This report examines trends in health record documentation of the treatment for mental disorders of active component U.S. military service members from January 2000 through September 2013. Inpatient and outpatient records were used to estimate the numbers and proportions of service members who received such treatment and the durations and intensities of courses of treatment. Annual numbers of service members who received treatment for mental disorders and the annual numbers of treatment courses increased steadily from 2004–2012. More than half of service members who received such treatment had only one treatment course, but the annual numbers of such single treatment courses increased by 60% during the 13-year surveillance period. Annual numbers of treatment courses that consisted of more than 30 encounters increased 5.6-fold between 2001 and 2012 and the mean number of days per treatment course markedly increased during the last half of the period. The proportion of overall service time contributed by members who were in treatment for mental disorders increased from about 1% in 2000 to 3.5% in 2012. The methods and findings of this analysis are compared and contrasted with other published studies and reports about mental health problems in the Armed Forces since the beginning of the wars in Afghanistan and Iraq.

The productivity of a workforce is inherently related to the psychological health of the workers. A study of more than 60,000 full-time workers in Australia found that 14.1% had “moderate” or “high” psychological distress, that higher levels of distress were associated with lower productivity, and that employees who were treated successfully for mental disorders had nearly the same productivity as those with no such histories. Such findings suggest that mental health programs in the workplace should focus on identifying and enabling treatment for performance-degrading mental disorders.

The U.S. military is a unique workforce because military service, especially during wartime, is often dangerous, sometimes life threatening, and inherently stressful. Not surprisingly, since the beginning of combat operations in Fall 2001, there have been large and increasing numbers of veteran and current military members with self-reported and clinically diagnosed mental disorders. The experience reflects, at least in part, the increased psychological stresses associated with prolonged warfighting, repeated deployments, and widespread and recurrent exposures to war-related suffering and death. However, the marked increases in mental disorder–related diagnoses also reflect the effects of mandatory screening after wartime deployments; increased awareness of and concerns regarding mental disorders by senior leaders and policymakers; and the effects of new policies and leadership initiatives aimed at decreasing stigmas associated with seeking and receiving mental health–related care and increasing access to behavioral health evaluations and treatments.

If most military members with clinically significant, socially disruptive, or military performance-degrading behavioral health problems sought or were referred for mental disorder–related treatments, then the numbers and proportions of military members “in treatment” for mental disorders over time would reliably indicate the status and trends of the psychological health of the force. However, if many military members with clinically significant mental disorders avoided indicated evaluations and treatments, or if the proportions of those affected who were in treatment significantly changed over time, then the numbers and proportions in treatment would not reliably indicate the status and trends of the psychological health of the force.

This report uses inpatient and outpatient healthcare records to estimate the numbers and proportions of U.S. military members who began treatment for mental disorders during the interval January 2000 through December 2012. It also documents trends in the durations and intensities (i.e., clinical encounters per treatment course) of mental disorder–related treatment courses over the 13-year surveillance period. The results are assessed in relation to those of recent studies that have estimated the prevalences of mental disorders in selected subgroups of veteran and actively serving military populations.

The surveillance period was 1 January 2000 through 30 September 2013. The surveillance population included all individuals who served in the active component of the U.S. Armed Forces any time during the surveillance period. Individuals who had a mental disorder–related encounter between 1 January 2000 and 31 December 2012 were included in summaries of mental disorder–related courses of treatment. If a course of treatment began during this period and extended into calendar year 2013, the time accrued to the treatment course until 30 September 2013. Follow-up ended at 30 September 2013. Individuals beginning a new course of treatment after 1 January 2013 were excluded from this analysis. For surveillance purposes, a “mental disorder–related medical encounter” was defined as a hospitalization or ambulatory visit that was documented with a standardized electronic health record.
healthcare record that included a mental disorder–specific diagnosis in the first or second diagnostic position. Diagnostic codes (ICD-9-CM) that were considered indicative of mental disorder–related medical encounters are listed in Table 1.

For estimation purposes, each mental disorder–related “course of treatment” was defined as the time from an “initial” mental disorder–related encounter until the last “follow-up” encounter where each follow-up encounter occurred within 60 days of the preceding such encounter. “Initial encounters” of treatment courses included each individual’s first mental disorder–related encounter while in active service; and each mental disorder–related encounter that occurred more than 60 days after any prior such encounter.

