

Part II Evaluation of Medication Continuation for Servicemembers Transitioning from the Department of Defense Health Care System to the Department of Veterans Affairs Health Care System

**Department of Veterans Affairs' Pharmacy
Benefits Management Services**

1. Background

The Department of Veterans Affairs' (VA) Pharmacy Benefits Management Services (PBM) office repeated an analysis conducted in 2014 (https://www.pbm.va.gov/PBM/vacenterformedicationsafety/othervasafetyprojects/DoD_VA_Medication_Continuation_Report.pdf) as a pilot evaluation to assess the proportion of Department of Defense (DoD) Servicemembers who began to receive care from VA, who were dispensed medications for mental health and sleep disorders or opioids for pain management and who experienced a change in medication treatment. The results of the initial evaluation showed that only 3% of the evaluable cohort switched for administrative purposes and if extrapolated to the entire cohort of DoD Servicemembers who transitioned to VA, this represented approximately 1% of Servicemembers. Other factors identified in the 2014 analysis included identification of delayed utilization of the VA healthcare system for transitioning Servicemembers recently separated from DoD (> 6 months), latent changes of medications due to an extended period (>3 months) between initial VA presentation and continued longitudinal care secondary to Servicemember decision-making, outside care or other issues. In 2016, VA began a follow-up analysis to assess the impact of policy changes and staff education on medication prescribing patterns for transitioning Servicemembers.

2. Objective

The primary objective was to determine the proportion of Servicemembers prescribed medications for mental health and sleep disorders or opioids for pain management who experienced a change in medication treatment versus no change in treatment after separation from DoD and seeking care from the VA. A secondary objective was to assess the reason (clinical vs. administrative) for any change in therapy, when it occurred and to evaluate the clinical outcomes.

3. Methods

3.1 Data Sources

Prescription Data

DoD prescription data was obtained through a direct transfer of the administrative Rx file from DoD to VA.

VA prescription data was obtained from the Pharmacy Benefits Management Services (PBM) prescription database.

Diagnosis and Mortality Data

The DoD provided diagnosis data for the newly transitioned Servicemembers and VA administrative databases were used to capture diagnosis and mortality data for the Servicemember cohort once they were under VA care. All mental health and pain diagnosis data were obtained for each Servicemember utilizing ICD-9 codes for anxiety disorder, bipolar disorder, depression, pain, post-traumatic stress disorder (PTSD) and schizophrenia. Mortality

(including date of death) for VA Servicemembers was determined for all Servicemembers using the Vital Status File (VSS). Servicemember age and gender was determined using the PBM demographic file which is developed from the VSS and the National Patient Care Database.

3.2 Servicemember Cohort

Identification of Cohort: New Transfers from DoD to VA

Newly transitioning Servicemembers with a first-time VA healthcare visit for any reason during fiscal year 2014 through the middle of fiscal year 2015 (10/1/13-3/31/15) were identified through the Operation Enduring Freedom-Operation Iraqi Freedom and Operation New Dawn (OEF/OIF/OND) Roster. Servicemembers with at least one VA prescription in FY 14 and FY 15 were then chosen, and from that cohort, newly enrolled Servicemembers receiving medications used to treat mental health and sleep disorders or pain were further identified (N=17,015). A random sample of 5,000 Servicemembers was chosen from this cohort of 17,015 and sent to DoD to match with the same time period.

As in the 2014 pilot evaluation, this cohort of newly transitioning Servicemembers who were dispensed mental health, sleep or pain medications by VA was then provided to DoD. The DoD identified, matched and transferred to the VA project team 1,503 records for Servicemembers with prescriptions and diagnosis data for the cohort that separated from DoD from FY 2014 through March 31, 2015.

A series of data translations and validations were conducted to translate the DoD prescription file into the VA file structure to allow DoD prescriptions to be accurately identified and merged with VA data for assessment. For seventy-one Servicemembers, DoD national drug codes (NDC) did not match to a VA product name following the series of translations, leaving 1,432 DoD Servicemembers available for the initial assessment.

