Patterns of Care following Emergency Department Visits for Suicide Attempt by Active Duty Service Members and their Dependents

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Background

In December 2015, the Department of Defense (DoD) Strategy for Suicide Prevention (DSSP) became the DoD's "foundation and strategic point of reference for suicide prevention efforts". Several of DSSP's 60 objectives within 13 goals are regarding suicide-related care in Emergency Departments (EDs) [1]. Objective 8.8 aims to provide alternatives to ED care for patients at risk of suicide and to simultaneously ensure timely follow-up for these patients within the Military Health System's (MHS) outpatient mental health (MH) settings.

These analyses inform efforts to fulfill Objective 8.8 by establishing baseline patterns of care in Military Treatment Facilities (MTFs) following suicide-related ED visits among Active Duty Service Members (ADSMs) and their dependents. By describing trends in ED visits and subsequent patterns of follow-up care, these analyses support the Defense Health Agency's (DHA) work to continually improve suicide-related care and prevention in accordance with the DSSP.

Methods

Using the MHS Data Repository (MDR), which includes all administrative medical records for TRICARE beneficiaries, this study assessed MH care utilization following an ED visit with a suicide attempt diagnosis (International Classification of Diseases, Ninth Revision (ICD-9) code of "E95*") among ADSMs and their dependents from 2010 to 2015. ED visits were identified from both MTFs (direct care or DC) and civilian networks (purchased care or PC).

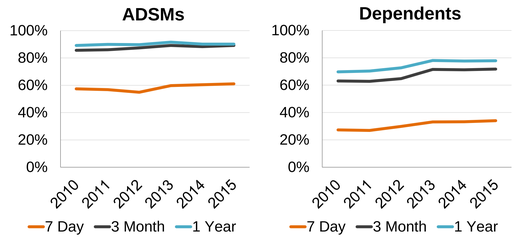
For cases, we examined demographics, suicide attempt method, and additional diagnoses. We then looked for patterns of utilization in the first 7 days [2], 3 months [3], and 12 months after each index encounter to examine: time to first MH care appointment; number and type of MH appointments; missed or cancelled MH appointments; recorded diagnoses; and time to psychiatric hospitalization, if any.

Additionally, to assess differences in patterns of care between groups, we compared time to first MH follow-up visit after an ED visit for a suicide attempt among ADSMs and their dependents. We also examined whether the environment in which an individual presents (direct vs. purchased care) with a suicide attempt affects time to first MH follow-up.

Results

Percent of Index Cases with a Follow-Up MH Outpatient Visit

Figure 2. Percent of Index Cases with a Follow-Up MH Outpatient Visit



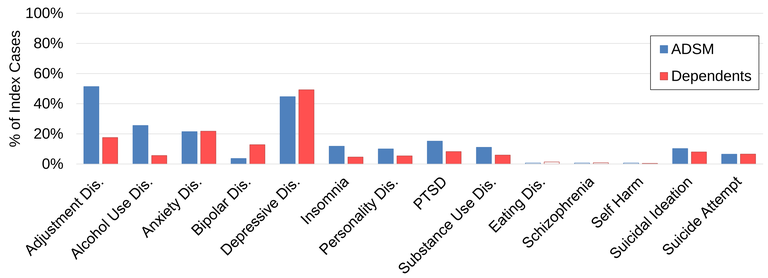
32%

The percentage of index cases who did not attend a MH appt. within 7 days but did attend a non-MH appt. within the same time frame, a "**missed opportunity**" for MH care

After an ED visit related to a suicide attempt, around 60% of ADSMs received outpatient mental health follow-up care within 7 days, compared to only 27-34% of their dependents. By 3 months after the index suicide attempt visit, almost 90% of ADSM cases had a MH follow-up.