For summary purposes, initial encounters with no follow-up encounters within 60 days were considered courses of treatment of 1-day duration; and each course of treatment was attributed to the calendar year that it began. Also, each individual could have multiple initial encounters and thus multiple courses of treatment during the surveillance period.

**Affected individuals**

From 2000 through 2003, there was remarkable consistency in the annual numbers of service members who received initial diagnoses of mental disorders (Figure 1, Table 2). However, from 2004 through 2012, annual numbers of service members with at least one initial mental disorder–related diagnosis steadily and markedly increased. As such, 76% more service members received initial mental disorder diagnoses in 2012 than in 2000.

**Treatment courses**

Annual numbers of treatment courses remained fairly stable from 2000 through 2003 but markedly increased in 2004, 2005, and from 2006 through 2012 (Figure 1, Table 2). As such, there were 88% more treatment courses in 2012 (n=288,757) than in 2000 (n=153,805).

Of all service members with at least one mental disorder–specific diagnosis during the period, more than half (57.7%) had only one treatment course (data not shown). Approximately one of five (20.9%) affected service members had two treatment courses. One of ten (9.7%) had three treatment courses, and one of eight (11.8%) had more than three treatment courses. Over the entire period, the mean number of treatment courses per affected service member was 1.94.

**Encounters per treatment course**

During the surveillance period, 45.1% of all mental disorder–related treatment courses entailed only one encounter (Figure 2). The mean and median numbers of encounters per treatment course were 6.8 and 2, respectively (Figure 3). The range of encounters per treatment course was 1 to 1,066.

The numbers of single-visit treatment courses per year generally increased throughout the period; as a result, there were approximately 60% more single-visit treatment courses in 2012 (n=110,346) than in 2000 (n=68,859). However, the proportions of treatment courses that consisted of one visit only remained fairly stable from 2000 (44.8%) through 2005

### TABLE 1. Diagnostic codes (ICD-9-CM) considered indicators of mental disorder-related medical encounters

<table>
<thead>
<tr>
<th>Description</th>
<th>ICD-9 codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICD-9 mental disorders</td>
<td>290–319 (excluding 305.1, 299.xx, 315.xx, 317.xx-319.xx)</td>
</tr>
<tr>
<td>V-coded mental disorders</td>
<td></td>
</tr>
<tr>
<td>Psychological trauma</td>
<td>V15.4</td>
</tr>
<tr>
<td>Other psychological or physical stress</td>
<td>V62.x (excluding V62.0)</td>
</tr>
<tr>
<td>Person feigning illness (malingering)</td>
<td>V15.4</td>
</tr>
</tbody>
</table>
through 2005, the percentages of treatment courses with durations of 1 day ranged from 47.2% to 50.9%, while those with durations greater than 98 days ranged from 9.4% to 11.2%. However, from 2006 through 2012, the percentages of treatment courses of 1-day durations declined from 47.3% to 40.6%, while those with durations greater than 98 days increased from 11.5% to 20.8%. Because of the lengthening of treatment courses, from 2006 through 2012, total duty days served while in treatment for mental disorders per year increased relatively much more rapidly than the number of treatment courses per year (Figure 4).

Days in treatment

The mean and median durations of treatment courses overall were 47.9 days and 7 days, respectively. The durations of treatment courses ranged from 1 to 2,560 days (data not shown).

The mean number of days per treatment course remained fairly stable from 2000 through 2005 (range, 32.2–37.1 days) but steadily and markedly increased from 2006 through 2011 (mean days per treatment course, 2006: 38.2 days; 2011: 64.9 days) (Figure 3).

During the first 6 years of the surveillance period, the distributions of durations of treatment courses did not markedly change (Figure 4). For example, from 2000 through 2005, the percentages of treatment courses with durations of 1 day or more than 10 visits remained fairly stable (47.3%) but steadily decreased through 2012 (38.2%) (Figure 2).

In regard to relatively intensive treatments, annual numbers of courses that consisted of more than 30 encounters each increased 5.6-fold between 2001 (n=2,992) and 2012 (n=19,869) (data not shown). The proportions of treatment courses that consisted of 30 or more visits each remained fairly stable from 2000 (2.4%) through 2005 (2.4%) but steadily increased through 2011 (7.0%).