Construction of Final Sample: Inclusion and Exclusion Criteria

To be included in the final sample for analysis, Servicemembers in the pilot cohort were required to have active DoD mental health, sleep or opioid prescriptions at the time of DoD separation. In this step, a prescription was considered to be active if there was at least one day of therapy in the immediate month prior to separation from DoD (N=1,235). Exclusion criteria consisted of the following: no active Rx for medications used to treat mental health disorders, sleep disorders or pain, delayed users of the VA healthcare system, no evaluable mental health, sleep or pain medications within the first 90 days in VA.

The final sample consisted of 318 Servicemembers after applying inclusion and exclusion criteria.

3.3 Identification of Changes in Therapy

1. No Change in Therapy – Prescription patterns were evaluated using the prescription database for the first 90 days following the first clinical VA visit date. Servicemembers were classified as having no change in treatment if all DoD active prescriptions were continued in

VA; that is, there was no change in the number or drug names of the DoD prescriptions (N=64). Servicemembers were further classified as no change in therapy using an intermediate database assessment if there was no change in the specific DoD prescriptions after further review [i.e. another medication was added by VA but the DoD medications were continued (N=76)]. The total number of Servicemembers with no change in therapy following database assessments was 140.

2. Potential Change in Therapy – A total of 178 Servicemembers were identified via database assessments to have a potential change in therapy, either a switch or a discontinuation, and a full chart review was required to determine if a change did in fact occur.

Chart Review – A comprehensive chart review was conducted for each of the 178 Servicemembers identified with a suspected change in treatment with each of their prescriptions identified as a suspected switch or discontinuation assessed.

For each suspected switch, the review included confirmation of whether a switch occurred and if so, the VA medication to which the Servicemember was switched and the reason for any confirmed switches. For each suspected discontinuation, the review included confirmation of the discontinuation and evaluation of the associated reason for the discontinuation. The reason for each switch and discontinuation was classified as one of the following: 1) administrative: a) a switch from a non-formulary to formulary drug; b) the drug was no longer commercially available or was on backorder; c) the drug was recalled and d) no reason was documented, or 2) clinical: a) a switch due to a contraindication; b) therapy failure/change; c) unwanted side effect, adverse effect, allergy, comorbidity and c) an effort to follow evidence-based clinical practice guidelines; d) Servicemember preference or e) provider preference.

For all Servicemembers with a confirmed change in therapy, the following outcomes were assessed: hospitalization and the associated primary diagnosis (mental health (MH) or other), and emergency department (ED) visit and the associated primary diagnosis (mental health or other). For each hospitalization and ED visit, the reviewer determined whether the hospitalization or ED visit was due to a worsening MH, sleep disorder or pain condition as confirmed by the primary diagnosis in the chart review.

4. Results

4.1 Overview of Findings

Appendix I provides an overview of the evaluation, including the number of Servicemembers from the initial Servicemember cohort of 1,503 who met inclusion/exclusion criteria and proceeded to the Database and the Chart Review, as well as the number of Servicemembers identified with either no change in therapy or a confirmed change in therapy.

4.2 Characteristics of the Final Sample

A total of 318 of the 1,503 Servicemembers were evaluable based on the inclusion and exclusion criteria and were included in the final sample. As shown in Table 1, approximately 81% were male, with a mean age of 36 years (SD=9.0). Approximately 74% and 75% of Servicemembers had a diagnosis of a mental health condition or pain, respectively, as identified by DoD data.

Table 1. Characteristics of All Evaluable Servicemembers Included in Final Sample (N=318)

Characteristics	N (%) or Mean (SD)
Age (years)	35.8 (9.0)
Gender (Male)	256 (80.5%)
Pertinent diagnosis	
Anxiety	116 (36.5%)
Bipolar	22 (6.9%)
Depression	146 (45.9%)
PTSD	144 (45.3%)
Schizophrenia	0 (0%)
Any mental health diagnosis	236 (74.2%)
Pain	241 (75.8%)
All-Cause Mortality	2 (0.6%)
Patterns of VA RX utilization (1 st 90 days)	
No Change in Therapy (Initial Database Assessment)	64 (20.1%)
No Change in Therapy/Intermediate Database Assessment	76 (23.9%)
Potential Change in Therapy	178 (56.0%)

