

Preliminary Evidence on the Effectiveness of Embedded Behavioral Health

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Introduction

The high operational tempo of the Army during the last fourteen years generated a volume and complexity of care requirements that far exceeded the existing care capacity. Between 2000 and 2011, annual counts and rates of incident diagnoses of mental disorders in the Department of Defense rose by 65% (1), and mental disorder related hospitalizations of service members increased monotonically from 2006 to 2011 (2). This increase in demand surfaced emergent issues such as lack of access to behavioral health services (3-5), the need for better capacity planning (6, 7), and the need to ensure continuity of care as Soldiers moved from one installation to the next in their planned rotations (8).

Embedded Behavioral Health (EBH) is one of the twelve standard clinical microsystems within the integrated behavioral healthcare system (9) in Army military treatment facilities. EBH moves specialty services from a centralized hospital into satellite clinics aligned to operational units, and geographically positioned to be within walking distance of a Soldiers' workplace. The standardized model consists of a 14 member multi-disciplinary team that includes a prescriber, seven psychotherapists, a nurse case manager, two behavioral health technicians/social service assistants, and two front desk personnel. The model was developed with three goals in mind: a) improve access to care for Soldiers in the EBH clinic catchment area; b) Improve mission readiness of the aligned units; c)

Shape the occupational environment to enhance recovery. Even though EBH was directed for implementation across the Army on Jan 22, 2012, there have been few studies focused on the effectiveness of the model. In this paper we examine the impact EBH implementation at one Army installation, called Site Alpha.

We adopted a multi-method approach that included quantitative analysis of administrative healthcare data and longitudinal field research at Site Alpha. The de-identified data from the Military Health System data mart (10) includes all healthcare encounters in Army behavioral health clinics, as well as care sourced from the purchased care community around Site Alpha. This data set included encounter date, diagnoses, care procedures, provider type, clinic type, and anonymized provider and patient identifiers. These data enabled us to establish the baseline performance of the system of care, and quantitatively examine the impact of EBH implementation on care delivery at Site Alpha.

We visited Site Alpha three times during the EBH roll out, with the first visit in 2011, and subsequent visits in mid 2012, and early 2014. During these week-long visits, we conducted interviews and focus groups with all implemented EBH teams, multi-disciplinary clinic providers, primary care providers, screening teams, command teams (company, battalion, and brigade levels), other support agencies (chaplains, substance use care, other installation services). These field visits provided a rich understanding of the evolving system of care at Site Alpha, and provided qualitative insights into the effects of EBH implementation.

Improve Soldier Access to Care

EBH shifts care delivery from a hospital-centered, disciplinary-based approach to a distributed model that leverages multi-disciplinary clinics located within walking-distance of a Soldiers workplace. Moving care closer to the workplace is expected to create care ownership as Soldiers within the catchment area of an EBH clinic access services through their assigned clinic. EBH is also expected to increase service utilization as the travel burden to receive care is significantly reduced.

We identified all Soldiers who received services in a behavioral health clinic (including deployment related screenings) at Site Alpha in the FY 2010 – FY 2013 timeframe. Soldiers were clustered into two groups: non-EBH Soldiers and EBH Soldiers depending on whether a Soldier had at least 1 encounter in an EBH clinic. There were 27,136 Soldiers who fell into the non-EBH category, and 11,952 Soldiers who fell into the EBH category. The data (Figure 1) show that the number of Soldiers entering care through non-EBH clinics dropped from 2,180 unique Soldiers in March 2011 (the first month of the implementation), to 397 unique Soldiers the following year, to 229 Soldiers in March 2013. When the number of encounters in Non-EBH clinics is compared to the total number of encounters after enrolling in an EBH clinic, the rate has fallen from 9.1% of total encounters for EBH Soldiers in March 2012 to 1.4% at the end of FY 2013. This evidence strongly supports the idea that EBH serves as a consistent point of entry into mental healthcare.