Psychiatric Diagnoses within 3 Months

Figure 3. 2010-15 Index Cases with Psychiatric Diagnoses



Adjustment disorders (among ADSM) and depressive disorders were the most common conditions to be diagnosed during follow-up encounters. However, alcohol use disorders represented the highest rate of encounters per patients diagnosed (about 18 and 8 visits/patient for ADSM and dependents, respectively, not shown).

Among Patients with Follow-Up within 3 Months…

ADSMs

4.9 Days
Median time to first MH outpatient visit after index ED visit

25.5 Visits
Mean number of MH outpatient visits in 3 months following index ED visit

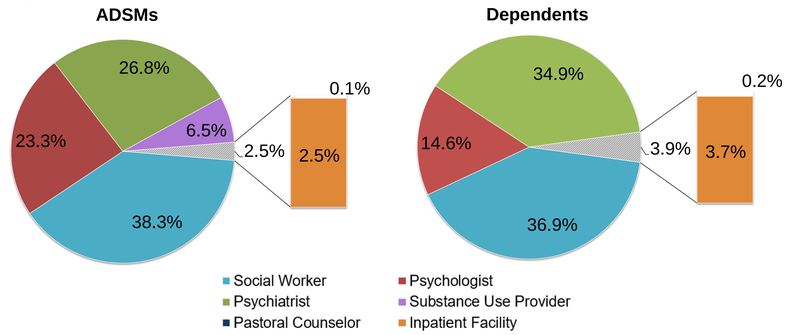
Dependents

8.5 Days
Median time to first MH outpatient visit after index ED visit

13.7 Visits
Mean number of MH outpatient visits in 3 months following index ED visit

Providers Seen at First MH Encounter

Figure 4. Provider Type at First MH Encounter within 3 Months, 2015 cases



Within MHS mental health clinics, psychiatrists make up about 16% of the workforce, but are the first point of contact for about 30% of patients after a ED visit related to a suicide attempt. Conversely, social workers and psychologists constitute a larger portion of the workforce – 46% and 38% respectively – but serve as the first point of contact for a smaller proportion of patients – about 37% and 19% respectively.

Results: Index Cases

The crude number of ED visits coded with a suicide attempt diagnosis (i.e., index cases) among ADSM and their dependents decreased from 2010 to 2015, falling from 4,363 in 2010 to 2,774 in 2015 (Figure 1). Index cases among dependents occurred in both purchased and direct care, whereas index cases among ADSM occurred primarily in direct care.

Figure 1. ED visits with a suicide attempt diagnosis

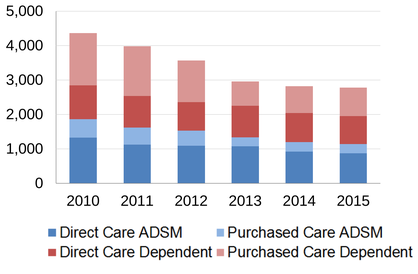


Table 1. Index Patient Demographics

	ADSMs (*N*=8,699)	Dependents (*N*=11,762)
Sex		
Male	6,307 (73%)	1,974 (17%)
Female	2,392 (27%)	9,788 (83%)
Race/Ethnicity		
NH-White	5,044 (58%)	862 (7%)
NH-Black	1,348 (15%)	271 (2%)
Asian	576 (7%)	118 (1%)
AI/AN	207 (2%)	37 (0%)
Other/UNK	441 (5%)	10,375 (88%)
Age Group		
≤17	24 (0%)	4,037 (34%)
18-34	7,975 (92%)	6,201 (53%)
35-64	700 (8%)	1,523 (13%)

The ADSM population overall is predominately young and male so the majority of the ADSM suicide attempt cohort also being male and in the 18-34 age group was expected given prior knowledge of the population. Conversely, among dependents, well over half (83%) of cases were female and of unknown race/ethnicity. In the US, adult females report a suicide attempt more often compared to their male counterparts, which is likely tied to suicide method [4].