4.3 Characteristics of Suspected Switches and Discontinuations

The chart review was conducted on 178 Servicemembers (See Appendix I) with a suspected switch or discontinuation in therapy. The chart review revealed that 30 (16.9%) Servicemembers actually continued therapy through extended DoD prescriptions or prescriptions from outside VA. Thirty-four (19.1%) of the 178 Servicemembers experienced a switch in therapy. Among those 34 Servicemembers, 7 of 34 (20.6%) switched for administrative reasons, 6 of 34 (17.6%) had a latent switch (delay between initial visit and second visit where the provider initiated a new Rx) and 21 of 34 (61.8%) switched for clinical reasons. Ninety-four (52.8%) of the 178 Servicemembers discontinued therapy. Among the 94 who discontinued therapy, 65 of 94 (69.1%) had short term/acute prescriptions that were completed prior to leaving DoD and were not evaluated for reasons for discontinuation, 2 of 94 (2.1%) were categorized as an administrative discontinuation since there was no reason listed for discontinuation and 27 of 94 (28.7%) were discontinued for clinical reasons.

Table 2 reflects the types of changes in therapy confirmed via chart review conducted on the 178 Servicemembers with a suspected change in therapy.

Table 2. Types of changes in Servicemembers identified in the database assessment (N=178)

Type of Changes	N*	%
Switch	34	19.1%
Administrative	7	3.9%
Clinical	21	11.8%
Latent	6	3.4%
Discontinuation –	94	52.8%
Short Term/Acute Therapy in DoD (Not evaluable)	65	36.5%
Clinical	27	15.2%
Administrative	2	1.1%
No Switch – No Discontinuation Continued (through extended DoD/Outside or VA Rx)	30	16.9%

***Unevaluable – 20 (11.2%) Servicemembers with medications that were unevaluable due to insufficient medication information.**

4.4 Comparison of Servicemember Characteristics by Therapy Change Status

Table 3 compares characteristics of Servicemembers who were identified in the Database assessments as having no change in therapy (N=140) versus those with potential change in therapy via chart review (N=178). Those Servicemembers who had any change in therapy appeared to have more mental health, sleep and pain medications while in DoD compared to those with no change in therapy.

Table 3. Comparisons of characteristics between Servicemembers with no change in therapy vs. Servicemembers with Potential Change in Therapy (Chart Review Servicemembers; N=178)

Characteristics	No Change in Therapy Database Assessment; N= 140	Potential Change in Therapy** Chart Review Servicemembers; N=178	P-value
Age (years)			
Mean (SD)	36.6 (8.8)	35.2 (9.1)	0.169
Gender (n, %)			
Male	116 (82.9%)	140 (78.7%)	0.347
Pertinent diagnosis (n, %)			
Anxiety	51 (36.4%)	65 (36.5%)	0.987
Bipolar	11 (7.9%)	11 (6.2%)	0.559
depression	57 (40.7%)	89 (50.0%)	0.099
PTSD	53 (37.9%)	91 (51.1%)	0.018
Schizophrenia	0 (0%)	0 (0%)	NA
Any mental health condition	98 (70.0%)	138 (77.5%)	0.128
Pain	105 (75.0%)	136 (76.4%)	0.772

Number of DoD mental health drugs** (Active) Mean (SD) Median (IQR)	1.6 (0.9) 1 (1, 2)	2.2 (1.3) 2 (1, 3)	<.0001
Number of DoD opioids (Active) Mean (SD), Median (IQR)	1.1 (0.4) 1 (1, 1)	1.5 (0.7) 1 (1, 2)	0.0003
Number of VA mental health drugs** after first VA clinical visit Mean (SD) Median (IQR)	2.3 (1.3) 2 (1, 3)	2.1 (1.4) 2 (1, 3)	0.455
Number of VA opioids after first VA clinical visit Mean (SD) Median (IQR)	1.5 (0.6) 1 (1, 2)	1.3 (0.6) 1 (1, 2)	0.240

*Discontinue and Switch Servicemembers

#30 Servicemembers identified in database as a possible change in therapy actually continued therapy per chart review.

**includes sleep medications

Change in therapy was compared (Table 4).

Similar results were observed when Servicemember characteristics between no change in therapy including those added as continued therapy through chart review and change in therapy. Differences occurred with age which was significantly younger in the change in therapy group, and burden of any mental health illness, which was significantly higher in the change in therapy group.