7,626 of the 27,136 non EBH Soldiers (28.1%) received 3 or more encounters in the analysis time period, and accounted for 131,680 encounters. In comparison, 10,272 of the 11, 952 EBH Soldiers (85.9%) had 3 or more encounters in the same

timeframe, and accounted for 227,784 encounters. EBH Soldiers in total use more care than Non-EBH Soldiers (22.2 encounters to 17.3 encounters). Care for EBH Soldiers is also provided in non-EBH clinics (Figure 2) that provide higher-level services such as neuropsychological testing and intensive outpatient care. Encounters per provider per month in EBH and non-EBH clinics are comparable at 58 encounters to 63 encounters.

In our interviews both EBH providers and command teams highlighted the availability of consistent *walk-in* appointments in EBH clinics as integral to improving access to care. The data show that in the last six months of FY 2013, EBH Soldiers used *walk-in* appointments for 31.6% of their encounters in EBH clinics, and for 54.1% of their encounters in non-EBH clinics. Non-EBH Soldiers on the other hand used *walk-in* appointments for 58.3% of their visits. Once Soldiers and command teams knew *walk-in* care was consistently available, use of those appointments dropped significantly, and Soldier's started using them when they were in crisis. We observed some providers using *walk-in* appointments as a means of maintaining care continuity for Soldiers they considered to be at high-risk for adverse outcomes, but they appointments were corrected to be scheduled appointments. There are known data quality issues in appointment types, for instance, all case management for Soldiers in a warrior transition unit were classified as *walk-ins*.

Accessing care sourced through the purchased care network is challenging as Soldiers are away from their duty stations for longer periods of time. It also creates a potential information void because community providers are not required to

routinely share information with the Military Treatment Facility. We examined purchased care utilization for all Soldiers at Site Alpha. The data show (Figure 3) that Soldiers assigned to EBH clinics do not directly access purchased care services before enrollment in the EBH clinic. Purchased care utilization by non-EBH Soldiers has declined over time as Site Alpha focused on provided care in the direct care system. While the number of unique EBH Soldiers using purchased care is higher than non-EBH Soldiers (211 to 127 in the last month of FY 2013), the utilization on a per-enrolled soldier basis is higher. The data also show a unique population of about 100 Soldiers who only access services in the purchased care network.

Increase Mission-Readiness for Aligned Units

The known disconnect between behavioral health providers and command teams prompted an all Army communication (11) by the Vice Chief of Staff of the Army (the second most senior officer) on the importance of sharing protected health information. This disconnect was rooted in two factors: command teams not knowing which provider to talk to; and command teams discovering Soldier deployment limitations late in the deployment cycle. The latter was further exacerbated by multiple agencies inherent to military medicine (12), and the civilianization of the behavioral health workforce (13). EBH pilot efforts had been shown to address the former, as one brigade commander noted, *“mine was the only brigade that deployed at 98% - it was unheard of at that time, and it only happened because we had a version of EBH and there were no surprises before deployment.”*

The EBH model defines alignment between providers and command teams at both the brigade and battalion levels. The EBH team lead serves as point-of-contact for the brigade, while the psychotherapist aligned to the battalion(s) serves as the point-of-contact for all command teams within their battalion(s). This creates a shared context between command teams and providers that allows providers to understand the occupational stressors of their Soldiers, and allows command teams to reach out to a specific provider to get information regarding the Soldier. EBH providers retain institutional knowledge about their Soldiers, and can extend care into the deployed environment. In Site Alpha, we observed a bi-monthly case management/treatment planning call between the EBH team lead (who was in the United States), and deployed mental health team (14). In this meeting the EBH team lead was able share historical information on the Soldier's care with the deployed providers, and shape the decision on whether to send that Soldier back to the United States. This also ensured that no Soldiers were lost in the handoff between the deployed environment and Site Alpha, similar to the experience in Joint Base Lewis McChord (15).

The Department of Defense mandated pre-deployment and post-deployment health assessments (16) are carried out by primary care providers and when needed, behavioral health providers. Primary care providers direct Soldiers to first-level behavioral health assessment based Soldier self-identification in the screening instrument, and in addition based on their interactions with the Soldier. The first-level behavioral health screenings are carried out by an independent group of providers. The typical workflow is for these providers to identify any deployment

limiting conditions, and establishing a follow up appointment in the hospital. Site Alpha is unique in that EBH providers are on-site during screening to provide second-level screening services. This shortens the time between screening-based identification and enrollment into care. It also enables providers to educate command teams on the behavioral health impact on readiness. This alignment has also enabled better collaboration between command teams and providers. For instance providers noted that they would call a command team and let them know they have identified the Soldier as having a deployment limiting condition, rather than rely on an informal automated process.