**Table 2.** Numbers and durations of mental disorder-related treatment courses, by year, active component, U.S. Armed Forces, 2000–2012

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of individuals with at least one &quot;initial&quot; mental disorder diagnosis*</th>
<th>No. of mental disorder treatment courses</th>
<th>Days in mental disorder treatment</th>
<th>Total days of service by active component members</th>
<th>% of total days of active component service during which members were in treatment for mental disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>132,079</td>
<td>153,805</td>
<td>5,709,205</td>
<td>510,832,989</td>
<td>1.12</td>
</tr>
<tr>
<td>2001</td>
<td>132,597</td>
<td>153,228</td>
<td>5,028,289</td>
<td>510,711,544</td>
<td>0.98</td>
</tr>
<tr>
<td>2002</td>
<td>139,985</td>
<td>162,675</td>
<td>5,239,703</td>
<td>521,119,118</td>
<td>1.01</td>
</tr>
<tr>
<td>2003</td>
<td>136,390</td>
<td>158,292</td>
<td>5,426,927</td>
<td>529,732,273</td>
<td>1.02</td>
</tr>
<tr>
<td>2004</td>
<td>154,330</td>
<td>179,767</td>
<td>6,314,137</td>
<td>530,740,899</td>
<td>1.19</td>
</tr>
<tr>
<td>2005</td>
<td>168,516</td>
<td>197,960</td>
<td>6,809,797</td>
<td>516,907,972</td>
<td>1.32</td>
</tr>
<tr>
<td>2006</td>
<td>169,675</td>
<td>200,104</td>
<td>7,650,293</td>
<td>513,238,231</td>
<td>1.49</td>
</tr>
<tr>
<td>2007</td>
<td>176,404</td>
<td>210,491</td>
<td>9,546,419</td>
<td>511,276,545</td>
<td>1.87</td>
</tr>
<tr>
<td>2008</td>
<td>188,065</td>
<td>226,761</td>
<td>11,858,127</td>
<td>518,307,483</td>
<td>2.29</td>
</tr>
<tr>
<td>2009</td>
<td>200,942</td>
<td>244,047</td>
<td>14,054,475</td>
<td>527,469,039</td>
<td>2.66</td>
</tr>
<tr>
<td>2010</td>
<td>205,936</td>
<td>250,776</td>
<td>15,536,241</td>
<td>532,667,078</td>
<td>2.92</td>
</tr>
<tr>
<td>2011</td>
<td>221,398</td>
<td>272,230</td>
<td>17,656,483</td>
<td>531,988,436</td>
<td>3.32</td>
</tr>
<tr>
<td>2012</td>
<td>232,184</td>
<td>288,767</td>
<td>18,348,668</td>
<td>524,266,715</td>
<td>3.50</td>
</tr>
<tr>
<td>Total</td>
<td>2,258,501</td>
<td>2,698,903</td>
<td>129,178,764</td>
<td>6,779,258,322</td>
<td>1.91</td>
</tr>
</tbody>
</table>

*Some individuals were affected (and included in this summary) in more than one year.
The annual number of duty days served by active component members who were in mental disorder–related treatment remained fairly stable from 2000 (n=5,709,205 days) through 2003 (n=5,426,927 days), steadily increased through 2006 (n=7,650,293 days), and then sharply increased through 2012 (n=18,348,668 days) (Table 2). Of note, the number of duty days per year served by active component members in mental disorder–related treatment more than tripled from 2000 to 2012.

The proportion of military service time overall contributed by active component members who were in treatment for mental disorders remained fairly stable from 2000 through 2003 (range: 0.98%–1.12%) but increased more than twofold from 2003 through 2012 (3.50%) (Table 2, Figure 2).

In 2012, U.S. military members were engaged in treatment for mental disorders during more than 50,000 person-years of active service; as such, at any given time during 2012, approximately 1 of 29 active component members were in treatment for mental disorders.

In the past 13 years, the highest annual percentage of duty days served by active component members who were in treatment for mental disorders (3.5%) was in 2012. The estimated proportion of all military members in treatment for mental disorders in 2012 (3.5%) was approximately 3.5 times that in 2000 (0.99%), the year preceding the September 11 terrorist attacks and the beginning of ground combat in Afghanistan.