Table 4. Comparisons of characteristics between Servicemembers with no change in therapy versus an immediate change in therapy. [(combined chart review (CR) and database assessment(DA)]

Characteristics	No Change in Therapy Database assessment and Chart Review; N= 170 (140DA+30CR)	Change in Therapy* Chart Review Servicemembers; N=63 (34SW + 29DC)	P-value
Age (years) Mean (SD)	36.6 (8.9)	32.3 (8.2)	0.0009
Gender (n, %) Male	140 (82.4%)	52 (82.5%)	1.000
Pertinent diagnosis (n, %) Anxiety	61 (35.9%)	24 (38.1%)	0.761
Bipolar	12 (7.1%)	5 (7.9%)	0.782
depression	73 (42.9%)	36 (57.1%)	0.057
PTSD	66 (38.8%)	33 (52.4%)	0.074
Schizophrenia	0 (0%)	0 (0%)	NA

Any mental health condition ⁺	119 (70.0%)	52 (82.5%)	0.066
Pain	129 (75.9%)	49 (77.8%)	0.863
Number of DoD mental health drugs**			
Mean (SD)	1.7 (0.9)	2.4 (1.4)	0.0003
Median (IQR)	1 (1, 2)	2 (1, 3)	
Number of DoD opioids			
Mean (SD),	1.2 (0.4)	1.6 (0.7)	0.002
Median (IQR)	1 (1, 1)	1 (1, 2)	
Number of VA mental health after first VA clinic visit			
Mean (SD)	2.3 (1.4)	2.4 (1.7)	0.569
Median (IQR)	2 (1, 3)	2 (1, 3)	
Number of VA opioids after first VA clinic visit			
Mean (SD)	1.5 (0.6)	1.4 (0.7)	0.428
Median (IQR)	1 (1, 2)	1 (1, 2)	

*actual change switch (SW) or confirmed discontinuation (DC) in VA

⁺includes sleep disorders

^{**}includes sleep medications

No differences in demographics in mental health and opioid drug switches were observed between administrative versus clinical reasons (Table 5).

Table 5. Comparison of characteristics of Servicemembers receiving a therapy switch for administrative versus clinical reasons.

Characteristics	Admin-SW (N=7) N (%) or mean (SD)	Clinical-SW (N=21) N(%) or mean (SD)	Latent –SW (N=6) N(%) or mean (SD)	P-value
Age (years)	34 (5.70)	31.5 (8.35)	38.8 (8.2)	0.144
Gender (Male)	7(100%)	17 (81%)	5 (83%)	0.463
Mental health drugs** switched Number of Servicemembers	5(71.4%)	17 (81%)	3* (75%)	0.859
Opioid drugs switched Number of Servicemembers	2(28.6%)	4 (19.1%)	1* (25%)	0.859

*2 pts latent switchers / non DoD info ** includes sleep medications

There was a significant difference in age and number of drugs for those who had their medications discontinued clinically versus those who had an administrative discontinuation.

Table 5A. Comparison of characteristics of Servicemembers discontinuing for administrative versus clinical reasons.

Characteristics	Admin-DC (N=2) N (%) or mean (SD)	Clinical-DC (N=27) N(%) or mean (SD)	P-value
Age (years)	45.5 (0.7)	31.6 (7.6)	0.017
Gender (Male)	2 (100%)	21 (77.8%)	0.454
Mental health drugs switched**	0 (0%)	23* (85.2%)	0.037
Opioid drugs switched	2 (100%)	6* (22.2%)	0.069

*2 pts in each MH & OPI group (for discontinued-clinical)

** includes sleep medications

4.5 Outcomes after Therapy Changes

Table 6 presents data on hospitalizations and ED visits for Servicemembers identified as having no change in therapy versus those confirmed in the chart review as having an administrative switch in drug therapy. Although there was a higher rate of ED visits in the administrative switch group, it was not significant and through chart review, it was confirmed that the majority of ED visits did not have a primary diagnosis of a mental health condition and therefore were not secondary to the Servicemember' change in therapy (see Table 6).

Table 6. Outcome evaluation for Servicemembers with no change in therapy versus those with administrative switches.