Inpatient admissions significantly impact mission readiness, as the Soldier is away from their duty station for sustained periods of time. We examined inpatient admissions, lengths of stay and follow-up after psychiatric admission of EBH Soldiers and non-EBH Soldiers. The data show that in the analysis time period there were 1,827 admissions for 1,162 EBH Soldiers accounting for a total of 17,721 bed days. In comparison, there were 432 admissions for 294 non-EBH Soldiers accounting for a total of 4,666 bed days. The use of inpatient care peaked at the end of the second year of EBH implementation at 78 admissions in Aug 2012, and has since declined to an average of 47 admissions a month in the final year. The average length of stay per admission for EBH Soldiers was shorter than non-EBH Soldiers (9.7 days versus 10.8 days). There was a significant difference between follow up within 7 days of psychiatric discharge in EBH clinics versus Non-EBH clinics for mental health related admissions (90% versus 71%). Only 22 EBH Soldiers were not followed up with 30 days, as opposed to 69 non-EBH Soldiers.

The field research identified the unique patient flow during mandatory screenings and alignment between providers and command teams as qualitatively contributing to increased mission readiness. The inpatient utilization data suggest that more step-up and step-down services may be required to support the needs of EBH Soldiers.

Shaping the Occupational Environment to Promote Recovery

EBH teams use two strategies to shape the occupational environment for Soldiers in their care: providers establish sustained relationships with command teams; and the EBH team appropriately shares information with clinical and non-clinical stakeholders engaged in providing services for the aligned unit. The first strategy is predicated on providers staying in their roles for a sustained period of time. The second strategy is dependent on the existence and use of appropriate forums for clinical and non-clinical stakeholders to work together.

Building Sustained Support Relationships

EBH requires providers to perform non-clinical care roles such as command consultation and administrative evaluations. In our field research providers and clinic chiefs noted that hiring process focused on clinical competence of the provider, and providers who were not comfortable in carrying out these additional roles in EBH clinics requested reassignment to other clinics, or left government service all together. We examined personnel attrition rates at Site Alpha between FY 2010 and FY 2013 in both EBH and non-EBH clinics. We included all privileged providers (psychiatrists, psychologists, psychiatric nurse practitioners, social work case managers), as well as mental health nurses and nurse case managers (to account

for known position classification errors in the data) in the analysis all of these actors may have a command-engagement role. Anyone who provided more than 1 encounter in an EBH clinic (recorded their care in a BFD4 MEPRS code) was included in the EBH cohort. Attrition was said to occur if the person no longer provided services in an EBH clinic or did not provide care at Site Alpha (including planned rotation of military personnel).

Non-EBH provider strength shrank from a peak of 89 providers in March 2011 to 59 providers by the end of FY 2013. This non-EBH provider strength count does not include the 40 providers who moved from non-EBH clinics to EBH clinics. Of the 70 providers (of the total of 129 providers) who left Site Alpha, 14 left in the first 100 days, and an additional 28 providers left in the first year. The year-over-year attrition rate in non-EBH clinics dropped from 29.4% in FY 2010 to 22.4% in FY 2013. As EBH was rolled out at Site Alpha starting in March 2011, EBH provider strength grew from 5 providers in that month to 41 providers in March of the following year as shown in Figure 1. This cohort includes providers from all five EBH teams. When we examined when the 36 providers left EBH clinics, 9 left in the first 100 days, and another 9 left within the first year of joining an EBH clinic. The attrition rate grew from 10% in FY 2010 to 31.1% in FY 2013. This increase in year-over-year attrition is concerning because new providers now have to reestablish the direct support relationships with command teams.

