behavior</b>				
Attempted suicide while in the hospital (Yes/no)	0.85	<0.001*	(<0.001-<0.001)	1.1
1+ suicide attempt between day of admission and week before	1.26	1.67	(0.62-4.49)	6.2
Any history of suicide attempts prior to hospitalization (Yes/no)	1.84	2.60	(0.91-7.48)	6.4
<b>VI. Prior treatment</b>				
# of hospitalizations/time in the Army - 50th percentile or higher	0.76	0.45*	(0.23-0.85)	1.4
Count of days with outpatient visits in the past 12 months, any diagnosis priority				
Any impulse	0.96	0.60*	(0.37-0.99)	1.2
Stressors/adversities	1.01	1.09	(0.85-1.38)	1.4

Drug abuse without dependence	1.00	0.84	(0.59-1.21)	1.4
Drug dependence	0.91	0.66*	(0.45-0.96)	1.4
Suicidal ideation	1.65	2.20*	(1.45-3.32)	1.2
Non-affective psychosis	1.049	0.81	(0.49-1.34)	4.9
Organic mental disorders	0.95	0.49*	(0.25-0.96)	1.2
Depression	1.00	0.65*	(0.49-0.86)	1.8
Non-affective psychosis	1.26	1.63	(0.53-5.04)	3.7
Depressive psychosis	1.03	1.28	(0.69-2.37)	1.3
Personality disorders	1.44	2.54*	(1.27-5.05)	1.1
Any mental -psych CPT or MH provider	1.05	1.24	(0.97-1.58)	2.4
Occurrence of days in the hospital in the past 12 months, any diagnosis priority (Yes/no)				
Any impulse	0.57	<0.001*	(<0.001-<0.001)	1.2
Alcohol	1.06	1.48	(0.64-3.41)	1.4
Drug-induced mental illness	2.06	3.19	(0.81-12.64)	1.1
Suicidal ideation	0.88	229.60*	(32.61->999.99)	138.0
Any suicide	0.84	0.001*	(<0.001-0.01)	138.0
Bipolar	1.00	0.34	(0.07-1.81)	1.2
Non-affective psychosis	1.81	3.08	(0.91-10.41)	1.8
Organic mental disorders	1.20	1.22	(0.27-5.46)	1.1
Depression	2.03	2.71*	(1.20-6.15)	1.5
Somatoform/dissociative disorders	4.24	8.92*	(2.25-35.34)	1.0
Other disorder	1.19	2.64	(0.72-9.64)	1.1
Symptoms, signs and ill-defined conditions, mental	1.64	2.68	(0.82-8.79)	1.0
Injury and poisoning	1.13	1.62	(0.66-3.96)	1.2
Any mental - count of days in the hospital from first of the month to day before hospitalization	0.85	0.62	(0.38-1.01)	6.4
Any mental - count of days in the hospital in the past 12 months, any diagnosis priority	1.08	1.05	(0.80-1.40)	3.5
Any mental - occurrence of days in the hospital from first of the month to day before hospitalization	0.78	0.40	(0.05-3.40)	6.3
Any mental - count of days with hospitalizations in the past 3 months, primary diagnosis	1.08	1.15	(0.92-1.43)	2.2
Psychotropic medications prescribed in past 12 months (Times prescribed)				
Analgesic - Non-Narcotic - Salicylate Analgesic and Salicylate Combinations	0.92	<0.001*	(<0.001-<0.001)	1.1
Antidepressants - MAOI SARI NaSSA NDRI or Other	1.25	1.38*	(1.08-1.78)	1.2
Antidepressants - TCAs and related	1.10	1.36	(0.91-2.05)	1.1
CNS Stimulant - Armodafinil/Modafinil	1.33	1.68*	(1.05-2.69)	1.0
Chemical Dependency - Narcotic or Alcohol Treatment Agents	1.30	1.58	(0.99-2.52)	1.1
Anticonvulsant	1.03	1.30	(0.90-1.90)	1.1
Angiotensin II Receptor Blockers (ARBs)	1.40	1.70	(0.77-3.72)	1.0
VII. Characteristics of current hospitalization				
Log of days between discharge from hospital and end of the month	1.12	2.44*	(1.22-4.86)	1.0
Soldier was hospitalized in a civilian psychiatric hospital or in a department of mental health	1.19	1.42	(0.81-2.52)	1.3
Mental primary diagnosis	1.05	1.47	(0.67-3.22)	1.4
Mental disorders diagnosed during latest hospitalization (Yes/no)				

PTSD	0.77	0.34*	(0.15-0.74)	1.2
Suicidal ideation	1.80	2.47*	(1.20-5.12)	1.0
Non-affective psychosis	1.21	2.36	(0.97-5.74)	1.2
Somatoform/dissociative disorders	1.77	3.90*	(1.44-10.54)	1.0
Loss of hearing diagnosed during hospitalization	4.07	5.18*	(1.43-18.80)	1.0
VIII. Controls				
Spring	0.85	0.52	(0.24-1.14)	1.1
Fall	1.24	1.58	(0.94-2.68)	1.1

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