Outcomes	No Change in Therapy (N=170) N (%) or mean (SD)	Servicemembers with Administrative Switches (N=7) N (%) or mean (SD)	P- value
Hospitalization	12 (7.1%)	0 (0%)	1.000
Primary diagnosis for first 1st hospitalization			
Mental health ⁺	5 (2.9%)	0 (0%)	1.000
Other	7 (4.1%)	0 (0%)	1.000
Duration to first hospitalization (days)			
Mean (SD)	115.8 (86.7)	NA	
Median(IQR)	101 (51.5, 197)	NA	NA
ED visits	53 (31.2%)	2 (28.6%)	1.000
Primary diagnoses for 1st ED visit[#]			
Mental health	8 (4.7%)	1 (14.3%)	0.311
Other	45 (26.5%)	1 (14.3%)	0.678
Duration to 1st ED visit (days)			
Mean (SD)	63.8 (86.4)	115.5 (163.3)	0.421
Median(IQR)	21 (0, 105)	115.5 (0, 231)	

⁺includes sleep disorders

[#]chart review confirmed 1 of 4 Servicemembers had an ED visit due to MH dx

Table 6A presents data on hospitalizations and ED visits for Servicemembers identified as having no change in therapy versus those confirmed in the chart review as having an administrative discontinuation. There were no hospitalizations or ED visits identified, perhaps due to the small number of administrative changes that occurred.

Table 6A. Outcome evaluation for Servicemembers with no change in therapy versus those with administrative discontinuations.

Outcomes	No Change in Therapy (N=170) N (%) or mean (SD)	Servicemembers with Administrative Discontinuations (N=2) N (%) or mean (SD)	P-value
Hospitalization	12 (7.1%)	0 (0%)	1.000
Primary diagnosis for first hospitalization			
Mental health	5 (2.9%)	0 (0%)	1.000
Other	7 (4.1%)	0 (0%)	1.000
Duration to first hospitalization (days)			
Mean (SD)	115.8 (86.7)		NA
Median(IQR)	101 (51.5, 197)		
ED visits	53 (31.2%)	0 (0%)	1.000
Primary diagnoses for 1st ED visit⁺			
Mental health	8 (4.7%)	0 (0%)	1.000
Other	45 (26.5%)	0 (0%)	1.000
Duration to 1st ED visit (days)			
Mean (SD)	63.8 (86.4)		NA
Median(IQR)	21 (0, 105)		

Table 6B represents no change in therapy vs any administrative change (switch or discontinuation combined). No differences were seen between the two groups.

Table 6B. Outcome evaluation for Servicemembers with no change in therapy versus those with administrative changes

Outcomes	No Change in Therapy (N=170) N (%) or mean (SD)	Servicemembers with Administrative Changes (N=9) N (%) or mean (SD)	P-value
Hospitalization	12 (7.1%)	0 (0%)	1.000
Primary diagnosis for first hospitalization			
Mental health	5 (2.9%)	0 (0%)	1.000
Other	7 (4.1%)	0 (0%)	1.000
Duration to first hospitalization (days)			
Mean (SD)	115.8 (86.7)	NA	NA
Median(IQR)	101 (51.5, 197)	NA	
ED visits	52 (30.8%)	4 (36.4%)	0.698
Primary diagnoses for 1st ED visit⁺			
Mental health	8 (4.7%)	1 (11.1%)	0.378
Other	45 (26.5%)	1 (11.1%)	0.451
Duration to 1st ED visit (days)			
Mean (SD)	63.8 (86.4)	115.5 (163.3)	0.421
Median(IQR)	21 (0, 105)	115.5 (0,231)	

There were no differences in hospitalizations and ED visits for Servicemembers with administrative versus clinical switches, (see Table 7), administrative versus clinical discontinuation (see Table 7A) or combined administrative vs combined changes (see Table 7B).

Table 7. Outcome evaluation for Servicemembers with administrative versus clinical switches.

Outcomes	Administrative (N=7)	Clinical (N=21)	P-value
Number of Servicemembers with a hospitalization due to switch	0 (0%)	3 (14.3%)	0.551
Primary diagnosis for hospitalization			
Mental health ⁺	0 (0%)	1 (4.8%)	1.000
Other	0 (0%)	2 (9.5%)	1.000
Number of Servicemembers with an ED visit due to switch	2 (28.6%)	9 (42.9%)	0.668
Primary diagnosis for ED visit			
Mental health	1 (14.3%)	1 (4.8%)	0.444
Other	1 (14.3%)	8 (38.1%)	0.372

⁺includes sleep disorders

Table 7A. Outcome evaluation for Servicemembers with administrative versus clinical discontinuations.