Creating Shared Situational Awareness

The EBH model has defined two meetings that bring together key clinical stakeholders to develop and sustain a common clinical operating picture: the daily

standup, and the multi-disciplinary treatment planning meeting. The morning standup meeting involves the whole EBH team and focuses on managing clinical care transitions such as release from inpatient care, or follow up from an Emergency Department visit. This meeting also enables providers to share the histories of known clinically at-risk patients who may walk in for services. The multi-disciplinary treatment planning meeting brings expands the care team envelop to include substance use care providers, family advocacy representatives, and the brigade surgeon of the aligned unit. This forum enables clinical care providers to coordinate their treatment plans. It also provides the brigade surgeon with an overarching understanding of potential medical readiness impacts of behavioral health conditions.

The EBH model recommends that EBH providers to participate in non-clinical command team run meetings such as the Brigade Health of the Force meetings and the battalion high-risk team. These meetings bring together subject matter experts such as chaplains, financial education and childcare to work with command teams to manage the health and wellness of the population. These meetings provide a deeper understanding of the occupational context within which a Soldier functions, and surfaces additional work-related information that may be relevant to a Soldiers care. EBH providers are observers in this meeting and are only required to share information in a HIPAA compliant (17) manner with command teams.

During our field visits, we observed the impact that these meetings had in creating shared situational awareness across clinical stakeholders. The daily

standup allowed providers to educate their colleague who was on-call for walk-ins about their Soldiers they were worried about. One provider told the walk-in provider to have a particular patient wait, and that she would see the patient at the latest by lunch as there was a potential crisis that might precipitate a walk-in. The Multi-disciplinary treatment planning meetings have enabled other clinics such as substance use and family advocacy adopt an alignment strategy to ensure that command teams see a unified clinical care recommendation. A brigade surgeon reflecting on the meetings noted: *"I don't know what I would do without these meetings"*. We saw that EBH provider ability to participate in command meetings was moderated by the maturity of the EBH implementation, and the command teams willingness to acknowledge HIPAA limitations could prevent a provider from discussing a case in an open forum. As one brigade commander noted, *"Doc, we know you cannot tell us everything, but please step in where you can."*

Discussion

EBH localizes care at the point of need to address three of the key barriers to seeking services: awareness of services (18), accessibility of services (19), and getting time off to get care (20). Command teams at Site Alpha serve as gatekeepers, similar to college faculty (21) and police (22), and know where to direct their Soldier, and whom to contact in order to obtain or share relevant information. Establishing clinics near the workplace cements the alignment between the command and provider roles, and promotes information sharing within the bounds of HIPAA. This alignment enables conversations about the tensions between care

seeking and mission readiness, and is particularly important in helping command shape the occupational environment for Soldiers to promote recovery.

Prior to the implementation of EBH, no single care team owned a Soldier's behavioral healthcare across the spectrum of services from specialty outpatient services to inpatient psychiatric care, making it challenging to meet DoD guidelines for managing transitions (8). The data show that EBH teams in Site Alpha actively manage key transitions such as follow up after inpatient psychiatric stays, deployment and redeployment, that are essential to ensuring safe, high quality care. The data show increased utilization of ambulatory services in EBH clinics, as well as higher utilization of inpatient services. While disease acuity (EBH Soldiers have higher rates of chronic conditions such as PTSD and MDD) can explain some of that variation, more research is needed to understand the drivers of inpatient care utilization.

The EBH model serves as a critical lynch pin to ensure that the system of care is both efficient and effective. The EBH implementation at Site Alpha also surfaces some of the key limitations of the model: provider attrition, initial care fragmentation, and provider separation from professional guilds. The data show the high rate of provider attrition within the first 100 days of joining an EBH clinic. This has a detrimental effect on both clinical care quality, and command trust in the system of care. More research is needed on the root causes of the attrition, and improvements need to be made in the recruitment process for EBH providers. In order to implement EBH, Site Alpha initially reassigned providers to EBH clinics. This created an inequity in service delivery between EBH and non-EBH Soldiers. It

impacted care quality because providers had to divest their panels to other providers, and Soldiers moving into an EBH clinic had to reestablish therapeutic alliance with a new provider. Better change management strategies are needed to prevent patient drop out from care. The geographical distribution of care separates providers from their guilds – particularly psychiatrists or psychiatric nurse practitioners. EBH clinics need to be mindful of this challenge in personnel management.