Numerous reports have documented the large and increasing numbers of active and veteran U.S. military members who have acknowledged or been diagnosed with behavioral health problems since the beginning of the wars in Afghanistan and Iraq. For example, a frequently cited RAND Corp. study found that, among study volunteers who were military veterans and had served in Iraq or Afghanistan, 14% screened positive for post-traumatic stress disorder (PTSD) and 14% screened positive for depression. The report also estimated that only approximately half of those who screened positive for either PTSD or depression had sought care.

Other studies have assessed the behavioral health of currently serving military members. For example, Riddle and colleagues estimated the prevalence of mental disorders among members of the U.S. Armed Forces in 2001–2003 based on questionnaire responses of a representative sample of currently serving military members (n=77,047). Overall, 18.1% of the respondents met criteria for any mental disorder; the most prevalent mental disorder by far was alcohol abuse (11.9%). The findings are noteworthy because they document a fairly high prevalence of self-reported mental disorders among actively serving military members prior to the start of combat operations in Iraq.

A more recent study estimated the “30-day prevalence” of mental disorders among U.S. Army members in 2011 based on questionnaire responses of a representative sample (n=5,428) of non-deployed, non-recruit, active duty soldiers. Overall, 25.1% of the respondents met criteria for any
mental disorder; the most prevalent mental disorders were intermittent explosive disorder (11.2%), PTSD (8.6%), and attention deficit hyperactivity disorder (7.0%).

Also of note, each year from 2010 to 2013, U.S. military Joint Mental Health Advisory Teams (MHATs) conducted surveys of randomly selected ground combat units in Iraq and Afghanistan. In their annual reports, MHATs estimated that 10.0%–17.3% of deployed combat troops met criteria for “psychological problems” (i.e., acute stress, depression, or anxiety). Interestingly, the estimated prevalence of “psychological problems” in 2013 (10.0%) was the lowest since 2009.

Most assessments of the behavioral health of veteran and active military members have relied on responses to questionnaires of volunteer participants. However, a recent MSMR report summarized numbers, rates, and trends of clinical diagnoses of mental disorders among actively serving U.S. military members overall. The report documented that, during each year from 2001 through 2011, 5.5%–9.0% of all active military members received at least one mental disorder-specific diagnosis. Rates of mental disorder diagnoses steadily increased from 2006 through 2012, the intensities of treatment courses increased much more rapidly than the numbers of individuals diagnosed with new mental disorder diagnoses had no follow-up encounters within 60 days. As such, the criteria used for this report were "rule out" diagnoses (e.g., evaluations for disorders that were not present), behavioral health conditions not requiring medical clinical follow-ups (e.g., normal reactions to stressful life events), or cases lost to clinical care (e.g., non-compliance with scheduled follow-ups, deployments or assignments to new duty locations, medical disability retirements or other terminations of military service). Whatever the reasons, it is noteworthy that although diagnoses of mental disorders consistently increased during the surveillance period, because so many treatment courses were so short, relatively few military members (1.0%–3.5%) were “in treatment” for mental disorders at any given time.

Because so many mental disorders that affect active military members have brief clinical and military operational effects, the numbers of active military members who are in treatment for mental disorders at given times remain relatively low—even if rates of diagnoses of new mental disorders are fairly high. On the other hand, prevalences of mental disorders among veterans of military service may be relatively high, even if rates of new diagnoses among veterans are fairly low. In summary, because the underlying populations are not comparable and the severities and durations of the self-reported and clinically diagnosed disorders of interest likely differ, direct comparisons of prevalence estimates of other studies and surveys with those of this report are not very informative and potentially very misleading.

In 2006, a Department of Defense task force was commissioned to assess issues related to the mental health of military members. The task force’s main findings were that stigmas related to mental health care were pervasive; mental health professionals were not sufficiently accessible to service members and their families; there were significant gaps in continuity of care; and there were insufficient resources (e.g., funds, personnel) to adequately support the psychological health of service members. At least partly in response to these findings, the Army more than doubled its military and civilian behavioral health workforce over the next 5 years. To a large extent, the findings of this report directly reflect the significant increases in behavioral healthcare providers since 2006.