Outcomes	Administrative (N=2)	Clinical (N=27)	P-value
Number of Servicemembers with a hospitalization due to switch	0 (0%)	1 (3.7%)	1.000
Primary diagnosis for hospitalization			
Mental health	0 (0%)	1 (3.7%)	1.000
Other	0 (0%)	0 (0%)	NA
Number of Servicemembers with an ED visit due to switch	0 (0%)	9 (33.3%)	1.000
Primary diagnosis for ED visit			
Mental health	0 (0%)	4 (14.8%)	1.000
Other	0 (0%)	5 (18.5%)	1.000

Table 7B. Outcome evaluation for Servicemembers with administrative versus clinical changes.

Outcomes	Administrative (N=9)	Clinical (N=48)	P-value
Number of Servicemembers with a hospitalization	0 (0%)	4 (8.3%)	1.000
Primary diagnosis for hospitalization			
Mental health	0 (0%)	2 (4.2%)	1.000
Other	0 (0%)	2 (4.2%)	1.000
Number of Servicemembers with an ED visit	2 (22.2%)	18 (37.5%)	0.470
Primary diagnosis for ED visit			
Mental health	1 (11.1%)	5 (10.4%)	1.000
Other	1 (11.1%)	13 (27.1%)	0.427

5. Summary and Conclusions

A sample of 5,000 VA Servicemembers who were treated with mental health, sleep or pain medications (between October 1, 2013 – September 30, 2015) were randomly selected by VA and the DoD identified, matched and transferred to the VA 1503 Servicemembers records for Servicemembers who separated from DoD from FY 2014 through March 31, 2015. Of the matched Servicemembers, 318 (21.1%) met inclusion and exclusion criteria for having proper translation of NDCs to VA product names, having timely and complete transfer of care from DoD, and having active mental health, sleep or pain medications at the time of DoD separation, and thus were included for full evaluation.

Of the 318 evaluable Servicemembers, 140 were classified as continued therapy and 178 Servicemembers were considered a potential change in therapy in first 90 days of VA services. A chart evaluation conducted on those 178 Servicemembers who potentially changed therapy confirmed that 34 (19.1%) switched therapy and 94 (52.8%) discontinued therapy. Of the 34 switched Servicemembers, 7 were due to administrative reasons and 21 were due to clinical reasons. Thus, approximately 2.2% (7/318) of evaluable Servicemembers switched therapy for administrative reasons. When applied to the cohort of DoD Servicemembers who transitioned their care from DoD to VA, this represented approximately 0.5% of Servicemembers (7/1,503). For the discontinued Servicemembers, only 2 were due to administrative reasons and 27 were due to clinical reasons. Thus less than 1% (2/318) of evaluable Servicemembers were discontinued for administrative reasons.

Based on this evaluation, it is estimated that 385 of the approximately 17,000 Servicemembers newly enrolled in VA who were dispensed mental health, sleep or pain management drugs by DoD would be expected to have their medications switched by VA. Only 79 of the 17,000 Servicemembers would be expected to have a change due to administrative reasons. It is important to note that there were no hospitalizations associated with administrative changes and only 1 ED visit for mental health conditions associated with an administrative change, hence for the 17,000 transitioning Servicemembers, 11 would be expected to have an ED visit for a mental health condition.

This extended pilot analysis validates the initial pilot project and demonstrates that newly transitioning Servicemembers who were dispensed mental health, sleep, or pain medications by DoD are not generally switched for administrative reasons. It is important to note that the VA policies to continue medication therapy for vulnerable populations transitioning from DoD to VA was disseminated in 2014. The positive result of the policy change and VA's educational efforts is evident in this analysis; the administrative switches, although already low in the initial project were decreased by an additional 55% in the current evaluation underscoring VA's commitment to its long-standing practice of continuing medications for transitioning Servicemembers.

Appendix I

SUMMARY OF FINAL PATIENT COHORT