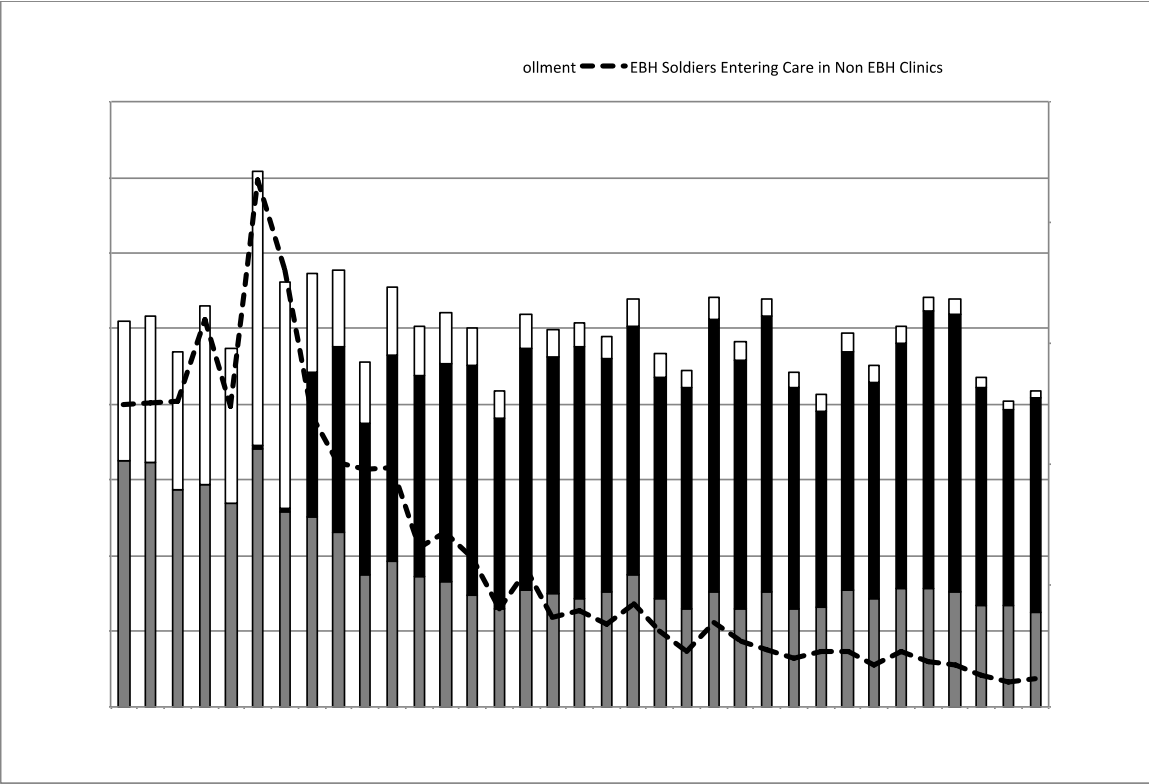


Figure 1 Direct Care Ambulatory Service Use

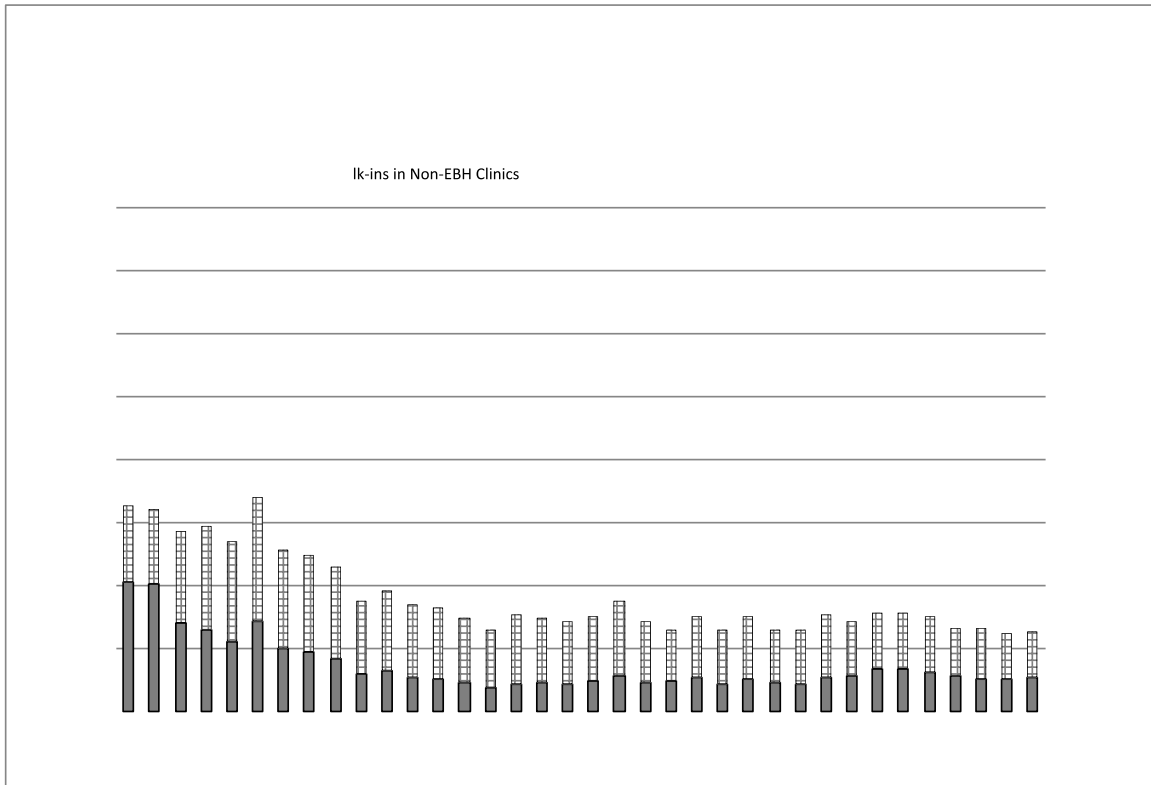