For example, from 2004 through 2012, the numbers of service members diagnosed with mental disorders steadily increased. However, the numbers of encounters during and the durations of treatment courses remained fairly stable from 2000 through 2005 but then sharply and steadily increased from 2006 through 2011. Thus, from 2006 through 2012, the intensities (e.g., number of encounters) and durations of treatment courses increased much more rapidly than the numbers of individuals diagnosed with new mental disorders. The timing of the increases closely correspond to the increases in behavioral healthcare providers.

The findings of this report should be interpreted with consideration of several significant limitations. For example, the estimation method used for analyses was based on the assumption that most of, and only, military members with clinically significant, socially disruptive, or militarily relevant mental disorders were diagnosed with and treated for those disorders. However, barriers to care (e.g., perceived and de facto stigmas) and limitations to the availability of some clinically indicated mental health services (e.g., inadequate numbers and locations of providers) markedly changed over the period of interest of
this report. In turn, relationships between the numbers of military members in treatment for mental disorders and those with mental disorders for which treatments were indicated undoubtedly changed. As such, increasing proportions of military members in treatment for mental disorders over time reflect not only changes in the incidence of clinically significant mental disorders but also reductions of barriers and improvements in access to clinically indicated care. To the extent that the findings of this report reflect increases in mental health care for those in need, the increasing proportions of military members in treatment for mental disorders over time may portend improvements rather than decrements in the psychological health and military operational capabilities of the force.

Also, it should be acknowledged that, during the period of interest for this report, an unknown but likely large number of service members did not seek care for their mental disorders through the Military Health System. However, because of efforts to reduce stigmas and remove barriers to seeking mental health services, the proportions of affected service members who did seek or were referred (e.g., through mandatory deployment-related screening) for care through the Military Health System likely increased.7 As such, the temporal trends documented in this report reflect changes not only in the “true” incidence but also in the ascertainment of clinically significant mental disorders.

Also of note, some case-defining diagnostic codes that were reported in medical records may have documented screening, clinical evaluation (e.g., “rule out” diagnoses), or counselling sessions rather than clinical diagnostic or treatment sessions for case-defining disorders. To the extent that this occurred, the numbers and proportions of individuals diagnosed with and treated for mental disorders in this report overestimate the actual numbers and proportions of those affected and treated.

Additionally, it should be noted that some medical encounters documented with V-codes of the ICD-9-CM coding system were included if the code indicated psychological trauma (e.g., V15.4) or other psychological and physical stress (V62.x). However, not all V-coded medical encounters related to possible psychosocial and behavioral problems were included in this analysis. Previous MSMR analyses have provided a comprehensive overview of the nature and magnitude of other psychosocial problems documented with V-codes not considered in this report (e.g., partner relationship or family circumstances problems).3

Finally, for surveillance purposes, treatment courses were defined by initial mental disorder–specific encounters (i.e., first such encounters within 60 days) and all follow-up encounters that occurred within 60 days of a prior mental disorder–specific encounter. We are unaware of other estimates of the distributions of the numbers of encounters during or durations of mental disorder–specific treatment courses. As such, we had no useful referents for designing the analysis or assessing the results. Obviously, the findings of this analysis would vary if different criteria were used to define the beginnings and ends of treatment courses.

In summary, the findings of this report suggest that, even as the numbers of U.S. military members deployed in war zones and the scopes and intensities of combat activities have decreased, the numbers and proportions of U.S. military members in treatment for mental disorders have continued to increase. If access to care and awareness and concern among military leaders continue to increase, and if stigmas and other barriers to seeking care continue to decrease, then the numbers of military members diagnosed with mental disorders and the proportions of military members in treatment for mental disorders likely will continue to increase, even after warfighting ends.7

Of note, despite the increases in active component members in treatment for mental disorders, the estimated proportions of U.S. military members in treatment for mental disorders are much lower than the prevalences of mental disorders estimated in recent surveys. The findings reiterate the continuing needs for further reductions of stigmas associated with seeking or receiving mental health care, removals of barriers to accessing all clinically indicated mental health services, and increases in behavioral health resources for active military members.7 However, even if rates of diagnoses of mental disorders remain high or continue to increase after warfighting ends, it is unlikely that such a large proportion of the force will ever be in treatment for mental disorders that operational capabilities will be significantly degraded.

REFERENCES