Table 2. Diagnosed Suicide Attempt Method among Index Cases

Method	ADSMs (*N*=8,699)	Dependents (*N*=11,762)
ICD-9 Code, "Suicide and self-inflicted…"		
E950: "…poisoning by solid or liquid"	4,645 (53%)	7,799 (66%)
E956: "…injury by cutting and piercing instrument"	2,290 (26%)	2,735 (23%)
E958: "…injury by other and unspecified means"	996 (11%)	877 (7%)
E953: "…injury by hanging, strangulation, suffocation"	435 (5%)	243 (2%)
E955: "…injury by firearms, air guns, and explosives"	174 (2%)	44 (0%)
E952: "…poisoning by other gases & vapors"	72 (1%)	32 (0%)
E957: "…injuries by jumping from high place"	68 (1%)	27 (0%)
E954: "…injury by submersion, drowning"	16 (0%)	4 (0%)
E951: "…poisoning by gas in domestic use"	2 (0%)	1 (0%)

A breakdown of index suicide attempt cases by coded suicide method is provided in Table 2. For both ADSM and dependent cases, the most common suicide attempt method is poisoning by solid or liquid (53% and 66%, respectively), followed by injury by cutting and piercing instrument (26% and 23%) and injury by other unspecified means (11% and 7%). Lethality likely plays a role in which types of methods are seen most often in the ED. For example, suicide attempts by firearms (E955) or asphyxiation (E953) are coded very rarely among this cohort, potentially because these types of methods are more likely to result in suicide completion than poisoning [5].

Discussion

Through administrative medical data, we are able to assess suicide attempts and subsequent follow-up care among all TRICARE beneficiaries, not just ADSM, a key difference when compared to other DoD reporting tools [6]. Optimizing care among family members of ADSMs also impacts the health and therefore readiness of our service members.

Psychiatrists play a pivotal role in care provided to patients after a suicide attempt in the MHS, as they frequently serve as the first point of follow-up care for this cohort. Further analyses will assess the types of care that are provided by different provider types at first encounter post-suicide attempt.

Limitations:

In using administrative data, these analyses are limited to patients who engage in care after a suicide attempt, and furthermore, only encounters in which the ED clinician diagnoses a suicide attempt using a E95* ICD-9 code can be included in analysis. Patients not seeking care or not diagnosed cannot be captured.

Some index patients were admitted after their ED visit. We shifted the start date of the follow-up period to the discharge date of the first hospitalization for admitted patients. However, we did not account for second or third transfers, and therefore our start date would be premature in those cases and could impact observed follow-up rates (Figure 2).

References:

1. Department of Defense. (2015). *Department of Defense Strategy for Suicide Prevention*. Washington, DC: Department of Defense.
2. National Committee for Quality Assurance (2009). Follow-up After Hospitalization for Mental Illness. Available at: http://www.ncqa.org/portals/0/Follow-Up%20After%20Hospitalization%20for%20Mental%20Illness.pdf
3. Cooper, J., Kapur, N., Webb, R., Lawlor, M., Guthrie, E., Mackway-Jones, K., & Appleby, L. (2005). Suicide after deliberate self-harm: a 4-year cohort study. *American Journal of Psychiatry*, *162*(2), 297-303.
4. Canner, JK, et al. Emergency Department visits for attempted suicide and self-harm in the USA: 2006-2013 (2018). Epidemiol Psychiatr Sci. 2018 Feb;27(1):94-102.
5. Shenassa ED, Catlin SN, Buka SL (2003). Lethality of Firearms Relative to Other Suicide Methods: a Population Based Study. *J Epidemiol Community Health*. 2003;57:120-124.
6. DoD Suicide Event Report: Calendar Year 2015 Annual Report (2016). Department of Defense. Available at: http://t2health.dcoe.mil/programs/dodser

Poster presented at American Psychiatric Association Annual Meeting in May 2018. For more information, please contact jennifer.g.greenberg.ctr@mail.mil or zachary.peters3.ctr@mail.mil.