Figure 2 Ambulatory Service Use by Access Modality and Clinic Type

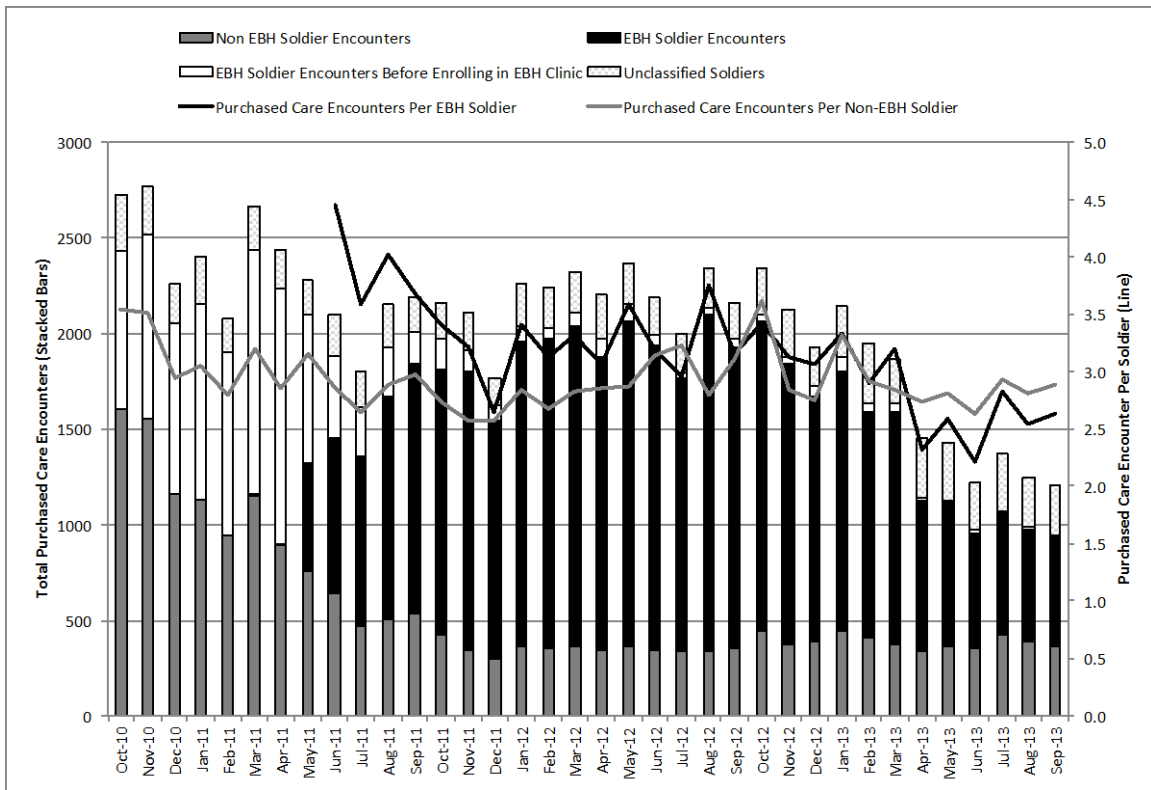


Figure 3 Purchased Care Ambulatory Service Use

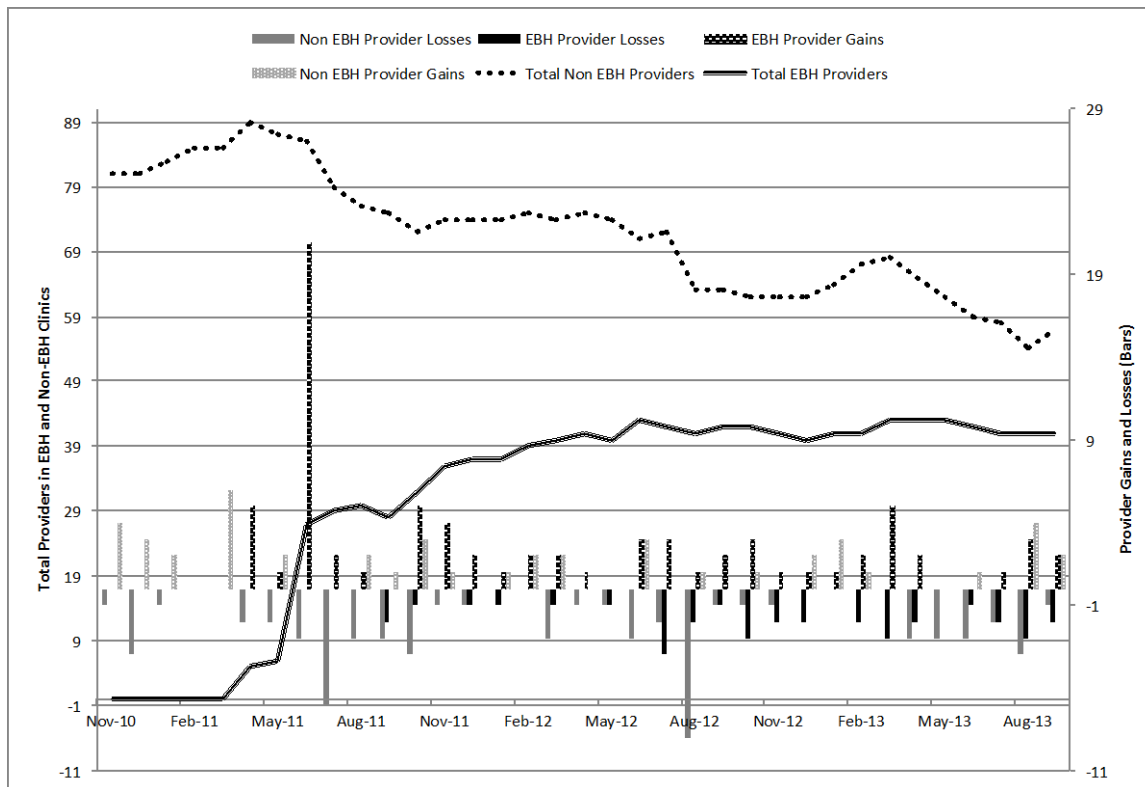


Figure 4 Provider Attrition Over Time

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